

2017

REPORT

Interlaboratory Study on POPs in Food

The eighteenth round of an international study

Nanna Bruun Bremnes
Cathrine Thomsen



Norwegian Institute of Public Health

Interlaboratory Comparison on POPs in Food 2017

The eighteenth round of an international study

Nanna Bruun Bremnes and Cathrine Thomsen

Published by Norwegian Institute of Public Health
Division for Infection Control and Environmental Health
Department for Environmental Exposure and Epidemiology
November 2017

Titel:

Interlaboratory Study on POPs in Food
The eighteenth round of an international study

Authors:

Nanna Bruun Bremnes
Cathrine Thomsen

Order:

The report may be downloaded as a pdf-file
from the web-page: www.fhi.no/ILC

Lay-out design:

Per Kristian Svendsen

Cover graphic design :

Fete Typer

ISBN electronic 978-82-8082-885-9

Emneord (MeSH): Interlaboratory Comparison, POPs, Dioxins, PCB, PBDE

Sitering: Bremnes NB, Thomsen C. Interlaboratory Comparison on POPs in Food 2017. Oslo: The Norwegian Institute of Public Health

Innhold

Summary	4
Introduction	7
Design and practical implementation	11
Study design and reporting of results	11
Collection, preparation, and distribution of samples	12
Statistical analysis	12
The final report and certificate	13
Coordination	13
Results	14
Presentation in the report	14
Summarizing comments on results	14
<i>PCDDs/PCDFs</i>	14
Analyte solution-2017	14
Sheep meat-2017	14
Cod liver-2017	14
Herring	15
<i>Dioxin-like PCBs</i>	15
Analyte solution-2017	15
Sheep meat-2017	15
Cod liver-2017	15
Herring-2017	15
<i>Total TEQ</i>	16
<i>Indicator PCBs</i>	17
Analyte solution-2017	17
Sheep meat-2017	17
Cod liver-2017	17
Herring-2017	17
<i>PBDEs</i>	17
Analyte solution-2017	17
Sheep meat-2017	17
Cod liver-2017	17
Herring-2017	18
<i>HBCD</i>	18
<i>Lipid content</i>	18
Acknowledgements	19

Appendix A: Participants' affiliations and addresses

Appendix B: Study announcement and instructions for participants

Appendix C: WHO TEFs for human risk assessment

Appendix D: Homogeneity testing

Appendix E: Summary of results

 Consensus of congener concentrations

 Consensus of TEQ values

 Consensus statistics

 Laboratories' reported TEQs

 Laboratories' Z-scores

 Z-score plots

Appendix 1: Presentation of results for Analyte solution-2017

Appendix 2: Presentation of results for Sheep meat-2017

Appendix 3: Presentation of results for Cod liver-2017

Appendix 4: Presentation of results for Herring-2017

Appendix 5: Presentation of results for lipid determination-2017

Summary

The 18th round of the Interlaboratory Comparison on POPs in Food was conducted in 2017 by the Norwegian Institute of Public Health (NIPH). The study included the determination of the 2,3,7,8-chlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs), as well as dioxin-like non-ortho and mono-ortho chlorinated biphenyls (PCBs) in three different food items. Additionally, the participating laboratories could determine the concentrations of six indicator PCBs, polybrominated diphenyl ethers (PBDEs) and hexabromocyclododecanes (HBCDs) in the same food samples.

The objectives of this interlaboratory comparison study were

- A. To offer a tool for quality assurance to the participating laboratories
- B. To assess the between laboratory reproducibility
- C. To assess the readiness of expert laboratories worldwide to determine levels of chlorinated and brominated persistent organic pollutants in regular foodstuffs.

In 2017 the study was performed on unfortified homogenates of Sheep meat, Cod liver and Herring.

If desired, the laboratories could also determine the concentrations of PCDDs/PCDFs, non-ortho PCBs, mono-ortho PCBs, indicator PCBs, PBDEs and α -HBCD in standard solutions from Cambridge Isotope Laboratories, provided by NIPH.

The test materials were sent to 78 laboratories worldwide in January, and results were returned from 76 of these.

A draft report was made available on our webpage www.fhi.no/ILC in July 2017, and the deadline for commenting on the published results was set to September 15th 2017.

This report presents the reported results for all seventeen 2,3,7,8-substituted PCDDs/PCDFs, the four non-ortho substituted PCBs #77, 81, 126 and 169 and the eight mono-ortho substituted PCBs #105, 114, 118, 123, 156, 157, 167, 189 in the three food items on a fresh weight and lipid weight basis.

The results of eight PBDEs #28, 47, 99, 100, 153, 154, 183 and 209, six indicator PCBs #28, 52, 101, 138, 153 and 180, and total HBCDs as well as the α -, β - and γ -isomers are also presented.

The consensus concentration (assigned value) for each analyte in the three food samples was determined as follows: For the seventeen 2,3,7,8-substituted PCDDs/PCDFs, the four non-ortho substituted PCBs and the eight mono-ortho substituted PCBs non-detected congeners were assigned a concentration corresponding to the reported detection limits. The median of all reported concentrations for each analyte was then calculated. All values above twice the median were removed from the calculation. The consensus median and consensus mean as well as standard deviation (SD) were calculated from the remaining data.

For the PBDEs, the indicator PCBs and HBCDs the non-detects were removed from the data set. The median of all reported concentrations for each analyte was then calculated. All values above twice the median were removed from the calculation. The consensus median and consensus mean as well as standard deviation (SD) were calculated from the remaining data.

Toxic equivalents (TEQs) were calculated from the consensus values of individual congeners using the toxic equivalency factors derived by WHO 2006 (from 2012: WHO₂₀₀₆TEQs as opposed to WHO₁₉₉₈TEQs as in the reports published before 2012).

Z-scores for the PCDD/PCDF TEQs were calculated for each laboratory using $\pm 20\%$ of the consensus TEQs as a value for target standard deviation ($\sigma=0.2$), on both fresh weight and lipid weight basis. Further, Z-scores were calculated for the non-ortho PCB TEQ, the mono-ortho PCB TEQ, the total TEQ, the sum of six indicator PCBs, the sum of eight PBDEs, total HBCD, and the three isomers of HBCD and for each single congener in all three matrices ($\sigma=0.2$) (both on a fresh weight and a lipid weight basis). The z-scores for each congener in all matrixes on a fresh weight basis are also calculated by the same procedure and presented in the report.

The consensus values of the standard solutions were calculated as mentioned above with the exception of the removal of all values exceeding $\pm 50\%$ of the median prior to the final calculation of the consensus median and mean.

The consensus values for the lipid contents were calculated by first excluding results deviating more than two SD from the mean of all values, and then re-calculating the median, mean and SD.

For the determination of total TEQs in the relatively highly contaminated Cod liver-sample (12 pg TE/g, WHO₂₀₀₆TEFs, fresh weight) Z-scores within ± 1 were obtained by 81 % of the participating laboratories, and Z-scores within ± 2 were achieved by 92 % of the participants (Corresponding to a trueness of $\pm 20\%$ and $\pm 40\%$, respectively). Also for the Herring-sample (total TEQ=1,6 pg TE/g, WHO₂₀₀₆TEFs, fresh weight), a high percentage of the participants achieved good results when considering z-scores, as z-scores within ± 1 were obtained by 83 % and ± 2 were achieved by 93 % of the participants.

For the Sheep meat-sample, which on beforehand rightly was assumed to be quite low-contaminated and therefor more challenging in chemical analytical terms (total TEQ=0.063 pg TE/g, WHO₂₀₀₆TEFs, fresh weight), Z-scores within ± 1 were obtained by 54 % of the reporting participants on fresh weight basis, and Z-scores within ± 2 was achieved by 65 % of the participants.

The relative standard deviation (RSD) calculated for the total TEQ after removal of outliers was 11-14 % for the two samples that had the highest levels of contamination (Herring and Cod liver, respectively). For the low-contaminated Sheep meat-sample the same RSD was 16 %. Considering this, it may be concluded that the abilities and performance of laboratories worldwide in determining dioxin-like compounds is generally good for the three food samples included in this study.

For the food samples, 50-60 laboratories reported results for the six indicator PCBs,

23-37 laboratories reported concentrations for all seven of the tetra- to hepta-PBDEs and 17-21 laboratories reported concentrations for PBDE-209. The concentrations of the sum of the PBDEs with PBDE-209 excluded on fresh weight basis were 14 (19 %), 3667 (9 %) and 583 (14 %) pg/g in Sheep meat, Cod liver and Herring, respectively, with total RSD given in parentheses. The consensus concentrations for PBDE-209 were 72 (n=17, RSD=56 %), 48 (n=19, RSD=61 %) and 20 (n=21, RSD=76 %) pg/g fresh weight in Sheep meat, Cod liver and Herring, in that order.

The total concentrations on fresh weight basis for six indicator PCBs were 446 pg/g (12 %) in Sheep meat, 64077 pg/g (12 %) in Cod liver and 8665 pg/g (12 %) in Herring, with total RSDs given in parentheses.

The consensus concentrations calculated for HBCDs are just indicative values because only a few laboratories reported results (n=9-11).

Introduction

Maximum residue limits and official food control systems are established in many countries for the monitoring of the levels of dioxins and dioxin-like PCBs in food and feed, both to map and to reduce human and animal exposure to these highly toxic pollutants. For the same reasons, the European Union introduced levels of legislation in 2014 for the indicator PCBs as well. To meet these requirements, there is a large demand for chemical analytical laboratories with the skills and abilities to determine these contaminants at very low concentrations and in complex matrixes. It is usually required by the authorities that laboratories performing such measurements are accredited according to ISO standards and prove their competence by successful participation in interlaboratory studies.

This is the 18th round of a world-wide interlaboratory comparison study on dioxin-like compounds, eight PBDEs, six indicator PCBs and HBCD in food, organized by the Department of Environmental Exposure and Epidemiology (Former Department of Exposure and Risk Assessment), at the Norwegian Institute of Public Health (NIPH), Oslo, Norway.

The main objective of this exercise is to assess the between laboratory reproducibility of dioxin-like compounds analyses in frequently consumed foods, and to provide a QA/QC instrument for each participating laboratory to contribute to its proficiency.

The exercise took place from January 2017, when the samples were shipped to the laboratories for analysis, until the reporting deadline in April 2017, when the last reports with results were received. A draft report was made available to the participants on our webpage (<http://www.fhi.no/ILC>) in July, 2017.

All participants from previous rounds in this series of "Interlaboratory Comparisons on POPs in Food" were invited to participate. In addition, several other laboratories announced their interest and were invited to participate. There was no limit to the total number of participating laboratories. The 76 laboratories that submitted results, and thereby contributed to the study results, are presented in Table 1.

Table 1. Participants that reported results in the 17th round of Interlaboratory Comparison on POP's in Food 2017

Agri-Food & Veterinary Authority of Singapore Veterinary Public Health Center Republic of Singapore	ALPA CHIMIES Rouen, France
ALS Czech Republic Pardubice, Czech Republic	ALS Environmental - Burlington Burlington, Ontario, Canada
Arkansas Regional Laboratory Jefferson, Arkansas, United States of America	AsureQuality Limited - Wellington Laboratory Wellington, New Zealand
Australian Ultra Trace Laboratory National Measurement Institute - North Ryde Sydney, Australia	BioDetection Systems B.V. Amsterdam, The Netherlands
Bureau of Quality and Safety of Food (BQSF) Department of Medical Sciences Ministry of Public Health Bangkok, Thailand	Canadian Food Inspection Agency Calgary, Alberta, Canada

CARSO-LSEHL Vénissieux, France	Central Lab of Residue Analysis of Pesticides and Heavy Metals in Foods Giza, Egypt
Centre for Environment, Fisheries and Aquaculture Science (CEFAS) Lowestoft, United Kingdom	Chemical and Veterinary Control Laboratory (CVUA MEL) Münster, Germany
Chemisches und Veterinäruntersuchungsamt (CVUA) Freiburg Freiburg, Germany	China National Center for Food Safety Risk Assessment Beijing, China
Dioxin laboratory of Comprehensive test center of Chinese Academy of Inspection and Quarantine Beijing, China	Environmental Laboratory – IQS Barcelona, Spain
Eurofins Laboratorium Zeeuws Vlaanderen Graauw, The Netherlands	EUROFINS ANATECH São Paulo / SP - CEP 04126-060, Brasil
Eurofins GfA Lab Service GmbH Hamburg, Germany	Fera Science Ltd. York, United Kingdom
Food GmbH Jena Analytik & Consulting Jena, Germany	Food Research Division Health Products and Food Branch Health Canada Ottawa, Canada
Hessisches Landeslabor Wiesbaden, Germany	Hong Kong SAR Government Laboratory Additives, Contaminants and Composition Section Hong Kong, China
Hubei Dioxin Lab Hubei Provincial Centre for Disease Control and Prevention Wuhan, Hubei Province, China	Institute of Quality Standard & Testing Technology for Agro-Products The Chinese Academy of Agricultural Sciences Beijing, China
Istituto Zooprofilattico Sperimentale Abruzzo e Molise "G. Caporale" Teramo, Italy	Istituto Zooprofilattico Sperimentale Lombardia Emilia Romagna-Bologna Bologna, Italy
Japan Food Research Laboratories Nagayama Tama-city, Tokyo, Japan	La Drôme Laboratoire Valence, France
LABERCA - ONIRIS Route de Gachet, France	Laboratorios Tecnológicos de Levante, S.L. Paterna, Spain
Laboratory of SGS Bulgaria Ltd Varna, Bulgaria	Laboratory of Vendee (LEAV) la Roche sur Yon, France
Landesamt für Umweltschutz Sachsen-Anhalt Halle/ Saale, Germany	Landesuntersuchungsamt Insitut für Lebensmittelchemie Speyer, Germany
Marchwood Scientific Services Southampton, United Kingdom	mas münster analytical solutions gmbh Münster, Germany, Germany
Mass Spectrometry and Dioxin Analysis Laboratory National Centre for Scientific Research "Demokritos" Athens, Greece	Micropolluants Technologie SA Saint Julien-Les-Metz, France

Ministry of Food & Drug Safety Food Contaminants Division Chungcheongbuk-do, South of Korea	National Cheng Kung University Research Center for Environmental Trace Toxic Substances Tainan, China
National Institute for Health and Welfare Chemicals and Health unit Kuopio, Finland	NEOTRON S.p.A. Modena, Italy
Niedersächsisches Landesamt für Verbraucherschutz und Lebensmittelsicherheit Lebensmittel-und Veterinärinstitut Oldenburg Oldenburg, Germany	NIFES - National Institute of Nutrition and Seafood Research Bergen, Norway
NILU (Norwegian Institute for Air Research) Kjeller, Norway	Nofalab Schiedam , The Netherlands
Nutrition Analytical Service Institute of Aquaculture Stirling, UK	Oxigen Analiz Laboratuvar Hizmetleri Tic.Ltd.Şti. Istanbul, Turkey
Pacific Rim Laboratories Inc. Surrey BC, Canada	POP Lab Shenzhen Center for Disease Control & Prevention Shenzhen, Guangdong, China
Research and Productivity Council (RPC) Fredericton, New Brunswick, Canada	RIKILT Wageningen, The Netherlands
Scientific Analysis Laboratories Manchester, United Kingdom	Servizos de Apoio á Investigación (Scientific Research Support Service) Coruña, Spain
SGS AXYS Sidney BC, Canada	SGS Belgium NV Division IAC Antwerpen, Belgium
SGS Institut Fresenius GmbH Bayreuth, Germany	SGS Taiwan New Taipei City, Taiwan, China
Shanghai Municipal Center for Disease Control and Prevention Shanghai, China	Shimadzu Techno-Research Inc Environment Division Kyoto, Japan
SIA Analysis Laboratory Edirne, Turkey	SINTEF Materialer og Kjemi Avd. for Bioteknologi og Nanomedisin Trondheim, Norway
State Laboratory - Ireland Celbridge, Kildare, Ireland	Sun Dream Environmental Technology Corporation Food Hygiene Laboratory Taichung City, China
Super Micro Mass Research & Technology Center Cheng Shiu University Niaosong District, Kaohsiung City, Taiwan	TLR International Laboratories Rotterdam, The Netherlands
Umeå University Department of Chemistry Trace Analysis Platform Umeå, Sweden	Wellington Laboratories Inc. Guelph, Ontario, Canada
WESSLING GmbH Altenberge, Germany	Western Region Food Laboratory Regulatory Operations and Regions Branch Health Canada Burnaby, British Columbia, Canada

Worthies Engineering Consultants Corp. Environmental & Ultra Trace Testing Lab Taichung, Taiwan	Ökometric Bayreuth, Germany
---	---------------------------------------

Design and practical implementation

Study design and reporting of results

As in the previous rounds of this interlaboratory comparison study, the test material chosen represented naturally contaminated food items. The analytes to be determined were all seventeen 2,3,7,8-substituted PCDDs/PCDFs, the four non-ortho substituted PCBs #77, 81, 126 and 169 and the eight mono-ortho substituted PCBs #105, 114, 118, 123, 156, 157, 167 and 189. If desired, the laboratories could also determine eight PBDEs #28, 47, 99, 100, 153, 154, 183 and 209, six indicator PCBs #28, 52, 101, 138, 153 and 180, total HBCD and its three isomers (α -, β -, γ -HBCD). The six PCB congeners belong together with the mono-ortho PCB #118 to the selection of PCBs commonly referred to as ICES-7 (ICES-7: Report of the ICES Advisory Committee, 2010; Book 7).

The analysis should be performed using the laboratories' own methods for sample preparation and instrumental analysis, their own quantification standards and quantification procedures, and their own method for lipid determination.

It was recommended that laboratories determined as many as possible of the 2,3,7,8-substituted PCDDs/PCDFs, dioxin-like PCBs, PBDEs, indicator PCBs and HBCD in the samples of Sheep meat, the Cod liver sample and the sample of Herring.

The laboratories were to report the concentration of each detected congener in the food items on fresh weight basis (e.g. $S/N \geq 3$) as well as the limit of detection (LOD, e.g., $S/N = 3$). Non-detected congeners (e.g. $S/N < 3$) were to be marked "ND" in the comments column of the Report forms. As the report was to include the determination of lipid percent in the food samples, the laboratories should also include the determined lipid percentage of the samples as well as sample amount used for the analysis.

In addition to the food samples, six standard solutions containing known concentrations of the analytes could be analyzed, using the laboratories' own quantification standards and methods. The provided standard solutions consisted of the following components:

- 1) Seventeen 2,3,7,8-substituted PCDDs/PCDFs (2:5:10 pg/ μ l for tetra:penta-hexa-hepta:octa chlorinated dibenzo-p-dioxins/-dibenzo furans respectively)
- 2) Four non-ortho PCBs (10 pg/ μ l)
- 3) Eight mono-ortho PCBs (100 pg/ μ l)
- 4) Eight PBDEs (100 pg/ μ l)
- 5) Six indicator PCBs (100 pg/ μ l)
- 6) α -HBCD (500 pg/ μ l)

The test materials consisted of homogenates of Sheep meat, Cod liver and Herring. The laboratories could choose to analyze one, two or all three food samples.

Each participating laboratory was given an exclusive laboratory code by the coordinators. In the present report, the participants are presented in the tables and figures by their unique codes. The participants have access to their own code only, and laboratory codes were not revealed to any third parties.

When received by the coordinators, the raw data from the laboratories were entered into a database. A draft report was generated and made available to all participants on the web page www.fhi.no/ilc in July, 2017.

Collection, preparation, and distribution of samples

Samples shipped to the participants consisted of one to three of the following:

- Sheep meat (~100 g)
- Cod liver (~60 g)
- Herring (~100 g)

The test materials were produced from natural products unfortified with standards.

The Sheep meat was provided by the Norwegian agricultural cooperative “Nortura”. The sheep had been grazing in the Norwegian mountains all summer before slaughtering. The Herring, with origin from the Skagerrak sea, was ordered and bought through a Norwegian grocery store. The Cod liver sample was bought from the Norwegian Sea Food-company Nordkyn Seafood AS and was from the coast of the northern part of Norway.

The Sheep meat arrived as whole, frozen peaces of sheep meat without bones. The meat was grinded and homogenized thoroughly in a large, industrial food grinder.

The Cod liver arrived as frozen, whole livers. The livers were pooled, grinded and homogenized thoroughly by grinding and continuous stirring of the whole batch.

All Herring used to make the Herring-sample was received as whole, fresh fish. At arrival to the Norwegian Institute of Public Health all the fish were filleted before they were pooled, grinded and homogenized.

Sub-samples of at least 100 g of Sheep meat (Sheep meat-2017), 60 g of Cod liver (Cod liver-2017) and 100 g of Herring (Herring-2017) were placed into screw-cap polystyrene bottles. The bottles were all carefully washed, rinsed with methanol and dried before use. All samples were stored at -20 °C until shipment to the participating laboratories.

Statistical analysis

Based on experiences from previous rounds, we have chosen the following approach for the calculation of the consensus concentrations for each of the congeners included in the study:

For PCDDs/PCDFs and dioxin-like PCBs: Congener-by-congener medians were calculated from the food sample data of all reporting laboratories. The detection limits were used as concentration for non-detected congeners (upper bound concentration).

For PBDEs, indicator PCBs and HBCD: Non-detected congeners in the food samples were removed from the data set prior to consensus calculation.

Outliers for all congeners were defined as those values exceeding twice the median of all values and thus removed from the data set.

The consensus values were defined as the median of the remaining data for each congener. The consensus mean and SD were calculated from this data set for each congener. The congener data which were removed prior to consensus calculation are marked accordingly in the tables presenting the individual results.

For the standard solutions, outliers were defined as those values outside $\pm 50\%$ of the median of all reported values and subsequently removed from the data set before the calculation of the median, mean and SD were calculated from the remaining data. The consensus of the lipid content was calculated as the mean after removal of values outside $\pm 2 \cdot \text{SD}$.

TEQs were calculated from the consensus values for PCDDs/PCDFs, non-ortho PCBs, and mono-ortho PCBs, using the toxic equivalency factors derived by WHO in 1998 and 2006. As the detection limit was used for the concentration of non-detects, these TEQs represent upper bound concentrations.

Z-scores on both fresh weight and lipid weight basis for PCDD/PCDF TEQ as well as for the non-ortho PCB TEQ, the mono-ortho PCB TEQ, the total TEQ (WHO₂₀₀₆TEFs), the sum of six indicator PCBs, the sum of eight PBDEs, total HBCD and for each congener were calculated for each laboratory according to the following equation:

$$Z = (x - X)/\sigma$$

Where x = reported value; X = consensus value (assigned value); σ = target value for standard deviation. A σ of 0.2 multiplied by the consensus value was used, i.e. Z-scores between +1 and -1 reflect a deviation of $\pm 20\%$ from the consensus value.

The final report and certificate

The draft of the final report was prepared by the coordinators and published electronically in July 2017.

The final report will be made available to the participants in pdf format at www.fhi.no/ILC.

A certificate of participation, stating the participant's laboratory code, will be sent to each participating laboratory who has contributed to the results by the end of 2017.

Coordination

The study was initiated and carried out by the Dept. of Environmental Exposure and Epidemiology, Norwegian Institute of Public Health, Oslo, Norway. Members of the coordination committee were:

Nanna Bruun Bremnes, Senior Engineer
nanna.margrethe.bruun.bremnes@fhi.no

Cathrine Thomsen, Department Director
cathrine.thomsen@fhi.no

Results

Presentation in the report

Seventy-six laboratories worldwide submitted their results within the deadline and the results are presented in the following chapters. All participating laboratories will be able to compare their own performance, congener by congener, with the other laboratories. Since variations in performances are based on several factors, it is recommended that each laboratory carefully evaluates the factors that, favorably or unfavorably, may have contributed to its performance.

Readers of the report can without being participants in the study or without access to laboratory codes, get a general overview of the analytical performance of laboratories worldwide on the determination on dioxins, dioxin-like PCBs, indicator PCBs, PBDEs and HBCD in regular food stuffs.

In Appendix E the consensus statistics are given on fresh and lipid weight basis for concentrations of individual congeners and TEQ values, a summary of TEQ values for each food item, and the Z-score plots on both fresh and lipid weight basis, based on a target deviation of ± 20 % from the consensus TEQ₂₀₀₆-values.

Individual results reported by the laboratories for each congener are given for Sheep meat, Cod liver and Herring in Appendix 2, 3 and 4. Results of the lipid determinations are presented in Appendix 5.

Summarizing comments on results

PCDDs/PCDFs

Analyte solution-2017

Concentrations for PCDDs/PCDFs were reported by 63 laboratories. The average RSD for the 17 congeners was 7.1 % ranging from 4.9 % for 1,2,3,7,8,9-HxCDF to 8.6 % for 1,2,3,4,6,7,8,9-OCDF. The calculation of Z-scores for the TEQs (target 12.5 pg TEQ/ μ L based on TEF₂₀₀₆-values) of the PCDD/PCDF standard solution showed that 97 % of the laboratories were within the range of ± 20 % of the consensus value. This clearly demonstrates that the calibration solutions used by the laboratories generally are of high quality.

Sheep meat-2017

For the sample of sheep, PCDD/PCDF results from 55 laboratories were received. From these results, the calculated consensus TEQ (PCDD/PCDF TEQ based on WHO₂₀₀₆-TEFs) was 0.026 pg TE/g fresh weight and 0.12 pg TE/g lipid weight.

The average RSD was 46 %, ranging from 30-61 % for 1,2,3,6,7,8-HxCDD and 1,2,3,4,6,7,8,9-OCDF respectively. Z-scores within ± 1 were obtained by 38 % of the laboratories and 59 % of the laboratories had Z-scores within ± 2 (fresh weight basis).

Cod liver-2017

PCDD/PCDF concentrations in the Cod liver sample were reported by 58 laboratories. The consensus TEQ was 2.0 pg TEQ/g fresh weight, and 2.9 pg TEQ/g lipid weight (PCDD/PCDF TEQ based on WHO₂₀₀₆-TEFs). The average RSD was 35 % ranging from 16-

63 % (2,3,7,8-TCDF and 1,2,3,4,7,8-HxCDD respectively). Z-scores were within ± 1 for 78 % of the laboratories and within ± 2 for 92 % of the laboratories (fresh weight basis).

Herring

PCDD/PCDF concentrations in the Herring-sample were determined by 69 laboratories. The consensus TEQ for PCDD/PCDF based on WHO₂₀₀₆TEFs was 0.77 pg TEQ/g fresh weight, and 4.8 pg TEQ/g lipid weight (PCDD/PCDF TEQ based on WHO₂₀₀₆TEFs). The average RSD was 32 % ranging from 16-58 % (2,3,7,8-TCDF and 1,2,3,7,8,9-HxCDF respectively). Z-scores for PCDD/PCDF TEQ within ± 1 were obtained by 86 % of the laboratories and 94 % had Z-scores within ± 2 (fresh weight basis).

Dioxin-like PCBs

Analyte solution-2017

The 12 dioxin-like PCBs in the analyte solution were analyzed and reported by 65 laboratories. The RSDs for the different congeners were ranging from 6.9 % for PCB-118 to 10 % for PCB-81, with an average of 8.3 %.

Sheep meat-2017

Dioxin-like PCB concentrations in the Sheep meat sample were reported from 56 laboratories. The concentrations of the 12 congeners varied between 0.079 pg/g fresh weight (PCB-169) and 36 pg/g fresh weight (CB-118). The average RSD for concentrations of individual dioxin-like PCB congeners was 30 % ranging from 20 % for PCB-105 to 53, % for PCB-123

The dioxin-like PCBs contribute 59 % to the total TEQ (WHO TEF₂₀₀₆) in the sample with PCB-126 as the main contributor (52 %).

Cod liver-2017

Of the participating laboratories, 57-58 measured and reported dioxin-like PCB concentrations in the Cod liver sample. The concentrations ranged from 6.2 pg/g fresh weight for PCB-81 to 14013 pg/g fresh weight for PCB-118. The average RSD for concentrations of individual dioxin-like PCB congeners on fresh weight basis was 23 % ranging from 18 % for PCB-169 to 32 % for PCB-123.

The dioxin-like PCBs contribute to about 84 % of the total TEQ in the sample with PCB-126 as the main contributor (75 %).

Herring-2017

Dioxin-like PCBs in the Herring sample were reported by 69 laboratories. Levels were ranging from 0.88 pg/g fresh weigh for PCB-81 to 1119 pg/g fresh weight for PCB-118. The average RSD for concentrations of individual dioxin-like PCB congeners on fresh weight basis was 24 % ranging from 16 % for PCB-105 to 41 % for PCB-123.

The contribution of the dioxin-like PCBs to the total TEQ was about 53 % with PCB-126 as the main contributor (46 % of total TEQ).

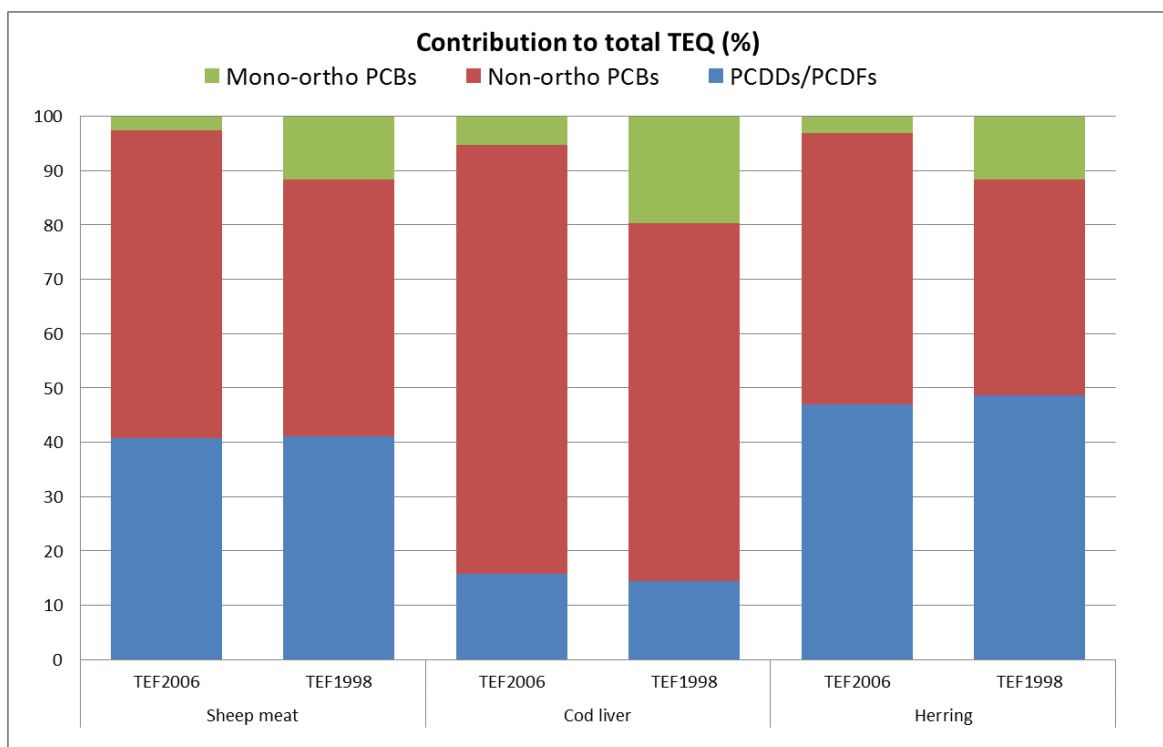
Total TEQ

The total TEQ for the Sheep meat sample was 0.063 pg TEQ/g fresh weight and 0.30 pg TEQ/g lipid weight (WHO TEF₂₀₀₆). The total TEQ of the Cod liver-sample was 12 pg TEQ/g fresh weight and 19 pg TEQ/g lipid weight, and the Herring contained 1.6 pg TEQ/g fresh weight and 10 TEQ/g lipid weight.

The RSDs for total TEQs on fresh weight basis calculated from the RSD of individual congeners were 16 % for Sheep meat, 14 % for Cod liver and 11 % for Herring.

In Figure 1 the contribution on the TEQ-values in percent of the three groups of compounds is depicted based on WHO TEF₂₀₀₆ and WHO TEF₁₉₉₈, respectively. In the selection of food-items included in this study the dioxin-like PCBs contributed from 53 % to 84 % to the total TEQ (using WHO TEF₂₀₀₆), demonstrating the variation in contribution, and the importance of the PCBs for the determination of the total TEQs related to the toxic potency of food samples.

Figure 1. The contribution of PCDDs/PCDFs, non-ortho PCBs and mono-ortho PCBs to the total TEQ calculated using both the WHO₂₀₀₆ TEFs and WHO₁₉₉₈ TEFs, in the three food samples.



Indicator PCBs

Analyte solution-2017

57-58 laboratories reported indicator PCBs in the analyte solution. The average RSD was 8.0 % ranging from 6.7 to 8.9 % (outliers removed).

Sheep meat-2017

For the sample of Sheep meat, results for indicator PCBs were received from 50 laboratories. The consensus concentrations varied between 35 pg/g fresh weight (PCB-180) and 130 pg/g fresh weight (PCB-153). The RSDs were ranging from 22 to 35 % for PCB-101 and PCB-28 respectively, with an average of 28 % for all indicator PCBs. The consensus median for the sum of indicator PCBs was 446 pg/g fresh weight.

Cod liver-2017

Within the deadline, 53 laboratories reported results for indicator PCBs in the Cod liver sample. The consensus concentrations ranged from 2718 pg/g fresh weight (PCB-28) to 23038 pg/g fresh weight (PCB-153) with a consensus median for the sum of indicator PCBs of 64077 pg/g fresh weight. The average RSD was 25 %, ranging from 22 to 31 % for PCB-180 and PCB-28 respectively.

Herring-2017

Results were obtained from 60 laboratories. The concentrations of indicator PCBs in the Herring sample ranged from 367 pg/g fresh weight (PCB-28) to 3415 pg/g (PCB-153) and the consensus median for the sum was 8665 pg/g fresh weight. The average RSD was 26 %, ranging from 21 to 32 % for PCB-101 and PCB-28 respectively.

PBDEs

Analyte solution-2017

The tri- to hepta-PBDE standard solution was analyzed by 31-34 laboratories and 23 laboratories reported values for PBDE-209. The RSDs were between 6.8-12 % for all congeners.

Sheep meat-2017

The PBDE concentrations in Sheep meat were reported by 23-24 laboratories, except for PBDE-209 for which 17 results were received. The consensus concentrations were in the range from 0.46 pg/g fresh weight for PBDE-28 to 6.2 pg/g fresh weight for PBDE-47. The consensus concentration for PBDE-209 was 72 pg/g fresh weight. The sum of tri- to hepta-PBDEs was 14 pg/g fresh weight. The range of RSDs on fresh weight basis was 28-56 %, with an average of 40 % including PBDE-209.

Cod liver-2017

Within the deadline, 27-29 laboratories had reported results for tri- to hepta-PBDEs in Cod liver and 19 laboratories had reported results for PBDE-209. The consensus concentrations varied between 1,3 pg/g fresh weight (PBDE-183) and 2638 pg/g fresh weight (PBDE-47). The concentration for PBDE-209 was 48 pg/g fresh weight. The sum of tri- to hepta-PBDEs was 3667 pg/g fresh weight. The RSD calculated from the

concentrations on fresh weight ranged from 10-61 %, with an average of 28 % for PBDEs including PBDE-209.

Herring-2017

33-37 laboratories reported results for tri- to hepta-PBDEs in Herring, and 21 reported results for PBDE-209. The concentrations varied between 1.4 pg/g fresh weight (PBDE-183) and 345 pg/g (PBDE-47). The concentration for PBDE-209 was 20 pg/g. The sum of tri- to hepta-PBDEs was 583 pg/g fresh weight. The RSDs for the individual congeners were ranging from 22 to 76 % with an average of 33 % including PBDE-209.

HBCD

Also in this round of the study, total HBCD and the isomers α -, β - and γ -HBCD could be determined and reported. A total of 14 laboratories reported α -HBCD in the standard solution and 10-12 laboratories reported one or more of the three isomers in the food samples. The consensus concentrations for the sum of individual HBCD isomers were 7.3 pg/g fresh weight for the Sheep meat sample, 2950 pg/g for the Cod liver and 376 pg/g fresh weight for the Herring sample. Since only a few laboratories reported HBCD, these results must be regarded as indicative values.

Lipid content

The mean and RSDs (in parentheses) for the lipid contents of the food samples were calculated to be 21 % (RSD=7.4 %) for the Sheep meat sample, 68 % (RSD=11 %) for the Cod liver sample and 16 (9.0) for the sample of Herring.

Acknowledgements

The laboratories are acknowledged for their participation in this interlaboratory comparison and in their interest in its overall objectives, thereby making it clear that they value good analytical performance. All the individual analysts are acknowledged for their contributions to the results.

We thank Nortura, Norway, for generously donating the Sheep meat sample and Cambridge Isotope Laboratories, Inc. for providing the standard solutions for this interlaboratory study.

Appendix A:

Participant's affiliations
and addresses

Appendix A: Affiliations and addresses of participants

<p style="text-align: center;">Agri-Food & Veterinary Authority of Singapore Veterinary Public Health Center Chin Yee Soon Singapore 718837 Republic of Singapore Chin_Yee_Soon@ava.gov.sg</p>	<p style="text-align: center;">ALS Czech Republic, s.r.o. Miloslav Sebránek Pardubice, CZ-530 02 Czech Republic miloslav.sebranek@alsglobal.com</p>
<p style="text-align: center;">ALS Environmental - Burlington Magdalena McPherson Burlington, Ontario L7L 0E6 Canada Magdalena.McPherson@ALSGlobal.com</p>	<p style="text-align: center;">ALPA CHIMIES Mr. Francois BLONDEL 76000 ROUEN FRANCE FBLONDEL@alpagroupe.fr</p>
<p style="text-align: center;">Arkansas Regional Laboratory Patrick N. Sisco, PhD Jefferson, AR72079 United States of America Patrick.Sisco@fda.hhs.gov</p>	<p style="text-align: center;">AsureQuality Limited - Wellington Laboratory Ushma Dahya Wellington, 5010 New Zealand wgtm-quality@asurequality.com charlene.gerber@asurequality.com</p>
<p style="text-align: center;">Australian Ultra Trace Laboratory Dr Alan Yates Sydney, NSW 2113 AUSTRALIA dioxins@measurement.gov.au</p>	<p style="text-align: center;">BioDetection Systems B.V. Kees Swart Amsterdam 1098 XH The Netherlands kees.swart@bds.nl</p>
<p style="text-align: center;">Bureau of Quality and Safety of Food (BQSF) Department of Medical Sciences Ministry of Public Health Mr. Supat Sangsuay Bangkok 10510 THAILAND. supat.s@dmsc.mail.go.th</p>	<p style="text-align: center;">Canadian Food Inspection Agency Paul Houle and Nishma Karim Calgary, Alberta, Canada, T2L 2L1 Canada paul.houle@inspection.gc.ca nishma.karim@inspection.gc.ca</p>
<p style="text-align: center;">CARSO-LSEHL Stephanie Defour 69200 Vénissieux France sdefour@groupecarso.com</p>	<p style="text-align: center;">Centre for Environment, Fisheries and Aquaculture Science (Cefas) Jon Barber Lowestoft NR330HT jon.barber@cefasc.co.uk</p>

<p>Central Lab of Residue Analysis of Pesticides and Heavy Metals in Foods Dr Emad Attallah Giza, 12311 Egypt emadata@yahoo.com</p>	<p>Chemical and Veterinary Control Laboratory (CVUA MEL) Dr. Thorsten Bernsmann 48147 Münster Germany thorsten.bernsmann@cvua-mel.de</p>
<p>Chemisches und Veterinäruntersuchungsamt (CVUA) Freiburg Katharina Djuchin D-79114 Freiburg Germany Katharina.Djuchin@cvuafr.bwl.de</p>	<p>China National Center for Food Safety Risk Assessment Dr. Lei Zhang Beijing, 100021 China zhanglei1@cfsa.net.cn</p>
<p>Chinese Academy of Sciences Center for Eco-Environmental Sciences Dioxin Lab Qinghua Zhang Beijing, 100085 China qhzhang@rcees.ac.cn</p>	<p>Danish Veterinary and Food Administration Søren Sørensen 4100 Ringsted Denmark ssn@fvst.dk</p>
<p>Dioxin laboratory of Comprehensive test center of Chinese Academy of Inspection and Quarantine Ding Gangdou Beijing, 100123 China dinggangdou@caiqtest.com</p>	<p>Environmental Laboratory - IQS Dr. Jordi Díaz-Ferrero 08017 Barcelona Spain jordi.diaz@iqs.edu</p>
<p>Eurofins ANATECH Roberta silva São Paulo / SP - CEP 04126-060 Brasil robertasilva@eurofins.com</p>	<p>Eurofins Laboratorium Zeeuws Vlaanderen Drs. G.J.M. de Clercq and Saskia van Goethem 4569 TC Graauw The Netherlands guidodeclercq@eurofins.com saskiavangoethem@eurofins.com</p>
<p>Eurofins GfA Lab Service GmbH Birte Seelig D-21079 Hamburg Germany birteseelig@eurofins.de</p>	<p>Fera Science Ltd. Frankie Smith / Alwyn Fernandes York YO41 1LZ UK frankie.smith@fera.co.uk / alwyn.fernandes@fera.co.uk</p>

<p>Food GmbH Jena Analytik & Consulting Dr. Uwe Dornberger D-07743 Jena Germany u.dornberger@food-jena.de</p>	<p>Health Canada Health Products and Food Branch Food Research Division Thea Rawn Ottawa, ON, K1A 0K9 Canada thea.rawn@hc-sc.gc.ca</p>
<p>Hessisches Landeslabor Harald Thiele D-65203 Wiesbaden Germany harald.thiele@lhl.hessen.de</p>	<p>Hong Kong SAR Government Laboratory Additives, Contaminants and Composition Section Dr. K. C. Chan Hong Kong P.R. China kcchan@govtlab.gov.hk</p>
<p>Hubei Provincial Centre for Disease Control and Prevention Hubei Dioxin Lab Dr. Wen Sheng Wuhan 430079, Hubei Province China pops_hb@163.com</p>	<p>Institute of Quality Standard & Testing Technology for Agro-Products The Chinese Academy of Agricultural Sciences Li Xiaomin Beijing, 100081 China lixiaomin@caas.cn</p>
<p>Istituto Zooprofilattico Sperimentale Abruzzo e Molise "G. Caporale" Gianfranco Diletti Teramo 64100 Italy g.diletti@izs.it r.ceci@izs.it</p>	<p>Istituto Zooprofilattico Sperimentale Lombardia Emilia Romagna Simonetta Menotta 40127 Bologna Italy Italy simonetta.menotta@izsler.it</p>
<p>Japan Food Research Laboratories Toshihiko Yanagi /Seiichiro Iizuka 6-21-6 Nagayama Tama-city Tokyo Japan yanagitos@jfrl.or.jp iizukas@jfrl.or.jp</p>	<p>La Drôme Laboratoire Anne-Gaëlle Valade 26000 Valence France agvalade@ladrome.fr</p>
<p>LABERCA - ONIRIS Vincent Vaccher - Philippe Marchand Route de Gachet, CS 50707 France vincent.vaccher@oniris-nantes.fr philippe.marchand@oniris-nantes.fr</p>	<p>Laboratorios Tecnológicos de Levante S.L. Fermín Toribio Paterna 46980 Spain fermin.toribio@llevantecom</p>

<p style="text-align: center;">Laboratory of SGS Bulgaria Ltd. Veselka Pashova Varna 9003 Bulgaria veselka.pashova@sgs.com</p>	<p style="text-align: center;">Laboratory of Vendee (LEAV) Emmanuelle Quetier F85000 la Roche sur Yon France emmanuelle.quetier@vendee.fr</p>
<p style="text-align: center;">Landesamt für Umweltschutz Sachsen-Anhalt Dr. U. Rauhut 06114 Halle/Saale Germany rauhut@lau.mlu.sachsen-anhalt.de</p>	<p style="text-align: center;">Landesuntersuchungsamt Stefanie Schmitt 67346 Speyer Germany poststelle.ilcsp@lua.rlp.de</p>
<p style="text-align: center;">Marchwood Scientific Services Karolina Songin Southampton, SO15 0HW, UK United Kingdom karolina.songin@marchwood-scientific.co.uk</p>	<p style="text-align: center;">mas münster analytical solutions gmbh Dr. Armin Maulshagen, Dr. Stephan Hamm, Christin Hormann D 48149 Münster, Germany Germany a.maulshagen@mas-tp.com c.hormann@mas-tp.com</p>
<p style="text-align: center;">Mass Spectrometry and Dioxin Analysis Lab. NSCR DEMOKRITOS Dr. Leondios Leondiadis Athens 15310 GREECE leondi@rrp.demokritos.gr</p>	<p style="text-align: center;">Micropolluants Technologie SA Audrey Pierret 57 070 - Saint Julien-Les-Metz France apierret@mp-tech.net</p>
<p style="text-align: center;">Ministry of Food & Drug Safety Youngwoon Kang Chungcheongbuk-do, 363-951 South of Korea youngcloud@korea.kr</p>	<p style="text-align: center;">National Cheng Kung University Dr. Lee Ching Chang and Shu Yao Yang Tainan,704 Taiwan, R.O.C shuyao@mail.ncku.edu.tw</p>
<p style="text-align: center;">National Institute for Health and Welfare Department of Environmental Health Päivi Ruokojärvi FI-70210 Kuopio Finland paivi.ruokojarvi@thl.fi</p>	<p style="text-align: center;">Neutron SPA - Analytical Laboratory Bagatti Marisa 41126 Modena Italy quality@neutron.it</p>

<p>Niedersächsisches Landesamt für Verbraucherschutz und Lebensmittelsicherheit Dr. Elke Bruns-Weller, Dr. Annette Knoll, Dr. Claudia Wenzel D-26133 Oldenburg Germany elke.brun-weller@laves.niedersachsen.de annette.knoll@laves.niedersachsen.de claudia.wenzel@laves.niedersachsen.de</p>	<p>NIFES - National Institute of Nutrition and Seafood Research Bergitte Reiersen and Dagmar Nordgård 5005 Bergen Norway bre@nifes.no dno@nifes.no</p>
<p>NILU (Norwegian Institute for Air Research) Stine Marie Bjørneby 2007 Kjeller Norway smb@nilu.no</p>	<p>Nofalab Natascha Verkaart/Jeroen Markesteijn 3115 JG Schiedam The Netherlands natascha@nofalab.nl jeroen@nofalab.nl</p>
<p>Oxigen Analiz Laboratuvar Hizmetleri Ticaret Ltd. Şti Ecem Yelkenci Istanbul 34500 Turkey info@oxigeanaliz.com ecemyelkenci@oxigenanaliz.com</p>	<p>Pacific Rim Laboratories Inc. Dave Hope Surrey, BC V3S 8P8 Canada dave@pacificrimlabs.com</p>
<p>POP Lab Shenzhen Center for Disease Control & Prevention JianQing Zhang Shenzhen, Guangdong, 518055 China 969676617@qq.com</p>	<p>Research and Productivity Council (RPC) John Macaulay Fredericton, New Brunswick E3B 6Z9 Canada john.macaulay@rpc.ca</p>
<p>RIKILT Guillaume ten Dam Wageningen, 6708 WB Netherlands guillaume.tendam@wur.nl</p>	<p>Scientific Analysis Laboratories Paul Harrington Manchester, M16 9FE United Kingdom paulh@salltd.co.uk</p>
<p>SERVIZOS DE APOIO Á INVESTIGACIÓN Dr. Gerardo Fernández Martínez E-15071 A Coruña Spain saiutc@udc.es</p>	<p>SGS AXYS Dale Hoover Sidney BC V8L 5X2 Canada dhoover@axys.com</p>

<p style="text-align: center;">SGS Belgium NV Geert De Smet Antwerpen B-2030 Belgium geert.desmet@sgs.com</p>	<p style="text-align: center;">SGS Institut Fresenius GmbH Ms Waltraud Verhoeven 95448 Bayreuth Germany waltraud.verhoeven@sgs.com</p>
<p style="text-align: center;">SGS Taiwan Hunting Chen New Taipei City 24803 Taiwan (R.O.C.) hunting.chen@sgs.com</p>	<p style="text-align: center;">Shanghai Municipal Center for Disease Control and Prevention Yuanjie Lin Shanghai 200336 China linyuanjie@scdc.sh.cn</p>
<p style="text-align: center;">Shimadzu Techno-Research, INC. Takumi Takasuga, Michiko Yamashita, Jun Okada Kyoto, 604-8436 Japan t_takasuga00@shimadzu-techno.co.jp m_yamashita01@shimadzu-techno.co.jp j_okada00@shimadzu-techno.co.jp</p>	<p style="text-align: center;">SIA ANALYSIS LABORATORY Zülfükar Karaçay Edirne P.C:22000 Turkey zulfukarkaracay@siaanaliz.com, info@siaanaliz.com</p>
<p style="text-align: center;">SINTEF Materialer og Kjemi Hans Fredrik Kvitvang 7034, Trondheim Norway hans.fredrik.kvitvang@sintef.no</p>	<p style="text-align: center;">The State Laboratory - Ireland Myra Keogh / Colmán Ó Ríordáin Celbridge, Co. Kildare, W23 VW2C Ireland myra.keogh@statelab.ie, colman.oriordain@statelab.ie</p>
<p style="text-align: center;">Sun Dream Environmental Technology Corporation Food Hygiene Laboratory Nicky Cheng Taichung City, 40768 Taiwan, R.O.C. nicky@sundream.com.tw</p>	<p style="text-align: center;">Super Micro Mass Research & Technology Center Cheng Shiu University Huang Ming Feng, Chang-Chien Guo-Ping Niaosong District, Kaohsiung City, 833 Taiwan(ROC) k6208@gcloud.csu.edu.tw guoping@csu.edu.tw</p>
<p style="text-align: center;">TLR International Laboratories L. van Schie Rotterdam 3077 MB The Netherlands qc@tlr.nl</p>	<p style="text-align: center;">Umeå University Department of Chemistry Peter Haglund Umeå S-901 87 Sweden peter.haglund@umu.se</p>

<p style="text-align: center;"> University of Stirling Institute of Aquaculture Nutrition Analytical Service James Dick Stirling FK9 4LA Scotland, UK j.r.dick@stir.ac </p>	<p style="text-align: center;"> Wellington Laboratories Inc. Colleen Tashiro Guelph, Ontario N1G 3M5 Canada colleen@well-labs.com </p>
<p style="text-align: center;"> WESSLING GmbH Dr. Gundula. Cziudaj 48341 Altenberge Germany gundula.cziudaj@wessling.de </p>	<p style="text-align: center;"> Western Region Food Laboratory Arman Alimkulov, Bryan Yu, Daniel Sit Burnaby, British Columbia, V5G 4P2 Canada arman.alimkulov@hc-sc.gc.ca bryan.yu@hc-sc.gc.ca daniel.sit@hc-sc.gc.ca </p>
<p style="text-align: center;"> Worthies Engineering Consultants Corp. Environmental & Ultra Trace Testing Lab David Fang Taichung 40850 Taiwan David603@gmail.com </p>	<p style="text-align: center;"> Ökometric Horst Rottler 95448 Bayreuth Germany rottler@oekometric.de </p>

Appendix B:

Study announcement and
instructions for participants

Announcement for Interlaboratory Comparison on POPs in Food 2017

Introduction

We hereby announce the 18th round of the Interlaboratory Comparison on the Determination of POPs in Food (“The Norwegian POPs in Food-study”). The study is open for academic, regulatory as well as commercial laboratories world-wide. The organizer of this study is Department of Environmental Exposure and Epidemiology at the Norwegian Institute of Public Health, Oslo, Norway. The study is scheduled to take place from January to April 2017.

A draft report will be available by mid July 2017, and the final report will be available to the participants by November 2017. All participants who have contributed to the results will receive a certificate of participation in the study.

Objectives

One of the main objectives of this exercise is to assess the interlaboratory consistency in results from analyses of dioxins, PCBs, PBDEs and HBCDs in regular food items known to contribute to the intake in the general population. Further, the world-wide readiness and capacity in analysing halogenated persistent organic pollutants in food will be demonstrated. The study also serves as a tool of quality assurance for the participating laboratories.

Participants

We encourage all laboratories world-wide working in this field to participate and assess their analytical performance. To do this, participants are requested to completely fill out the Registration Form and mark the desired sample types and what analytes they intend to determine.

Analytical requirements

In this interlaboratory comparison, all the seventeen 2, 3, 7, 8-substituted PCDDs and PCDFs, the four non-ortho PCBs, CB-77, 81, 126 and 169 as well as the eight mono-ortho PCBs, CB-105, 114, 118, 123, 156, 157, 167, and 189 will be assessed.

In addition, the participants are invited to determine six marker PCBs, eight PBDEs and HBCDs. The concentration of the following congeners can be reported: CB-28, 52, 101, 138, 153 and 180 and BDE-28, 47, 99, 100, 153, 154, 183 and 209.

The concentration of α -HBCD, β -HBCD and γ -HBCD as well as the total of these isomers will also be assessed.

The test materials consist of three fresh food homogenates. You can choose to analyse one, two or all three of the food items. We encourage you to determine as many analytes as possible. You are further requested to determine and report the lipid content of the foods.

We also include standard solutions of all analytes that should be analysed as solutions of known concentration, which may be used to check your own calibration solutions.

Test material

The test materials consist of three unfortified natural food product homogenates:

- Sheep meat (labelled “Sheep meat-2017”) ~100 g
- Herring (labelled “Herring-2017”) ~80 g
- Cod liver (labelled “Cod liver-2017”) ~60

The samples will be distributed by an international courier service to the participating laboratories.

Please note:

In order to avoid delay or retention of the samples at customs, please inform us if there are import restrictions in your country for any of the samples.

Instructions for analysis and reporting

Further detailed instructions and reporting forms will be sent by e-mail simultaneously with the dispatch of the samples in January.

In short, the participating laboratories should:

- use their own standard operation procedures for extraction clean-up and instrumental determination
- use their own reference standards for identification and quantification
- report one single concentration for each analyte in each food matrix determined on fresh weight basis
- report limits of detection for all measured analytes in each food item
- report the lipid content

Time schedule

Announcement	December 2016
Return of registration form	January 15th, 2017
Shipment of test material	Third-fourth week, 2017
Confirmation of receipt of test material by participant	Within 7 days
Reporting of test results ^{a)}	April 21th, 2017
Publication of draft report on web-site	July 2017
Final report available to all participants	November 2017

- a) Please be sure that your results are reported on time as there will be **no extension of the deadline.**

Participation fee

All laboratories that have received the test materials will also receive a corresponding invoice in Norwegian kroner (NOK). The participation fee for any combination of the analytes in one food item is 9 500 NOK, in two food items 11 700 NOK, and for the complete set of all three food items 13 900 NOK.

Co-ordinating group

Nanna Bruun Bremnes
nanna.margrethe.bruun.bremnes@fhi.no
Phone: +47 21 07 66 80

Cathrine Thomsen
cathrine.thomsen@fhi.no
Phone: +47 21 07 62 42

E-mail Address

For all enquiries by e-mail, please use dioxin@fhi.no.

Postal Address:

Norwegian Institute of Public Health
P.O.Box 4404 Nydalen
NO-0403 Oslo, Norway

Interlaboratory Comparison on Dioxins in Food 2017

Instructions for participants

January 2017

1. Introduction

This is the 18th Round of the Interlaboratory Comparison Study on the Determination of POPs in Food organised by the Department of Environmental Exposure and Epidemiology, Norwegian Institute of Public Health, Oslo, Norway.

The objective of this exercise is to assess the interlaboratory comparability of the results from analyses of all dioxins and dioxin-like PCBs included in the WHO-TEF schemes in regular foods. Participants may also determine and report concentrations of six marker PCBs, eight polybrominated diphenylethers (PBDEs) and hexabromocyclododecane (HBCD). The exercise serves as a quality assurance instrument for the participating laboratories. A further purpose is to assess the world-wide readiness and capacity for the determination of dioxin-like compounds, marker PCBs, PBDEs and HBCD in food. Instructions for the analysis and submission of results are given below.

Please read these instructions carefully before starting the experimental work.

The participating laboratories will collaboratively assess the interlaboratory comparability in the analytical performance for determination of

- dioxins and furans: all seventeen 2,3,7,8-substituted PCDDs and PCDFs
- non-ortho PCBs: CB-77, 81, 126 and 169
- mono-ortho PCBs: CB-105, 114, 118, 123, 156, 157, 167 and 189.
- marker PCBs: CB-28, 52, 101, 138, 153 and 180
- PBDEs: BDE-28, 47, 99, 100, 153, 154, 183 and 209
- HBCD α -HBCD, β -HBCD, γ -HBCD and total HBCD

in the following samples:

- Sheep meat (Sheep meat-2017)
- Herring (Herring-2017)
- Cod liver (cod liver-2017)

The mentioned analytes can also be determined in the respective six standard solutions. For HBCD, concentrations of α -HBCD, β -HBCD and γ -HBCD as well as the total of these isomers will be assessed.

2. Participants

A list of participants is attached. 76 laboratories have announced their participation in the study.

3. Design of the study

3.1 Test materials

Samples

One standard solution of each:

- EDF-5008-50 with PCDDs/PCDFs at concentrations 2:5:10 pg/μl for tetra:penta-hexa-hepta:octa chlorinated dibenzo-p-dioxins/-dibenzo furans respectively
- EC-4986/1000 with non-ortho PCBs at concentration 10 pg/μl
- EC-4987/100 with mono-ortho PCBs at concentration 100 pg/μl
- EC-5179/50 with marker PCBs at concentration 100 pg/μl
- EO-5103/100 with PBDEs at concentration 25 pg/μl, except BDE-209 at 100 pg/μl
- ULM-4834-S/100 with α-HBCD at a concentration 500 pg/μl

One sample of each

- ca. 100 g sheep meat
- ca. 100 g herring
- ca. 60 g cod liver

Fortification

The samples are prepared from regular market foods. There is no fortification or spiking of the target analytes in the food samples.

Shipment

The samples are fresh frozen food homogenates. They are distributed by international courier and should reach the receiving laboratory in good condition within a few days.

3.2 Coding

Coding of laboratories

Upon arrival of the samples in the participant's laboratory, the Microsoft excel file named "Participant confirmation", shall be filled in and **immediately** returned to the co-ordinators by e-mail or telefax. The code of the laboratory will then be given by the co-ordinators. The laboratory codes will not be revealed to the other participants or to third parties.

Coding of samples

Sheep meat	Sheep meat-2017
Herring	Herring-2017
Cod liver	Cod liver-2017

The above sample coding is marked on the sample bottles.

3.3 Analytical procedure

Storage of the samples

The samples are fresh, frozen homogenates of natural food items. They are shipped frozen and should be stored frozen until they are analysed.

Methods to be used

Laboratories shall use

- their own methods for sample preparation and instrumental analysis
- their own internal- and quantification standards
- their own lipid determination procedure

Standard solutions

The standard solutions should be analysed using the laboratory's own quantification standards and methods and the results shall be reported.

General

Beware of the high risk of background contamination and positive blank values when analysing food samples with levels of dioxins, PCBs, PBDEs and HBCD in the low ppt range.

Use sample size according to expected levels of dioxins for the determinations in order to achieve a detection level that leaves as few as possible analytes as non-detected. The sample amount dispatched is not meant for replicate analyses.

The samples might become inhomogeneous during freezing and transport. Re-homogenise all received material of each food item before any portion is taken out for analysis. This is particularly important for the sample of cod liver!

An estimate of the fat content in the samples follows below:

- Sheep meat: 10-15 %
- Herring: 5-10 %
- Cod liver: 50-70%

4. Reporting

4.1 Results to be reported

Laboratories are recommended to report as many as possible of the congeners mentioned in chapter 1.

The reports **should** include the determined lipid percent for the samples.

The analytical report must include concentrations for all the congeners in all the samples on fresh weight basis, see Report forms B, C, D for PCDD/PCDF and dioxin-like PCBs and Report form 2, 3, 4 for marker PCBs, PBDEs and HBCD.

Laboratories must report one concentration on fresh weight basis for each congener which is detected ($S/N \geq 3$), **as well as** the limit of determination (LOD, $S/N = 3$) for each sample.

Non-detected congeners (S/N <3) must be marked ND in the Comments column of the Report form. **Please note that the LOD will be used as concentration of non-detected congeners.**

4.2 Checklist

Please use the attached checklist before returning the Report forms with your results.

4.3 Submitting results

Three Microsoft Excel files are provided to each participant comprising:

Participants confirmation

- confirmation of receiving test materials

Report form dioxins and dioxinlike PCBs

- analytical data, Report forms A, B, C and D

Report form marker PCBs, PBDEs and HBCD

- analytical data, Report forms 1, 2, 3 and 4

Participants are requested to submit their reports electronically to avoid possible transcription errors.

Please, do not alter rows or columns in the original Report forms!

The electronic report shall be sent to dioxin@fhi.no within the deadline.

If necessary, a hard copy of the Report forms can be provided. Please contact one of the coordinators. If a hard copy report is used, it shall either be faxed to: + 47 21 07 66 86 or mailed to:

Norwegian Institute of Public Health
att. Nanna Bruun Bremnes
P.O. Box 4403 Nydalen
N-0403 Oslo, Norway

Deadline

The reports must be in our hands no later than April 21, 2017 to enable us to prepare the draft report to be published by the end of July 2017. There will normally be no extension of this deadline. A confirmation for the receipt of your results will be sent to you by e-mail within a week.

5. Statistical evaluations

Prior to the final report, a draft version will be prepared based on the data reported by April 21th. The co-ordinators will calculate mean, median and between-laboratory standard deviations for each congener. Outliers will be removed, and consensus values will be calculated. In case of extreme deviation from normal distribution, appropriate procedures will

be used to get a best available estimate of the true value. For the dioxin-like compounds, TEQ values will be calculated for each laboratory and a consensus TEQ value based on the consensus of the congeners. Z-scores will be calculated for laboratories' results for PCDD/PCDF TEQs and PCB TEQs.

6. Final report

The final report will be prepared by the co-ordinators and published in November 2017 and will then be made available for all interested parties in an electronic version on <http://www.fhi.no>. All participants will be presented by their laboratory code. Prior to this, a draft will be published on the Internet by the end of July.

Certificates of participation in the study will be given to all laboratories submitting results.

7. Fee

To all laboratories that have received the materials, an invoice will be sent. The participation fee for any combination of the 29 dioxin-like congeners, six marker PCBs, 8 PBDEs and HBCD is

- NOK 9500 for one food item
- NOK 11700 for two food items
- NOK 13900 for the complete set of all three food items.

Up to six standard solutions will be distributed free of charge to all participants, dependent on which analytes the participating laboratories intend to determine.

Invoices will be sent out after we have received the Participant confirmation from the participants.

8. Time schedule

Announcement	December 2016
Return of registration form	January 15th, 2017
Shipment of test material	Third-fourth week, 2017
Confirmation of receipt of test material by participant	Within 7 days
Reporting of test results ^{a)}	April 21th, 2017
Publication of draft report on web-site	July 2017
Final report available to all participants	November 2017

^{a)} Please be sure that your results are reported in time as there normally will be no extension of the deadline.

9. Co-ordinators of the study

Nanna Bruun Bremnes
nanna.margrethe.bruun.bremnes@fhi.no
 phone: +47-21 07 66 80

Cathrine Thomsen
Cathrine.Thomsen@fhi.no
 phone: +47-21 07 62 42

Postal Address:

Norwegian Institute of Public Health
 P.O. Box 4403 Nydalen
 NO-0403 Oslo, Norway

Checklist

In order to avoid possible misunderstandings and errors when reporting your results, we here give a list of possible pitfalls. Please, check this list and your Report forms before reporting your results.

- Are the results for each congener filled out in the correct order? Be especially aware of 2,3,4,6,7,8- and 1,2,3,7,8,9-HxCDF, and PCB 81.
- Are all congener results reported in pg/ μ l for standards and pg/g for samples?
- Did you remember to report the lipid percent of the samples?
- Are both concentration and LOD reported for each congener?
- Are sample amount and measured lipid content filled in?
- Are not detected congeners marked with ND in the Comments column?

Appendix C:

WHO TEFs for human risk assessment

WHO TEFs for human risk assessment based on the conclusions of the World Health Organisation Meeting in Stockholm, Sweden, 15-18 June 1997 and International Programme on Chemical Safety expert meeting in Geneva, June 2005 (*M. van den Berg et al., Environ Health Perspect 1998;106:775-792; M. van den Berg et al., Toxicological sciences 93(2), 223-241 (2006)*)

Congener	WHO 1998 TEF	WHO 2006 TEF
<i>chlorinated dibenzo-p-dioxiner</i>		
2,3,7,8-TCDD	1	1
1,2,3,7,8-PeCDD	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1
1,2,3,6,7,8-HxCDD	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01
OCDD	0.0001	0.0003
<i>Chlorinated dibenzofuraner</i>		
2,3,7,8-TCDF	0.1	0.1
1,2,3,7,8-PeCDF	0.05	0.03
2,3,4,7,8-PeCDF	0.5	0.3
1,2,3,4,7,8-HxCDF	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01
OCDF	0.0001	0.0003
<i>non-ortho substituted PCBs</i>		
PCB 77	0.0001	0.0001
PCB 81	0.0001	0.0003
PCB 126	0.1	0.1
PCB 169	0.01	0.03
<i>mono-ortho substituted PCBs</i>		
PCB 105	0.0001	0.00003
PCB 114	0.0005	0.00003
PCB 118	0.0001	0.00003
PCB 123	0.0001	0.00003
PCB 156	0.0005	0.00003
PCB 157	0.0005	0.00003
PCB 167	0.00001	0.00003
PCB 189	0.0001	0.00003

Abbreviations used:

T = tetra; Pe = penta; Hx = hexa; Hp = hepta; O = octa;

CDD = chlorodibenzo-p-dioxin; CDF= chlorodibenzofuran; CB= chlorobiphenyl.

Appendix D:

Homogeneity testing

Homogeneity testing of test materials for “Interlaboratory Comparison on Dioxins in Food” organised by the Norwegian Institute of Public Health

Introduction

The International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories (Pure Appl Chem 2006;78:145-96) states that “The bulk material prepared for the proficiency test must be sufficient homogeneous and stable, in respect of each analyte, to ensure that all laboratories receive distribution units that do not differ to any consequential degree in mean analyte concentration. The scheme provider must clearly state the procedure used to establish the homogeneity of the test material”.

The protocol requires that the variation in composition among the distributed units is negligible in relation to variation introduced by the measurements conducted by the participants of the proficiency test (PT). The estimated variation between the samples (s_{sam}) should be less than 30 % of the target standard deviation (σ_p), i.e., $s_{sam} < 0.3 \sigma_p$.

Further the protocol states that homogeneity testing is required to reassure the participants in proficiency testing schemes that the distributed units of the test material are sufficiently similar. The test specified calls for the selection of ten or more units at random after the putative homogenized material has been split and packaged into discrete samples for distribution. The material from each sample is then analyzed in duplicate, under randomized repeatability conditions (that is, all in one run) using a method with sufficient analytical precision. The value of σ_{sam} is then estimated from the mean squares after one-way analysis of variance (ANOVA).

The quality of the analytical method used for homogeneity testing has a large impact on the results. If the analytical precision (σ_{an}) of the homogeneity test is not small, important sampling variation may be obscured by analytical variation. We may get a non-significant result when testing for heterogeneity, not because it is not present, but the test has no power to detect it. It is recommended that the analytical (repeatability) precision of the method used in the homogeneity test should satisfy $\sigma_{an} < 0.5 \sigma_p$

Consequences for the Interlaboratory Comparison on Dioxins in Food

Below follows the consequences for the Interlaboratory Comparison on Dioxin in Food;

1.

The protocol recommends duplicate analysis of at least 10 distribution units. Due to limited amount of test material in each distribution unit and the requirement for sufficiently low analytical standard deviation, the test analysis has to be restricted to PCB, e.g., 6 indicator PCB or CB-153. It is, however, questionable whether analysis of indicator PCB also reflects the distribution of dioxins and other contaminants in the sample, as the test material is often prepared by mixing specifically contaminated material with background contaminated material in order to achieve a sufficient contamination level. Therefore, the distribution of PCBs in the sample might not be relevant for the distribution of dioxins in the sample. The analytical precision of the method used in the homogeneity test should be less than half of the target standard deviation, i.e., $\sigma_{an} < 0.5 \sigma_p$. For determination of dioxins, the target standard deviation may be approximated by the requirement for trueness (Commission Regulation (EC) No 1883/2006) of $\pm 20 \%$ for total TEQ, i.e., the analytical precision should be less than 10 %. This is unrealistic to achieve for the determination of dioxins.

2.

The homogeneity testing using, e.g., the determination of indicator PCBs, requires the analysis of at least 60 samples prior to shipment of the distribution units to the participants. This causes problems for the time schedule of the sample preparation and involves high costs.

3.

The laboratory conducting the homogeneity test on PT analytes would have access to the test material and knowledge of contamination levels prior to the start of the PT and would therefore not be qualified for participation in the PT.

Conclusion

A valid testing of homogeneity of the test materials of the Interlaboratory Comparison (ILC) on Dioxins in Food with respect to the distribution of dioxins and dioxin-like PCBs is not guaranteed using indicator PCBs. It is doubtful that the analytical precision is small enough to detect a lack in sufficient homogeneity. Given the need for annually testing three different matrices for homogeneity, alternative, rapid and low cost homogeneity tests using surrogate should be applied.

Present approach for homogeneity testing for the ILC on Dioxins in Food

The Harmonized Protocol states under Chapter Testing for sufficient homogeneity: “Tests for sufficient homogeneity are in practice never wholly satisfactory... However, given that sufficient homogeneity is a reasonable prior assumption (because proficiency testing scheme providers do their best to ensure it), and that the cost [and time-consumption] of testing for it is often high, it is sensible to make the main emphasis the avoidance of “Type 1 errors” (that is, false rejection of a satisfactory material).

Having this in mind and the facts that it is impossible to determine all analytes for homogeneity testing of food test material and that a single indicator analyte not necessarily reflects the distribution of the other analytes, we have developed an approach that ensures that the test material is thoroughly blended and evenly distributed among the individual test bottles. The homogeneity testing of solid samples is based on the principle of measuring electrolytic conductivity after addition of sodium chloride to a small portion of the coarsely blended test material. A demonstration of homogeneous distribution of the added salt in the sub samples would indicate our ability to evenly blend the food matrix, i.e., with this approach we ensure the efficiency of our blending procedure. This is especially of importance when blending highly contaminated food matrices with background contaminated food matrices.

When testing homogeneity of the food samples, sodium chloride was added to about 10% of the test material in such an amount that the conductivity was about doubled compared to the natural conductivity. This sub-sample was added to the total sample. For example, to 1 kg of homogenised chicken meat, 150 g NaCl were added resulting in an addition of 1 % NaCl to the final test material of 15 kg. Conductivity measurements are performed as follows: boiling water is added to 10.0 g of the test material, and the resulting dispersion is ultrasonicated. After centrifugation, the extract is filtered through folded paper filters and allowed to cool to room temperature. The electrolytic conductivity of the water extract is measured using a conductivity meter.

Homogeneity of the test material was demonstrated by comparing the conductivity in water extracts of 10 samples from the same bottle (variation within bottles), and in extracts from 10 different bottles (variation between bottles).

Example

As an example, the relative standard deviation (RSD) of 10 conductivity measurements within a sample bottle containing chicken meat homogenate was 2 %. The RSD for the measurement of samples from 10 different, randomly selected bottles was 3 %. The contribution of the inhomogeneity to the total variation, calculated from $RSD_{\text{inhomogeneity}}^2 = RSD_{\text{between}}^2 - RSD_{\text{within}}^2$ ¹ was 2.2 % and hence small and acceptable. The total uncertainty for the determination of PCDD/Fs is usually considerably larger, so the measured contribution of inhomogeneity to the total uncertainty can be neglected

¹G. Becher, L.S. Haug, C. Thomsen, World-wide comparison on the quality of analytical determinations of PCDDs/PCDFs and dioxin-like PCBs in food, *Talanta* 63 (2004) 1115-1122.

Appendix E:

Summary results

Consensus of congener concentrations

Consensus of TEQ values

Consensus statistics

Laboratories' reported TEQs

Laboratories' Z-scores

Z-score plots

Consensus congener concentrations

	Sheep meat		Cod liver		Herring	
	pg/g fw.	pg/g lw.	pg/g fw.	pg/g lw.	pg/g fw.	pg/g lw.
2,3,7,8 TCDD	0.0047	0.023	0.44	0.65	0.089	0.54
1,2,3,7,8 PeCDD	0.0080	0.038	0.090	0.13	0.19	1.2
1,2,3,4,7,8 HxCDD	0.0063	0.030	0.012	0.017	0.035	0.21
1,2,3,6,7,8 HxCDD	0.010	0.048	0.36	0.53	0.12	0.75
1,2,3,7,8,9 HxCDD	0.0056	0.027	0.08	0.12	0.026	0.16
1,2,3,4,6,7,8 HpCDD	0.033	0.16	0.15	0.23	0.066	0.41
1,2,3,4,6,7,8,9 OCDD	0.080	0.38	0.15	0.22	0.059	0.36
2,3,7,8 TCDF	0.013	0.063	11	16	1.8	11
1,2,3,7,8 PeCDF	0.0056	0.027	1.4	2.1	0.25	1.5
2,3,4,7,8 PeCDF	0.019	0.090	0.55	0.83	0.87	5.4
1,2,3,4,7,8 HxCDF	0.0090	0.043	0.21	0.31	0.077	0.47
1,2,3,6,7,8 HxCDF	0.0084	0.040	0.40	0.59	0.077	0.47
2,3,4,6,7,8 HxCDF	0.0074	0.035	0.41	0.61	0.092	0.56
1,2,3,7,8,9 HxCDF	0.0050	0.024	0.021	0.031	0.0068	0.042
1,2,3,4,6,7,8 HpCDF	0.010	0.048	0.16	0.24	0.055	0.34
1,2,3,4,7,8,9 HpCDF	0.0073	0.035	0.025	0.037	0.010	0.062
1,2,3,4,6,7,8,9 OCDF	0.012	0.057	0.044	0.066	0.020	0.12
PCB 77	2.4	11	133	198	32	194
PCB 126	0.33	1.6	93	139	7.6	47
PCB 169	0.079	0.38	17	26	1.9	12
PCB 81	0.10	0.49	6.2	9.2	0.88	5.4
PCB 105	9.1	43	4707	7025	335	2060
PCB 114	0.81	3.8	300	447	14	86
PCB 118	36	171	14013	20914	1119	6881
PCB 123	0.42	2.0	226	337	12	74
PCB 156	5.7	27	1200	1791	115	705
PCB 157	0.92	4.4	401	599	31	189
PCB 167	2.3	11	796	1188	77	473
PCB 189	0.50	2.4	86	129	11	69

fw. - fresh weight

lw. - lipid weight

Consensus congener concentrations

	Sheep meat		Cod liver		Herring	
	pg/g fw.	pg/g lw.	pg/g fw.	pg/g lw.	pg/g fw.	pg/g lw.
PCB 28	40	190	2718	4056	367	2257
PCB 52	51	244	6835	10201	656	4034
PCB 101	128	608	9133	13632	1580	9717
PCB 138	62	293	17586	26248	2140	13159
PCB 153	130	618	23038	34385	3415	21005
PCB 180	35	167	4767	7115	507	3118
PBDE 28	0.46	2.2	210	313	23	141
PBDE 47	6.2	30	2638	3938	345	2122
PBDE 99	3.2	15	29	43	74	456
PBDE 100	1.4	6.5	482	720	86	526
PBDE 153	1.2	5.9	4.8	7.2	12	75
PBDE 154	0.58	2.8	302	451	42	259
PBDE 183	0.70	3.3	1.3	2.0	1.4	8.4
PBDE 209	72	341	48	72	20	121
α-HBCD	5.2	25	2850	4254	387	2382
β-HBCD	0.51	2.4	9.6	14	6.9	43
γ-HBCD	1.7	8.3	40	60	20	125
Tot HBCD	7.3	35	2950	4403	376	2312
Sum PCB	446	2121	64077	95637	8665	53290
Sum PBDE without 209	14	65	3667	5474	583	3588
Sum PBDE	85	406	3715	5545	603	3708

fw. - fresh weight

lw. - lipid weight

Consensus of TEQs

TEF₂₀₀₆

	Sheep meat		Cod liver		Herring	
	pg TE/g fw.	pg TE/g lw.	pg TE/g fw.	pg TE/g lw.	pg TE/g fw.	pg TE/g lw.
2,3,7,8-TCDD	0.0047	0.023	0.44	0.65	0.089	0.54
1,2,3,7,8-PeCDD	0.0080	0.038	0.090	0.13	0.19	1.2
1,2,3,4,7,8-HxCDD	0.00063	0.0030	0.0012	0.0017	0.0035	0.021
1,2,3,6,7,8-HxCDD	0.0010	0.0048	0.036	0.053	0.012	0.075
1,2,3,7,8,9-HxCDD	0.00056	0.0027	0.0082	0.012	0.0026	0.016
1,2,3,4,6,7,8-HpCDD	0.00033	0.0016	0.0015	0.0023	0.00066	0.0041
1,2,3,4,6,7,8,9-OCDD	0.000024	0.00011	0.000045	0.000067	0.000018	0.00011
2,3,7,8-TCDF	0.0013	0.0063	1.1	1.6	0.18	1.1
1,2,3,7,8-PeCDF	0.00017	0.00080	0.042	0.063	0.0075	0.046
2,3,4,7,8-PeCDF	0.0057	0.027	0.17	0.25	0.26	1.6
1,2,3,4,7,8-HxCDF	0.00090	0.0043	0.021	0.031	0.0077	0.047
1,2,3,6,7,8-HxCDF	0.00084	0.0040	0.040	0.059	0.0077	0.047
2,3,4,6,7,8-HxCDF	0.00074	0.0035	0.041	0.061	0.0092	0.056
1,2,3,7,8,9-HxCDF	0.00050	0.0024	0.0021	0.0031	0.00068	0.0042
1,2,3,4,6,7,8-HpCDF	0.00010	0.00048	0.0016	0.0024	0.00055	0.0034
1,2,3,4,7,8,9-HpCDF	0.000073	0.00035	0.00025	0.00037	0.00010	0.00062
1,2,3,4,6,7,8,9-OCDF	0.0000036	0.000017	0.000013	0.000020	0.0000059	0.000036
PCB 77	0.00024	0.0011	0.013	0.020	0.0032	0.019
PCB 126	0.033	0.16	9.3	14	0.76	4.7
PCB 169	0.0024	0.011	0.52	0.78	0.058	0.36
PCB 81	0.000031	0.00015	0.0019	0.0028	0.00027	0.0016
PCB 105	0.00027	0.0013	0.14	0.21	0.010	0.062
PCB 114	0.000024	0.00011	0.0090	0.013	0.00042	0.0026
PCB 118	0.0011	0.0051	0.42	0.63	0.034	0.21
PCB 123	0.000013	0.000060	0.0068	0.010	0.00036	0.0022
PCB 156	0.00017	0.00081	0.036	0.054	0.0034	0.021
PCB 157	0.000028	0.00013	0.012	0.018	0.00092	0.0057
PCB 167	0.000068	0.00032	0.024	0.036	0.0023	0.014
PCB 189	0.000015	0.000071	0.0026	0.0039	0.00034	0.0021
PCDDs/PCDFs	0.026	0.12	2.0	2.9	0.77	4.8
Non-ortho PCBs	0.036	0.17	9.9	15	0.82	5.0
Mono-ortho PCBs	0.0017	0.0079	0.65	0.97	0.051	0.32
Total TEQ	0.063	0.30	12	19	1.6	10

fw. - fresh weight

lw. - lipid weight

Consensus of TEQs

TEF₁₉₉₈

	Sheep meat		Cod liver		Herring	
	pg TE/g fw.	pg TE/g lw.	pg TE/g fw.	pg TE/g lw.	pg TE/g fw.	pg TE/g lw.
2,3,7,8-TCDD	0.0047	0.023	0.44	0.65	0.089	0.54
1,2,3,7,8-PeCDD	0.0080	0.038	0.090	0.13	0.19	1.2
1,2,3,4,7,8-HxCDD	0.00063	0.0030	0.0012	0.0017	0.0035	0.021
1,2,3,6,7,8-HxCDD	0.0010	0.0048	0.036	0.053	0.012	0.075
1,2,3,7,8,9-HxCDD	0.00056	0.0027	0.0082	0.012	0.0026	0.016
1,2,3,4,6,7,8-HpCDD	0.00033	0.0016	0.0015	0.0023	0.00066	0.0041
1,2,3,4,6,7,8,9-OCDD	0.0000080	0.000038	0.000015	0.000022	0.0000059	0.000036
2,3,7,8-TCDF	0.0013	0.0063	1.1	1.6	0.18	1.1
1,2,3,7,8-PeCDF	0.00028	0.0013	0.070	0.10	0.013	0.077
2,3,4,7,8-PeCDF	0.0095	0.045	0.28	0.41	0.44	2.7
1,2,3,4,7,8-HxCDF	0.00090	0.0043	0.021	0.031	0.0077	0.047
1,2,3,6,7,8-HxCDF	0.00084	0.0040	0.040	0.059	0.0077	0.047
2,3,4,6,7,8-HxCDF	0.00074	0.0035	0.041	0.061	0.0092	0.056
1,2,3,7,8,9-HxCDF	0.00050	0.0024	0.0021	0.0031	0.00068	0.0042
1,2,3,4,6,7,8-HpCDF	0.00010	0.00048	0.0016	0.0024	0.00055	0.0034
1,2,3,4,7,8,9-HpCDF	0.000073	0.00035	0.00025	0.00037	0.00010	0.00062
1,2,3,4,6,7,8,9-OCDF	0.0000012	0.0000057	0.0000044	0.0000066	0.0000020	0.000012
PCB 77	0.00024	0.0011	0.013	0.020	0.0032	0.019
PCB 126	0.033	0.16	9.3	14	0.76	4.7
PCB 169	0.00079	0.0038	0.17	0.26	0.019	0.12
PCB 81	0.000010	0.000049	0.00062	0.00092	0.000088	0.00054
PCB 105	0.00091	0.0043	0.47	0.70	0.034	0.21
PCB 114	0.00040	0.0019	0.15	0.22	0.0070	0.043
PCB 118	0.0036	0.017	1.4	2.1	0.11	0.69
PCB 123	0.000042	0.00020	0.023	0.034	0.0012	0.0074
PCB 156	0.0028	0.013	0.60	0.90	0.057	0.35
PCB 157	0.00046	0.0022	0.20	0.30	0.015	0.095
PCB 167	0.000023	0.00011	0.0080	0.012	0.00077	0.0047
PCB 189	0.000050	0.00024	0.0086	0.013	0.0011	0.0069
PCDDs/PCDFs	0.030	0.14	2.1	3.1	0.95	5.9
Non-ortho PCBs	0.034	0.16	9.5	14	0.78	4.8
Mono-ortho PCBs	0.0083	0.040	2.9	4.3	0.23	1.4
Total TEQ	0.072	0.34	14	22	2.0	12

fw. - fresh weight

lw. - lipid weight

Consensus statistics

Analyte solution

	Target value pg/μl	Consensus median, pg/μl	Median all values pg/μl	Consensus mean, pg/μl	Standard deviation, pg/μl	Relative standard deviation, %	No. of values reported	No. of values removed
2,3,7,8 TCDD	2.0	2.0	2.0	2.0	0.11	5.2	63	1
1,2,3,7,8 PeCDD	5.0	5.0	5.0	5.1	0.32	6.3	63	1
1,2,3,4,7,8 HxCDD	5.0	5.0	5.0	5.0	0.42	8.4	63	1
1,2,3,6,7,8 HxCDD	5.0	5.0	5.0	5.0	0.38	7.7	63	1
1,2,3,7,8,9 HxCDD	5.0	5.1	5.1	5.1	0.42	8.2	63	1
1,2,3,4,6,7,8 HpCDD	5.0	5.0	5.0	5.0	0.32	6.5	63	2
1,2,3,4,6,7,8,9 OCDD	10	9.8	9.8	9.7	0.65	6.7	63	3
2,3,7,8 TCDF	2.0	2.0	2.0	2.0	0.13	6.4	63	1
1,2,3,7,8 PeCDF	5.0	5.0	5.0	5.0	0.38	7.6	63	1
2,3,4,7,8 PeCDF	5.0	5.0	5.0	4.9	0.39	7.8	63	1
1,2,3,4,7,8 HxCDF	5.0	5.1	5.1	5.1	0.40	7.8	63	1
1,2,3,6,7,8 HxCDF	5.0	5.0	5.0	5.1	0.33	6.6	63	1
2,3,4,6,7,8 HxCDF	5.0	5.0	5.0	5.0	0.29	5.9	63	2
1,2,3,7,8,9 HxCDF	5.0	5.1	5.1	5.1	0.25	4.9	63	2
1,2,3,4,6,7,8 HpCDF	5.0	5.0	5.0	5.0	0.39	7.9	63	1
1,2,3,4,7,8,9 HpCDF	5.0	4.9	5.0	4.9	0.40	8.2	63	2
1,2,3,4,6,7,8,9 OCDF	10	10	10	9.9	0.85	8.6	63	2
PCB 77	10	10	10	9.8	0.84	8.6	65	3
PCB 126	10	9.9	9.9	9.8	0.99	10	65	2
PCB 169	10	9.8	9.8	9.7	0.80	8.2	65	2
PCB 81	10	10	10	9.9	1.0	10	65	2
PCB 105	100	100	100	99	7.5	7.6	65	3
PCB 114	100	98	98	98	7.2	7.4	65	3
PCB 118	100	100	100	99	6.8	6.9	65	3
PCB 123	100	100	100	99	9.5	9.5	65	3
PCB 156	100	100	99	99	7.6	7.7	65	3
PCB 157	100	99	99	98	7.6	7.7	65	3
PCB 167	100	99	99	98	8.0	8.1	65	3
PCB 189	100	100	100	99	8.3	8.3	65	4

Consensus statistics

Analyte solution

	Target value pg/μl	Median, pg/μl all values	Median, pg/μl outliers removed	Mean, pg/μl all values	Mean, pg/μl outliers removed
PCB 28	100	100	100	99	99
PCB 52	100	99	99	99	99
PCB 101	100	100	100	99	99
PCB 138	100	99	99	99	99
PCB 153	100	100	100	99	99
PCB 180	100	100	100	100	100
PBDE 28	25	25	25	24	25
PBDE 47	25	24	24	24	24
PBDE 99	25	25	25	24	25
PBDE 100	25	24	25	24	24
PBDE 153	25	24	24	24	24
PBDE 154	25	24	24	24	24
PBDE 183	25	25	25	24	24
PBDE 209	100	93	94	88	93
α-HBCD *	500	501	501	499	499

	Relative standard deviation, % all values	Relative standard deviation, % outliers removed	Number of reported values	Number of reported outliers
PCB 28	8.3	8.3	58	0
PCB 52	7.5	7.5	58	0
PCB 101	7.5	7.5	57	0
PCB 138	8.9	8.9	58	0
PCB 153	6.7	6.7	58	0
PCB 180	8.8	8.8	58	0
PBDE 28	13	7.0	34	1
PBDE 47	13	7.2	34	1
PBDE 99	13	6.8	34	1
PBDE 100	13	7.5	34	1
PBDE 153	13	7.9	34	1
PBDE 154	14	8.0	34	1
PBDE 183	15	9.8	31	1
PBDE 209	24	12	23	2
α-HBCD *	8	8.4	14	0

NDs: Non-detects

* : Indicative value due to few reported values

Consensus statistics

Sheep meat, fresh weight

	Consensus median, pg/g	Median all values pg/g	Consensus mean, pg/g	Standard deviation, pg/g	Relative standard deviation, %	No. of values reported	No. of values removed	No. of reported non-detects
2,3,7,8-TCDD	0.0047	0.0050	0.0051	0.0026	52	55	12	38
1,2,3,7,8-PeCDD	0.0080	0.010	0.0086	0.0039	45	55	12	29
1,2,3,4,7,8-HxCDD	0.0063	0.0089	0.0073	0.0031	42	55	12	27
1,2,3,6,7,8-HxCDD	0.010	0.010	0.010	0.0031	30	55	11	22
1,2,3,7,8,9-HxCDD	0.0056	0.0080	0.0064	0.0033	52	55	13	36
1,2,3,4,6,7,8-HpCDD	0.033	0.035	0.034	0.011	33	55	8	10
1,2,3,4,6,7,8,9-OCDD	0.080	0.090	0.081	0.037	46	55	10	12
2,3,7,8-TCDF	0.013	0.016	0.014	0.0066	47	55	12	17
1,2,3,7,8-PeCDF	0.0056	0.0097	0.0074	0.0038	51	55	12	31
2,3,4,7,8-PeCDF	0.019	0.020	0.018	0.0058	32	55	10	11
1,2,3,4,7,8-HxCDF	0.0090	0.010	0.0096	0.0033	35	55	15	20
1,2,3,6,7,8-HxCDF	0.0084	0.010	0.0092	0.0036	40	55	13	19
2,3,4,6,7,8-HxCDF	0.0074	0.0089	0.0081	0.0035	43	55	13	23
1,2,3,7,8,9-HxCDF	0.0050	0.0073	0.0054	0.0033	60	55	16	42
1,2,3,4,6,7,8-HpCDF	0.010	0.013	0.011	0.0053	47	55	14	20
1,2,3,4,7,8,9-HpCDF	0.0073	0.010	0.0085	0.0050	59	55	11	37
1,2,3,4,6,7,8,9-OCDF	0.012	0.018	0.013	0.0080	61	55	15	28
PCB 77	2.4	2.4	2.4	0.57	23	56	1	0
PCB 126	0.33	0.34	0.34	0.10	30	56	3	5
PCB 169	0.079	0.080	0.080	0.029	36	56	7	12
PCB 81	0.10	0.11	0.11	0.039	37	56	6	11
PCB 105	9.1	9.1	9.0	1.8	20	56	3	1
PCB 114	0.81	0.84	0.79	0.22	28	56	8	12
PCB 118	36	36	35	7.2	21	56	3	0
PCB 123	0.42	0.58	0.49	0.26	53	56	19	16
PCB 156	5.7	5.7	5.6	1.4	26	56	3	3
PCB 157	0.92	0.94	0.87	0.20	23	56	9	9
PCB 167	2.3	2.4	2.3	0.71	30	56	6	4
PCB 189	0.50	0.52	0.54	0.19	36	56	9	16

Consensus statistics

Sheep meat, fresh weight

	Median, pg/g all values	Median, pg/g outliers removed	Median, pg/g outliers and NDs removed	Mean, pg/g all values	Mean, pg/g outliers removed	Mean, pg/g outliers and NDs removed
PCB 28	43	40	40	55	42	43
PCB 52	52	51	51	68	53	53
PCB 101	128	128	128	144	122	122
PCB 138	62	61	62	74	62	63
PCB 153	136	130	130	153	131	131
PCB 180	36	35	35	41	34	34
PBDE 28	0.51	0.49	0.46	0.70	0.49	0.47
PBDE 47	6.9	6.2	6.2	9.5	6.4	6.4
PBDE 99	3.5	3.2	3.2	4.7	3.7	3.7
PBDE 100	1.5	1.4	1.4	1.9	1.6	1.6
PBDE 153	1.3	1.2	1.2	1.5	1.3	1.3
PBDE 154	0.61	0.57	0.58	0.92	0.58	0.62
PBDE 183	0.87	0.79	0.70	1.3	0.76	0.79
PBDE 209	81	76	72	777	66	65
α-HBCD *	8.3	5.2	5.2	122	4.8	4.8
β-HBCD *	1.6	0.40	0.51	22	0.69	0.51
γ-HBCD *	5.8	1.5	1.7	30	3.5	4.3
Tot HBCD *	10	7.3	7.3	135	7.3	8.5

	Relative standard deviation, % all values	Relative standard deviation, % outliers removed	Relative standard deviation, % outliers and NDs removed	Number of reported values	Number of outliers	Number of reported NDs
PCB 28	91	37	35	50	5	2
PCB 52	85	31	28	50	4	2
PCB 101	70	22	22	50	3	0
PCB 138	75	34	32	50	3	1
PCB 153	69	25	25	50	3	0
PCB 180	74	28	26	50	3	2
PBDE 28	74	42	43	24	4	3
PBDE 47	84	32	32	24	4	0
PBDE 99	78	36	36	24	2	0
PBDE 100	78	36	37	24	2	1
PBDE 153	47	38	28	24	2	2
PBDE 154	104	42	37	24	4	5
PBDE 183	108	54	48	23	4	8
PBDE 209	361	53	56	17	3	2
α-HBCD *	217	74	46	10	4	4
β-HBCD *	190	130	79	10	4	7
γ-HBCD *	145	124	109	10	3	6
Tot HBCD *	227	79	69	9	3	3

NDs: Non-detects

* : Indicative value due to few reported values

Consensus statistics

Cod liver, fresh weight

	Consensus median, pg/g	Median all values pg/g	Consensus mean, pg/g	Standard deviation, pg/g	Relative standard deviation, %	No. of values reported	No. of values removed	No. of reported non-detects
2,3,7,8-TCDD	0.44	0.44	0.43	0.10	23	58	1	1
1,2,3,7,8-PeCDD	0.090	0.091	0.083	0.038	45	58	4	13
1,2,3,4,7,8-HxCDD	0.012	0.022	0.015	0.0096	63	58	15	42
1,2,3,6,7,8-HxCDD	0.36	0.36	0.35	0.093	27	58	1	2
1,2,3,7,8,9-HxCDD	0.082	0.086	0.078	0.028	36	58	4	10
1,2,3,4,6,7,8-HpCDD	0.15	0.16	0.15	0.051	33	58	6	10
1,2,3,4,6,7,8,9-OCDD	0.15	0.19	0.16	0.075	46	58	10	12
2,3,7,8-TCDF	11	11	11	1.7	16	58	0	0
1,2,3,7,8-PeCDF	1.4	1.4	1.5	0.31	22	58	1	0
2,3,4,7,8-PeCDF	0.55	0.56	0.54	0.16	29	58	2	2
1,2,3,4,7,8-HxCDF	0.21	0.21	0.21	0.048	23	58	2	2
1,2,3,6,7,8-HxCDF	0.40	0.40	0.39	0.11	27	58	1	2
2,3,4,6,7,8-HxCDF	0.41	0.41	0.39	0.10	26	58	3	2
1,2,3,7,8,9-HxCDF	0.021	0.027	0.024	0.012	52	58	14	36
1,2,3,4,6,7,8-HpCDF	0.16	0.16	0.16	0.057	37	58	4	5
1,2,3,4,7,8,9-HpCDF	0.025	0.031	0.027	0.013	49	58	13	36
1,2,3,4,6,7,8,9-OCDF	0.044	0.054	0.047	0.023	48	58	16	27
PCB 77	133	133	134	25	19	58	0	0
PCB 126	93	93	91	20	22	58	0	0
PCB 169	17	17	17	3.1	18	58	2	0
PCB 81	6.2	6.2	5.9	1.8	30	57	3	1
PCB 105	4707	4707	4781	1038	22	58	0	0
PCB 114	300	300	303	65	21	58	0	0
PCB 118	14013	14013	13912	3143	23	58	0	0
PCB 123	226	229	226	73	32	58	2	3
PCB 156	1200	1200	1212	254	21	58	0	0
PCB 157	401	401	397	75	19	58	0	0
PCB 167	796	814	786	185	24	58	2	1
PCB 189	86	86	88	23	26	58	0	0

Consensus statistics

Cod liver, fresh weight

	Median, pg/g all values	Median, pg/g outliers removed	Median, pg/g outliers and NDs removed	Mean, pg/g all values	Mean, pg/g outliers removed	Mean, pg/g outliers and NDs removed
PCB 28	2722	2718	2718	2857	2775	2775
PCB 52	6835	6835	6835	6828	6828	6828
PCB 101	9200	9133	9133	9232	9045	9045
PCB 138	17772	17586	17586	18123	17608	17608
PCB 153	23069	23038	23038	23380	22913	22913
PCB 180	4801	4767	4767	4898	4639	4639
PBDE 28	210	210	210	232	209	209
PBDE 47	2638	2638	2638	2659	2659	2659
PBDE 99	29	29	29	45	29	29
PBDE 100	486	482	482	493	476	476
PBDE 153	5.0	4.8	4.8	27	5.0	5.0
PBDE 154	303	303	302	308	308	304
PBDE 183	2.0	1.3	1.3	20	1.5	1.6
PBDE 209	87	48	48	447	53	51
α-HBCD *	2850	2850	2850	2869	2869	2869
β-HBCD *	9.6	6.0	9.6	67	6.7	8.4
γ-HBCD *	44	39	40	138	42	46
Tot HBCD *	2950	2950	2950	2968	2968	2968

	Relative standard deviation, % all values	Relative standard deviation, % outliers removed	Relative standard deviation, % outliers and NDs removed	Number of reported values	Number of outliers	Number of reported NDs
PCB 28	37	31	31	53	1	0
PCB 52	23	23	23	53	0	0
PCB 101	28	24	24	53	1	0
PCB 138	33	26	26	53	1	0
PCB 153	27	23	23	53	1	0
PCB 180	34	22	22	53	2	0
PBDE 28	39	13	13	28	2	0
PBDE 47	12	12	12	29	0	0
PBDE 99	167	20	20	29	2	0
PBDE 100	21	10	10	29	1	0
PBDE 153	302	26	26	29	4	2
PBDE 154	27	27	27	29	0	1
PBDE 183	376	53	52	27	10	11
PBDE 209	197	74	61	19	7	5
α-HBCD *	13	13	13	11	0	0
β-HBCD *	159	48	51	11	4	6
γ-HBCD *	138	44	31	11	3	3
Tot HBCD *	14	14	14	11	0	0

NDs: Non-detects

* : Indicative value due to few reported values

Consensus statistics

Herring, fresh weight

	Consensus median, pg/g	Median all values pg/g	Consensus mean, pg/g	Standard deviation, pg/g	Relative standard deviation, %	No. of values reported	No. of values removed	No. of reported non-detects
2,3,7,8-TCDD	0.089	0.089	0.087	0.020	23	69	1	2
1,2,3,7,8-PeCDD	0.19	0.19	0.19	0.050	27	69	0	2
1,2,3,4,7,8-HxCDD	0.035	0.036	0.035	0.012	34	69	5	11
1,2,3,6,7,8-HxCDD	0.12	0.12	0.12	0.030	26	69	1	3
1,2,3,7,8,9-HxCDD	0.026	0.027	0.027	0.010	38	69	9	17
1,2,3,4,6,7,8-HpCDD	0.066	0.067	0.067	0.020	30	69	5	9
1,2,3,4,6,7,8,9-OCDD	0.059	0.068	0.066	0.027	40	69	15	15
2,3,7,8-TCDF	1.8	1.8	1.8	0.28	16	69	0	0
1,2,3,7,8-PeCDF	0.25	0.25	0.25	0.046	18	69	0	0
2,3,4,7,8-PeCDF	0.87	0.87	0.84	0.14	17	69	0	0
1,2,3,4,7,8-HxCDF	0.077	0.077	0.076	0.019	25	69	2	3
1,2,3,6,7,8-HxCDF	0.077	0.077	0.076	0.020	26	69	2	3
2,3,4,6,7,8-HxCDF	0.092	0.092	0.090	0.026	29	69	2	4
1,2,3,7,8,9-HxCDF	0.0068	0.010	0.0085	0.0050	58	69	22	42
1,2,3,4,6,7,8-HpCDF	0.055	0.057	0.058	0.020	34	69	4	6
1,2,3,4,7,8,9-HpCDF	0.010	0.011	0.0099	0.0048	49	69	20	40
1,2,3,4,6,7,8,9-OCDF	0.020	0.024	0.020	0.011	54	69	18	31
PCB 77	32	32	31	6.8	22	69	0	0
PCB 126	7.6	7.6	7.3	1.9	26	69	0	1
PCB 169	1.9	1.9	1.8	0.48	26	69	2	3
PCB 81	0.88	0.91	0.85	0.28	33	69	7	5
PCB 105	335	335	328	54	16	69	0	0
PCB 114	14	14	14	3.7	27	69	2	2
PCB 118	1119	1119	1123	203	18	69	0	0
PCB 123	12	15	14	5.6	41	69	16	7
PCB 156	115	115	110	19	17	69	0	0
PCB 157	31	31	31	5.6	18	69	0	0
PCB 167	77	77	75	17	23	69	2	1
PCB 189	11	11	11	2.5	22	69	0	2

Consensus statistics

Herring, fresh weight

	Median, pg/g all values	Median, pg/g outliers removed	Median, pg/g outliers and NDs removed	Mean, pg/g all values	Mean, pg/g outliers removed	Mean, pg/g outliers and NDs removed
PCB 28	378	367	367	406	381	381
PCB 52	656	656	656	649	649	649
PCB 101	1592	1580	1580	1646	1584	1584
PCB 138	2145	2140	2140	2311	2261	2261
PCB 153	3415	3415	3415	3411	3411	3411
PCB 180	508	507	507	516	504	504
PBDE 28	23	23	23	31	24	24
PBDE 47	348	345	345	377	355	355
PBDE 99	74	74	74	83	77	77
PBDE 100	86	86	86	91	88	88
PBDE 153	12	12	12	16	12	12
PBDE 154	43	43	42	43	43	42
PBDE 183	1.6	1.4	1.4	4.4	1.5	1.5
PBDE 209	41	20	20	154	31	27
α-HBCD *	387	387	387	366	366	366
β-HBCD *	6.9	6.1	6.9	31	5.6	7.4
γ-HBCD *	22	20	20	41	19	20
Tot HBCD *	376	376	376	374	374	374

	Relative standard deviation, % all values	Relative standard deviation, % outliers removed	Relative standard deviation, % outliers and NDs removed	Number of reported values	Number of outliers	Number of reported NDs
PCB 28	40	32	32	60	3	0
PCB 52	27	27	27	60	0	0
PCB 101	29	21	21	60	2	0
PCB 138	32	29	29	60	1	0
PCB 153	22	22	22	60	0	0
PCB 180	28	23	23	60	1	0
PBDE 28	93	22	22	37	4	1
PBDE 47	32	22	22	37	2	0
PBDE 99	34	24	24	37	2	0
PBDE 100	32	24	24	37	1	0
PBDE 153	94	26	26	37	2	1
PBDE 154	36	36	34	37	0	1
PBDE 183	308	40	37	33	6	12
PBDE 209	250	84	76	21	5	5
α-HBCD *	33	33	33	12	0	0
β-HBCD *	158	63	34	12	3	6
γ-HBCD *	106	29	23	12	3	4
Tot HBCD *	33	33	33	11	0	0

NDs: Non-detects

* : Indicative value due to few reported values

Laboratories' reported TEQs, sum indicator PCB and sum PBDE without PBDE 209

TEF ₂₀₀₆	Median pg/g	Mean pg/g	Standard deviation, pg/g	Relative standard deviation, %	Min pg/g	Max pg/g	Reporting laboratories
Sheep meat, fresh weight							
PCDD/PCDF TEQ	0.031	0.065	0.073	113	0.016	0.42	56
Non-ortho PCB TEQ	0.037	0.044	0.031	71	0.011	0.22	56
Mono-ortho PCB TEQ	0.0017	0.0019	0.0011	57	0.00052	0.0080	56
Total TEQ	0.069	0.11	0.099	91	0.037	0.45	57
Sum indicator PCB	457	535	380	71	79	2555	50
Sum PBDE without PBDE 209	16	21	14	68	8.3	63	24
Cod liver, fresh weight							
PCDD/PCDF TEQ	2.0	2.3	1.3	55	0.86	9.2	59
Non-ortho PCB TEQ	9.9	9.7	1.9	19	3.9	16	58
Mono-ortho PCB TEQ	0.66	0.65	0.14	21	0.15	1.0	58
Total TEQ	13	13	2.3	19	6.2	19	59
Sum indicator PCB	64310	65319	17794	27	13500	143847	53
Sum PBDE without PBDE 209	3716	3775	510	14	3155	5477	29
Herring, fresh weight							
PCDD/PCDF TEQ	0.78	0.96	0.19	20	0.26	2.0	70
Non-ortho PCB TEQ	0.82	0.80	0.20	25	0.17	1.5	69
Mono-ortho PCB TEQ	0.051	0.052	0.0088	17	0.020	0.070	69
Total TEQ	1.7	1.6	0.32	19	0.58	2.9	70
Sum indicator PCB	8867	8939	2155	24	3060	18341	60
Sum PBDE without PBDE 209	595	646	206	32	183	1471	37

Laboratories' reported TEQs, sum indicator PCB and sum PBDE without PBDE 209

TEF ₁₉₉₈	Median pg/g	Mean pg/g	Standard deviation, pg/g	Relative standard deviation, %	Min pg/g	Max pg/g	Reporting laboratories
Sheep meat, fresh weight							
PCDD/PCDF TEQ	0.035	0.065	0.079	122	0.018	0.46	56
Non-ortho PCB TEQ	0.035	0.041	0.028	69	0.0086	0.21	56
Mono-ortho PCB TEQ	0.0084	0.0099	0.0061	62	0.0024	0.043	56
Total TEQ	0.078	0.12	0.10	87	0.049	0.49	57
Sum indicator PCB	457	535	380	71	79	2555	50
Sum PBDE without PBDE 209	16	21	14	68	8.3	63	24
Cod liver, fresh weight							
PCDD/PCDF TEQ	2.1	2.3	1.3	56	0.91	9.7	59
Non-ortho PCB TEQ	9.5	9.3	1.9	21	1.8	15	58
Mono-ortho PCB TEQ	2.9	2.9	0.58	20	0.63	4.6	58
Total TEQ	15	14	2.6	18	6.8	22	59
Sum indicator PCB	64310	65319	17794	27	13500	143847	53
Sum PBDE without PBDE 209	3716	3775	510	14	3155	5477	29
Herring, fresh weight							
PCDD/PCDF TEQ	0.96	0.96	0.19	20	0.32	2.0	70
Non-ortho PCB TEQ	0.78	0.75	0.19	26	0.16	1.5	69
Mono-ortho PCB TEQ	0.23	0.23	0.037	16	0.086	0.29	69
Total TEQ	2.0	1.9	0.33	17	0.69	2.9	70
Sum indicator PCB	8867	8939	2155	24	3060	18341	60
Sum PBDE without PBDE 209	595	646	206	32	183	1471	37

Laboratories' Z-scores: Analyte solution

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	0.16	0.23	-0.56	-0.035	0.20		
2							
3							
4							
5	0.30	0.33	0.027	-0.43	-0.060	-0.33	-0.045
6							
7							
8	-0.19	-0.22	0.083	-0.10	-0.085	-1.7	0.17
9							
10							
11							
12							
13							
14	-0.13	-0.11	-0.34	-0.26	0.12	-2.0	-0.40
15	0.30	-0.093	4.1	0.049	-0.22		
16							
17	-0.34	-0.38	0.036	0.19	0.12	-3.1	-3.1
18	0.063	0.051	0.17	0.28	0.78	-1.2	0.18
19	0.047	0.047	0.047	0.11	0.098		
20	0.13	0.15	-0.086	0.23	0.55	-2.3	-0.75
21							
22							
23	0.038	0.092	-0.48	0.090	0.20	0.034	-0.063
24							
25	0.12	0.14	-0.0066	-4.5	0.29		
26							
27							
28	0.11	0.15	-0.26	-0.13	-0.056	-0.32	-0.46
29							
30	0.054	0.052	0.063	0.17			
31							
32	0.066	0.14	-0.64	-0.0027	-0.86		
33	-0.061	-0.053	-0.13	-0.25	-0.26	0.16	0.13
34	0.014	0.027	-0.11	-0.071	-0.12	-1.6	0.20
35	-0.15	-0.15	-0.20	-0.33			
36							
37							
38							
39							
40	-0.0041	0.054	-0.55	-0.25		0.16	0.31
41	0.014	0.0020	0.13	-0.069	-0.030	-0.64	-0.60
42	0.17	0.19	-0.039	-0.16	-0.027		
43	0.0097	0.048	-0.35	-0.31	-0.43	-0.23	-0.32
44	-0.016	-0.019	0.0053	0.0036	0.29		
45							
46	-0.26	-0.29	0.0039	0.18			
47							
48	99	97	115	103			
49							
50	0.16	0.18	-0.071	-0.067	-0.016		
51	0.0045	0.024	-0.18	-0.20	0.017	-0.025	-0.039
52	0.19	0.18	0.19	0.50	0.68		
53							
54	-0.11	-0.12	0.063	0.19	0.19		
55	0.12	0.095	0.37	0.098	-0.35	-0.27	-0.13
56							
57	-0.23	-0.22	-0.34	0.068	-1.0	-0.94	-0.84
58							
59	0.20	0.19	0.23	-0.060	-0.023		
60	0.028	0.030	0.016	0.0015	0.021	0.17	0.095
61							
62							
63							
64	0.34	0.41	-0.35	-0.27	0.51		
65	0.029	0.028	0.052	-0.26	-0.31	-1.6	0.33
66							
67							
68							
69	-0.20	-0.13	-0.94	-0.47	0.40		
70							

Laboratories' Z-scores: Analyte solution (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	-0.16	-0.16	-0.25	0.042	0.25		
72	-0.025	-0.025	-0.033	0.12		-1.8	-0.028
73					0.011		
74						-2.2	-0.63
75	-0.056	-0.23	1.6	0.72	0.17	0.17	0.12
76	0.21	0.27	-0.30	-0.48	-0.36		
77	0.056	0.052	0.088	-0.019	-0.48		
78							
79							
80	-0.36	-0.39	-0.022	0.022	0.38		
81	-0.063	-0.067	-0.027	-0.054			
82	-0.089	-0.052	-0.45	-0.22	-0.32		
83	0.30	0.33	0.0022	-0.11	-0.14	-0.17	0.027
84	-0.041	0.15	-1.8	-1.7	-0.92		
85							
86							
87	0.14	0.17	-0.17	-0.029	0.053	-0.35	-0.37
88	-4.5		-0.068	0.044	-0.021	0.086	0.27
89							
90	0.025	0.063	-0.33	-0.20	-0.083		
91							
92	0.19	0.19	0.19	0.42	0.25	0.48	-0.32
93							
94	1.4	1.7	-1.7	-0.67		-1.9	-0.154
95							
96							
97							
98							
99	0.013	0.016	-0.012	-0.0030	0.048		
100	0.30	0.29	0.47	0.12	-0.28	-1.8	-0.019
101	-0.14	-0.15	-0.079	0.075	0.072		
102	-0.049	-0.086	0.30	0.25	-0.059		
103							
104	-0.067	-0.070	-0.040	0.0066	0.055		
105	-0.21	-0.23	-0.10	-0.13	-0.13	0.13	0.18
106	0.030	0.056	-0.21	-0.13	-0.59	-0.14	-0.27
107	-4.5		-0.091	-0.084	-0.023	0.23	0.29
108	0.0085	0.014	-0.051	0.35	-0.11	-0.032	-0.13
109							
110							
111	0.43	0.49	-0.16	-0.44	-0.52		
112							
113	0.13	0.16	-0.16	-0.012	-0.28		
114							
115	0.014	0.035	-0.10	-4.5	-0.12	-2.2	-0.73
116							
117	-0.19	-0.28	0.71	0.37	0.26	0.36	0.47
118							
119	0.12	0.085	0.49	0.079	0.046		
120	-0.10	-0.089	-0.24	0.22	-0.022	-1.5	0.50

Laboratories' Z-scores: Sheep meat, fresh weight

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	6.2	9.5	4.1	0.58	0.29		
2							
3							
4							
5							
6							
7							
8	-1.8	0.27	-3.4	-0.083	0.056	-3.9	1.7
9							
10							
11	11	12	11	-0.20	0.83	1.3	1.3
12							
13	0.17	-0.53	0.67	0.14	0.025		
14							
15	5.1	2.8	7.1	-3.4	-4.1		
16	-0.51	-1.6	0.26	0.39	0.61	-2.5	-0.60
17	-0.47	-0.97	-0.13	0.058	0.051	678	-1.1
18							
19	-0.54	1.3	-1.7	-3.5	-1.9		
20							
21							
22	0.73	1.9	-0.082	-0.11	-0.079		
23	-0.90	-0.99	-0.89	-0.021	1.2	21	1.7
24							
25							
26	17	26	11	5.8	-2.2		
27							
28	-0.098	-1.0	0.55	-0.052	0.66	-2.4	2.9
29							
30							
31							
32	0.30	-1.3	1.5	0.94	0.56		
33	-0.68	-1.1	-0.41	-0.058	0.16	0.42	-0.64
34	-1.1	-1.8	-0.54	-0.58	-0.30	-4.0	0.93
35	-0.047	0.89	-0.73	0.22			
36							
37							
38							
39	0.54	-0.13	1.0	0.40			
40	0.40	1.4	-0.27	-0.094		-4.1	0.75
41	3.0	6.9	0.38	0.77	0.65	-1.9	-0.63
42	0.077	-0.048	0.16	0.28	0.25		
43							
44	8.6	23	-1.4	1.4	2.8		
45							
46	6.4	14	0.87	2.1			
47							
48	2.3	4.1	1.1	0.75			
49							
50	0.26	0.39	0.16	0.31	0.16		
51	-0.54	-0.38	-0.66	-0.37	-0.27	2.0	0.42
52	0.62	-0.84	1.7	-0.17	-0.41		
53							
54	-0.39	0.18	-0.85	0.46	0.80		
55	0.10	-0.30	0.37	0.47	0.12	-3.4	-0.47
56							
57	9.5	11	8.7	-0.30	0.30	-2.9	-0.38
58							
59	-0.90	0.95	-2.3	0.14	-0.13		
60							
61							
62							
63							
64	3.8	9.3	-0.023	-0.44	1.2		
65	-0.046	-1.6	1.1	0.088	-0.043	-1.3	18
66							
67							
68							
69	-1.3	-1.3	-1.4	-1.2	-0.41		
70							

Laboratories' Z-scores: Sheep meat, fresh weight (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	2.2	3.4	1.4	0.34	0.44		
72	31	78	-1.7	0.27		-3.9	1.9
73	30	13			-0.056		
74							
75	2.2	3.4	1.4	0.47	1.5	2.8	-2.0
76	13	32	0.055	7.4	14		
77	-0.34	-0.25	-0.38	-0.73	-0.35		
78							
79							
80	29	33	26	19	24		
81	3.2	7.9	0.011	-0.71			
82	25	54	4.6	1.3	-0.12		
83	-2.0		-0.17	4.0	-0.18		
84	-0.77	2.7	-3.2	-1.9	-1.5		
85							
86							
87	0.68	0.40	0.92	0.051	0.13	7.9	2.2
88	1.1	2.1	0.43	1.4	0.56	-3.0	7.3
89							
90							
91	5.3	12	0.86	1.8	3.7		
92	0.91	1.4	0.63	-0.025	-0.22	0.81	2.0
93							
94							
95							
96							
97							
98							
99							
100							
101							
102	-0.49	-1.1	0.0033	-1.8	-2.0		
103	1.4	3.3	0.18	-0.21	-0.63	3.3	11
104	0.48	1.6	-0.27	-0.44	0.71		
105							
106	-0.55	-0.96	-0.27	-0.34	-0.33	0.77	-0.47
107							
108	1.0	2.5	0.022	0.015	0.25	1.2	14
109							
110							
111	0.87	-0.052	1.6	0.20	0.33		
112							
113							
114							
115	-0.37	-0.87	-0.54	11	10	-4.2	0.021
116							
117	0.45	0.47	0.48	-0.48	-0.51	-0.16	-0.98
118							
119	-0.55	-0.45	-0.62	-0.71	-1.2		
120							

Laboratories' Z-scores: Sheep meat, lipid weight

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	6.2	9.5	4.1	0.59	0.29		
2							
3							
4							
5							
6							
7							
8	-1.7	0.46	-3.3	0.093	0.24	-3.9	1.9
9							
10							
11	11	12	11	-0.30	0.70	1.1	1.2
12							
13	0.15	-0.54	0.65	0.12	0.0069		
14							
15	5.1	2.8	7.1	-3.4	-4.1		
16	-0.11	-1.3	0.73	0.86	1.1	-2.2	-0.21
17	-0.33	-0.85	0.022	0.21	0.20	699	-1.0
18							
19	-1.0	0.57	-2.1	-3.6	-2.3		
20							
21							
22	0.93	2.2	0.093	0.065	0.097		
23	-0.74	-0.82	-0.72	0.18	1.4	22	2.0
24							
25							
26	11	18	6.5	2.9	-2.9		
27							
28	-0.17	-1.1	0.46	-0.13	0.57	-2.4	2.8
29							
30							
31							
32	-0.56	-1.9	0.42	-0.025	-0.34		
33	-0.97	-1.4	-0.71	-0.39	-0.19	0.058	-0.93
34	-1.0	-1.8	-0.52	-0.56	-0.28	-4.0	0.95
35	-1.5	-0.83	-2.0	-1.3			
36							
37							
38							
39	0.91	0.19	1.4	0.76			
40	0.38	1.3	-0.29	-0.11		-4.1	0.73
41	1.9	5.2	-0.36	-0.031	-0.13	-2.4	-1.2
42	0.083	-0.042	0.16	0.29	0.25		
43							
44	7.4	20	-1.8	0.84	2.1		
45							
46	6.0	14	0.66	1.8			
47							
48	1.1	2.6	0.065	-0.19			
49							
50	0.37	0.51	0.27	0.42	0.26		
51	-0.35	-0.19	-0.48	-0.18	-0.070	2.3	0.65
52	0.79	-0.71	1.9	-0.017	-0.27		
53							
54	-0.20	0.39	-0.68	0.68	1.0		
55	0.24	-0.16	0.52	0.63	0.27	-3.3	-0.34
56							
57	7.7	9.2	7.0	-0.88	-0.35	-3.2	-0.95
58							
59	-0.91	0.93	-2.3	0.12	-0.14		
60							
61							
62							
63							
64	3.7	9.1	-0.095	-0.51	1.1		
65	0.19	-1.4	1.4	0.33	0.19	-1.1	19
66							
67							
68							
69	-1.4	-1.4	-1.5	-1.3	-0.50		
70							

Laboratories' Z-scores: Sheep meat, lipid weight (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	2.2	3.4	1.4	0.33	0.44		
72	27	70	-2.0	-0.24		-4.0	1.3
73	32	13			0.20		
74							
75	2.7	3.9	1.9	0.84	2.0	3.3	-1.8
76	12	30	-0.19	6.8	13		
77	0.27	0.37	0.22	-0.17	0.25		
78							
79							
80	27	32	25	18	23		
81	3.2	8.0	0.029	-0.70			
82							
83	-2.0		-0.14	4.1	-0.15		
84	1.2	6.3	-2.3	-0.42	0.14		
85							
86							
87	0.65	0.37	0.88	0.021	0.099	7.8	2.1
88	1.2	2.1	0.44	1.4	0.57	-3.0	7.3
89							
90							
91	6.6	14	1.6	2.7	4.8		
92	0.54	0.96	0.29	-0.33	-0.52	0.45	1.6
93							
94							
95							
96							
97							
98							
99							
100							
101							
102	-1.0	-1.5	-0.58	-2.1	-2.4		
103	1.8	3.8	0.48	0.063	-0.38	3.7	12
104	0.13	1.2	-0.57	-0.73	0.35		
105							
106	-0.011	-0.47	0.31	0.23	0.23	1.5	0.082
107							
108	0.97	2.4	-0.029	-0.036	0.19	1.2	14
109							
110							
111	0.59	-0.29	1.2	-0.054	0.068		
112							
113							
114							
115	-1.8	-2.1	-1.9	6.1	5.7	-4.4	-1.5
116							
117	0.42	0.44	0.45	-0.50	-0.54	-0.18	-1.0
118							
119	0.11	0.23	0.033	-0.072	-0.69		
120							

Laboratories' Z-scores: Cod liver, fresh weight

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	1.9	2.1	1.8	2.5	1.9		
2							
3							
4							
5	0.59	0.64	0.65	-0.40	0.018	-0.50	-0.56
6							
7							
8	-0.052	0.058	-0.064	-0.21	0.34	-0.035	0.030
9							
10							
11	0.26	0.38	0.27	-0.20	0.039	0.088	0.15
12							
13	0.14	-0.71	0.29	0.33	-0.17		
14	2.7	1.9	3.1	-1.4	0.30	2.4	2.5
15	0.50	0.19	0.53	0.90	0.66		
16							
17	-0.39	-0.25	-0.47	0.39	-0.21	4.4	-0.60
18	0.58	-0.60	0.81	0.68	1.1	1.8	1.9
19	-2.5	-2.8	-2.5	-2.3	-2.4		
20	0.12	0.16	0.14	-0.35	6.2	-0.63	-0.57
21							
22	-0.090	0.064	-0.13	0.11	-0.63		
23	-0.77	-0.42	-0.90	0.20	0.18	0.46	-0.27
24							
25	2.6	18	-0.37	0.0054	0.79		
26	0.082	1.0	-0.15	0.75	-3.3		
27							
28	1.0	0.53	1.2	0.17	1.4	0.18	0.25
29							
30							
31	-0.10	0.78	-0.29	0.13			
32	-2.0	-2.5	-1.9	-2.3	-2.1		
33	0.20	-0.28	0.30	0.046	-0.27	0.16	0.15
34							
35	0.67	-0.23	0.81	1.3			
36							
37							
38							
39	-0.090	-0.39	-0.020	-0.25	-0.26		
40	0.017	-0.18	0.018	0.59		0.41	0.48
41	-0.19	-0.25	-0.25	0.86	0.0018	-0.51	-0.55
42	0.21	1.1	0.086	-0.52	-0.23		
43	-0.096	-0.79	0.016	0.30	0.018	-0.18	-0.14
44	-1.1	0.24	-1.5	0.45	0.88		
45							
46	-0.89	0.079	-1.2	0.42			
47							
48	0.53	0.49	0.38	3.0			
49							
50	0.24	1.1	0.12	-0.54	-0.16		
51	-0.71	0.075	-0.87	-0.58	-0.74	0.040	-0.066
52	0.33	-0.38	0.49	-0.035	-0.20		
53							
54	0.66	0.67	0.67	0.47	0.54		
55	0.33	1.1	0.15	0.58	0.33	0.68	0.75
56							
57	-0.028	0.37	-0.13	0.30	1.2	0.35	0.37
58							
59	-2.4	0.30	-3.0	-0.039	-0.16		
60	0.39	1.1	0.22	0.97	1.1		
61							
62							
63							
64	-0.39	-0.30	-0.36	-1.1	0.58		
65	1.0	0.18	1.3	-0.21	-0.46	0.32	0.39
66							
67							
68							
69							
70							

Laboratories' Z-scores: Cod liver, fresh weight (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	-0.36	0.18	-0.47	-0.30	-0.33		
72							
73	1.0	16			1.31		
74							
75	0.62	0.32	0.73	-0.036	-0.061	1.0	0.067
76							
77	-1.0	-0.96	-1.0	-0.40	0.024		
78							
79							
80	0.24	-0.060	0.35	-0.43	0.69		
81	-0.29	-0.21	-0.32	-0.087			
82							
83	-0.013	0.43	-0.10	0.026	-0.27	0.22	0.21
84	-2.1	-1.1	-2.3	-2.3	-1.8		
85							
86							
87	0.18	-0.24	0.25	0.37	-0.097	1.7	0.065
88	0.016	0.19	-0.023	0.10	0.12	-0.038	-0.25
89							
90	-0.18	0.17	-0.25	-0.13	0.068		
91							
92	0.10	-0.049	0.12	0.27	0.71	1.6	0.46
93							
94							
95							
96							
97							
98							
99							
100							
101	0.0042	-1.6	0.25	1.1	2.2		
102	-0.36	-0.53	-0.34	-0.17	0.48		
103	-0.68	-0.76	-0.70	-0.095	-0.035	0.84	0.41
104							
105	-0.21	-0.13	-0.23	-0.29	-0.10	0.46	0.53
106	0.11	-0.082	0.15	0.18	-0.31	0.25	0.27
107							
108	0.066	-0.27	0.10	0.52	0.55	-0.036	-0.011
109							
110							
111							
112							
113							
114							
115	-0.19	-0.21	0.051	-3.9	-3.9	-0.75	-0.70
116							
117	-0.063	-0.14	-0.030	-0.31	-0.64	-0.59	-0.67
118							
119							
120	0.29	-0.42	0.34	1.5	0.22	-0.38	-0.32

Laboratories' Z-scores: Cod liver, lipid weight

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	1.0	1.2	0.93	1.5	1.0		
2							
3							
4							
5	0.67	0.72	0.73	-0.33	0.086	-0.44	-0.50
6							
7							
8	-0.023	0.088	-0.034	-0.18	0.37	-0.0051	0.060
9							
10							
11	0.16	0.26	0.16	-0.30	-0.065	-0.017	0.049
12							
13	0.046	-0.78	0.20	0.24	-0.26		
14	2.4	1.6	2.8	-1.5	0.12	2.1	2.2
15	-0.57	-0.82	-0.54	-0.24	-0.44		
16							
17	-0.29	-0.15	-0.38	0.51	-0.10	4.6	-0.50
18							
19	-2.8	-3.1	-2.8	-2.6	-2.7		
20	0.036	0.082	0.057	-0.42	6.0	-0.70	-0.64
21							
22	-0.14	0.0079	-0.19	0.058	-0.68		
23	-0.70	-0.34	-0.83	0.28	0.27	0.55	-0.19
24							
25	2.3	17	-0.56	-0.21	0.55		
26	-0.34	0.54	-0.55	0.28	-3.4		
27							
28	1.1	0.61	1.2	0.25	1.4	0.26	0.32
29							
30							
31	-0.43	0.39	-0.61	-0.21			
32	-0.76	-1.5	-0.58	-1.1	-0.92		
33	0.36	-0.13	0.47	0.20	-0.12	0.32	0.31
34							
35	44	36	45	49			
36							
37							
38							
39	0.14	-0.17	0.21	-0.027	-0.034		
40	0.34	0.13	0.34	0.94		0.75	0.83
41	-0.13	-0.19	-0.19	0.94	0.070	-0.45	-0.49
42	0.62	1.6	0.49	-0.16	0.14		
43	-0.43	-1.1	-0.33	-0.065	-0.32	-0.51	-0.47
44	-1.5	-0.29	-1.9	-0.11	0.27		
45							
46	-0.94	0.019	-1.2	0.36			
47							
48	0.069	0.028	-0.071	2.3			
49							
50	0.57	1.5	0.44	-0.26	0.15		
51	-0.47	0.35	-0.64	-0.34	-0.51	0.32	0.21
52	0.53	-0.21	0.70	0.15	-0.016		
53							
54	-0.99	-0.99	-0.98	-1.1	-1.1		
55	0.47	1.3	0.29	0.73	0.47	0.83	0.90
56							
57	16	18	16	17	21	18	18
58							
59	-2.4	0.25	-3.0	-0.083	-0.21		
60	-0.89	-0.37	-1.0	-0.45	-0.33		
61							
62							
63							
64	1.2	1.3	1.2	0.21	2.5		
65	1.9	0.91	2.2	0.46	0.17	1.1	1.1
66							
67							
68							
69							
70							

Laboratories' Z-scores: Cod liver, lipid weight (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	-0.81	-0.32	-0.91	-0.75	-0.79		
72							
73	1.0	16			1.3		
74							
75	0.80	0.48	0.91	0.12	0.090	1.2	0.22
76							
77	-1.0	-0.96	-1.0	-0.40	0.024		
78							
79							
80	0.37	0.059	0.48	-0.32	0.83		
81	-0.41	-0.33	-0.44	-0.21			
82							
83	0.38	0.86	0.28	0.42	0.10	0.64	0.62
84	-1.7	-0.54	-2.0	-2.0	-1.4		
85							
86							
87	-0.39	-0.76	-0.33	-0.22	-0.64	0.92	-0.49
88	-0.11	0.051	-0.15	-0.029	-0.017	-0.17	-0.37
89							
90	-0.13	0.22	-0.20	-0.078	0.12		
91							
92	-0.50	-0.64	-0.48	-0.36	0.033	0.85	-0.19
93							
94							
95							
96							
97							
98							
99							
100							
101	0.13	-1.5	0.39	1.3	2.4		
102	0.16	-0.025	0.18	0.37	1.1		
103	-0.28	-0.37	-0.30	0.36	0.43	1.4	0.92
104							
105	-0.56	-0.48	-0.57	-0.63	-0.46	0.064	0.13
106	0.057	-0.14	0.092	0.12	-0.36	0.19	0.21
107							
108	0.0017	-0.33	0.038	0.45	0.48	-0.099	-0.074
109							
110							
111							
112							
113							
114							
115	-1.3	-1.4	-1.2	-4.1	-4.198	-1.8	-1.7
116							
117	-0.60	-0.67	-0.57	-0.82	-1.1	-1.1	-1.1
118							
119							
120	0.90	0.12	0.97	2.3	0.83	0.16	0.23

Laboratories' Z-scores: Herring, fresh weight

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	0.19	0.32	0.077	0.055	-0.24		
2							
3							
4							
5	0.72	0.62	0.86	-0.017	0.57	-0.052	-0.035
6							
7							
8	0.079	0.17	0.030	-0.53	0.083	-0.17	-0.010
9							
10							
11	1.7	0.27	3.1	-0.14	0.19	-0.063	0.10
12							
13	-0.16	-0.62	0.24	0.17	-0.065		
14	2.5	0.78	4.3	0.59	1.9	2.9	3.2
15	0.025	-0.12	0.15	0.18	0.11		
16	0.096	-0.20	0.34	0.68	0.71	0.16	0.22
17	-0.50	-0.54	-0.52	0.34	-0.19	15	-0.17
18	-0.029	-0.40	0.29	0.45	0.96	0.20	0.37
19	-2.9	-2.8	-3.1	-2.8	-2.5		
20	0.080	0.13	0.022	0.23	5.6	0.29	0.47
21							
22	-1.0	-1.1	-0.90	-1.2	-0.93		
23	-0.46	-0.12	-0.83	0.23	0.50	1.2	-0.341
24							
25	0.12	-0.019	0.27	-0.24	1.6		
26	0.60	1.5	-0.33	1.0	-3.1		
27							
28	1.2	0.36	2.1	0.56	1.5	0.53	0.68
29							
30	0.047	-0.11	0.22	-0.35			
31	-0.32	-0.19	-0.44	-0.30		7.2	7.6
32	0.22	-0.11	0.43	1.7	0.43		
33	0.27	0.13	0.43	-0.17	-0.16	0.36	0.12
34	-0.22	-0.93	0.44	-0.094	0.20	-0.13	0.037
35	0.23	-0.34	0.71	1.4			
36							
37							
38							
39	0.15	-0.057	0.35	-0.086			
40	-0.82	-0.85	-0.82	-0.43		-0.73	-0.59
41	0.074	0.19	-0.089	0.85	0.12	-0.097	-0.29
42	0.51	1.1	-0.047	-0.14	-0.18		
43	-1.9	0.22	-4.0	-0.41	-0.37	0.37	0.39
44	-0.67	0.093	-1.4	-0.23	-0.17		
45							
46	-0.31	0.31	-0.97	0.83			
47							
48	-0.061	0.29	-0.39	-0.092			
49							
50	0.54	1.1	0.053	-0.19	-0.17		
51	-0.14	0.078	-0.34	-0.26	-0.15	0.59	0.13
52	0.23	-0.29	0.75	-0.079	-0.13		
53							
54	-0.93	-0.98	-0.86	-1.2	-1.1		
55	0.32	0.27	0.33	0.85	0.70	-0.0089	0.11
56							
57	-0.24	-0.31	-0.22	0.56	1.1	-0.85	-0.84
58							
59	-1.4	-0.0042	-2.8	-0.014	0.32		
60							
61							
62							
63							
64	0.013	0.012	0.043	-0.45	0.53		
65	0.72	0.32	1.1	0.12	-0.0061	1.1	1.3
66							
67							
68							
69	-1.0	-0.15	-1.9	-0.69	-0.043		
70							

Laboratories' Z-scores: Herring, fresh weight (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	0.18	0.43	-0.047	0.090	0.10		
72	0.095	-0.75	0.84	1.0		2.0	2.2
73	3.8	7.9			-0.52		
74	0.073	-0.31	0.41	0.43	0.24	-0.43	-0.27
75	0.28	0.34	0.25	-0.22	-0.018	2.1	0.0063
76							
77							
78							
79							
80	-0.15	-0.56	0.25	-0.39	0.73		
81	-0.11	0.24	-0.44	-0.060			
82	1.1	2.6	-0.18	1.1	0.69		
83	-0.18	0.13	-0.47	-0.33	-0.44	-0.091	-0.17
84	-2.0	-1.5	-2.6	-2.4	-1.8		
85							
86							
87	0.39	0.26	0.52	0.33	-0.0076	0.61	-0.67
88	0.19	0.40	-0.0063	0.085	0.13	0.38	-0.13
89							
90	-0.37	-0.14	-0.61	-0.11	-1.0		
91	0.065	0.027	-0.0085	1.8	0.95		
92	-0.37	-0.18	-0.58	0.13	0.60	0.34	-0.096
93							
94	-0.49	-0.30	-0.70	-0.040		0.67	0.86
95							
96							
97							
98							
99	0.60	1.1	0.15	0.62	0.50		
100	0.048	0.30	-0.29	1.6	2.5	3.4	3.6
101							
102	0.12	0.028	0.20	0.045	0.54		
103	-0.68	-0.75	-0.61	-0.69	-1.1	0.35	0.52
104							
105	-0.22	0.22	-0.62	-0.51	-0.24	0.075	0.25
106	0.20	0.048	0.37	-0.24	-0.38	-0.11	-0.073
107	0.33	0.77	-0.12	0.83	0.57	3.1	0.82
108	0.19	0.33	0.042	0.43	1.0	0.11	0.10
109							
110							
111	0.12	0.082	0.15	0.34	0.36		
112							
113	0.19	0.12	0.22	0.64	1.8		
114							
115	-3.2	-3.3	-3.2	-3.0	-3.2	-3.5	-3.4
116							
117	0.0096	-0.17	0.19	-0.25	-0.32	-0.35	-0.55
118							
119							
120	0.21	-0.046	0.41	0.94	0.25	4.0	4.3

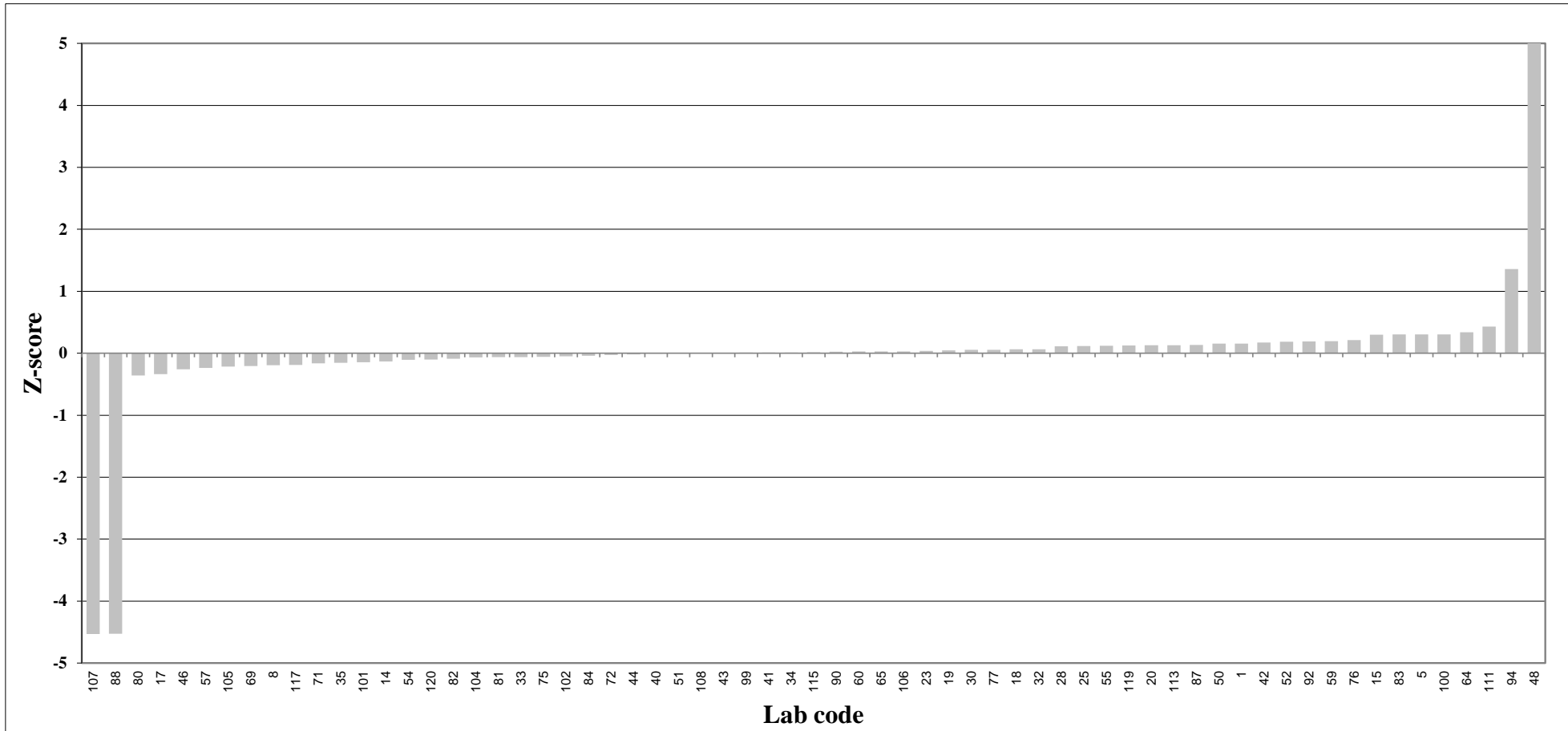
Laboratories' Z-scores: Herring, lipid weight

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
1	0.23	0.36	0.11	0.088	-0.21		
2							
3							
4							
5	0.69	0.59	0.82	-0.045	0.54	-0.079	-0.062
6							
7							
8	0.29	0.39	0.24	-0.34	0.30	0.032	0.20
9							
10							
11	1.6	0.22	3.0	-0.19	0.13	-0.11	0.053
12							
13	-0.14	-0.60	0.26	0.19	-0.046		
14	2.1	0.43	3.8	0.26	1.4	2.4	2.7
15	-0.078	-0.22	0.042	0.08	0.0040		
16	0.034	-0.25	0.27	0.61	0.65	0.098	0.16
17	-0.34	-0.38	-0.36	0.54	-0.019	15	0.0061
18							
19	-3.2	-3.1	-3.3	-3.0	-2.8		
20	0.14	0.19	0.079	0.29	5.7	0.35	0.53
21							
22	0.029	-0.12	0.19	-0.20	0.16		
23	-0.76	-0.44	-1.1	-0.11	0.14	0.84	-0.65
24							
25	-0.73	-0.85	-0.61	-1.0	0.50		
26	-1.0	-0.37	-1.7	-0.73	-3.7		
27							
28	1.7	0.79	2.7	1.0	2.0	0.97	1.1
29							
30	-0.12	-0.27	0.051	-0.50			
31	-0.57	-0.46	-0.69	-0.56		6.5	6.9
32	-0.61	-0.88	-0.42	0.63	-0.42		
33	0.33	0.19	0.49	-0.11	-0.11	0.42	0.19
34	-0.44	-1.1	0.18	-0.32	-0.037	-0.35	-0.20
35	7.7	6.3	8.8	10			
36							
37							
38							
39	0.072	-0.13	0.28	-0.16			
40	-0.78	-0.80	-0.77	-0.38		-0.69	-0.55
41	-0.18	-0.061	-0.33	0.57	-0.13	-0.34	-0.52
42	0.63	1.3	0.065	-0.034	-0.074		
43	-1.5	0.89	-3.8	0.18	0.23	1.1	1.1
44	-1.1	-0.42	-1.8	-0.71	-0.66		
45							
46	-0.15	0.50	-0.83	1.0			
47							
48	1.4	1.9	0.99	1.4			
49							
50	0.70	1.3	0.20	-0.047	-0.029		
51	-0.14	0.078	-0.34	-0.26	-0.15	0.59	0.13
52	0.56	0.0046	1.1	0.23	0.18		
53							
54	0.43	0.35	0.52	0.045	0.18		
55	0.24	0.19	0.25	0.76	0.61	-0.090	0.029
56							
57	0.23	0.16	0.25	1.1	1.7	-0.45	-0.43
58							
59	-1.5	-0.077	-2.8	-0.087	0.25		
60							
61							
62							
63							
64	-0.14	-0.14	-0.11	-0.58	0.36		
65	0.58	0.19	0.98	-0.0041	-0.13	0.95	1.1
66							
67							
68							
69	-0.59	0.41	-1.6	-0.18	0.53		
70							

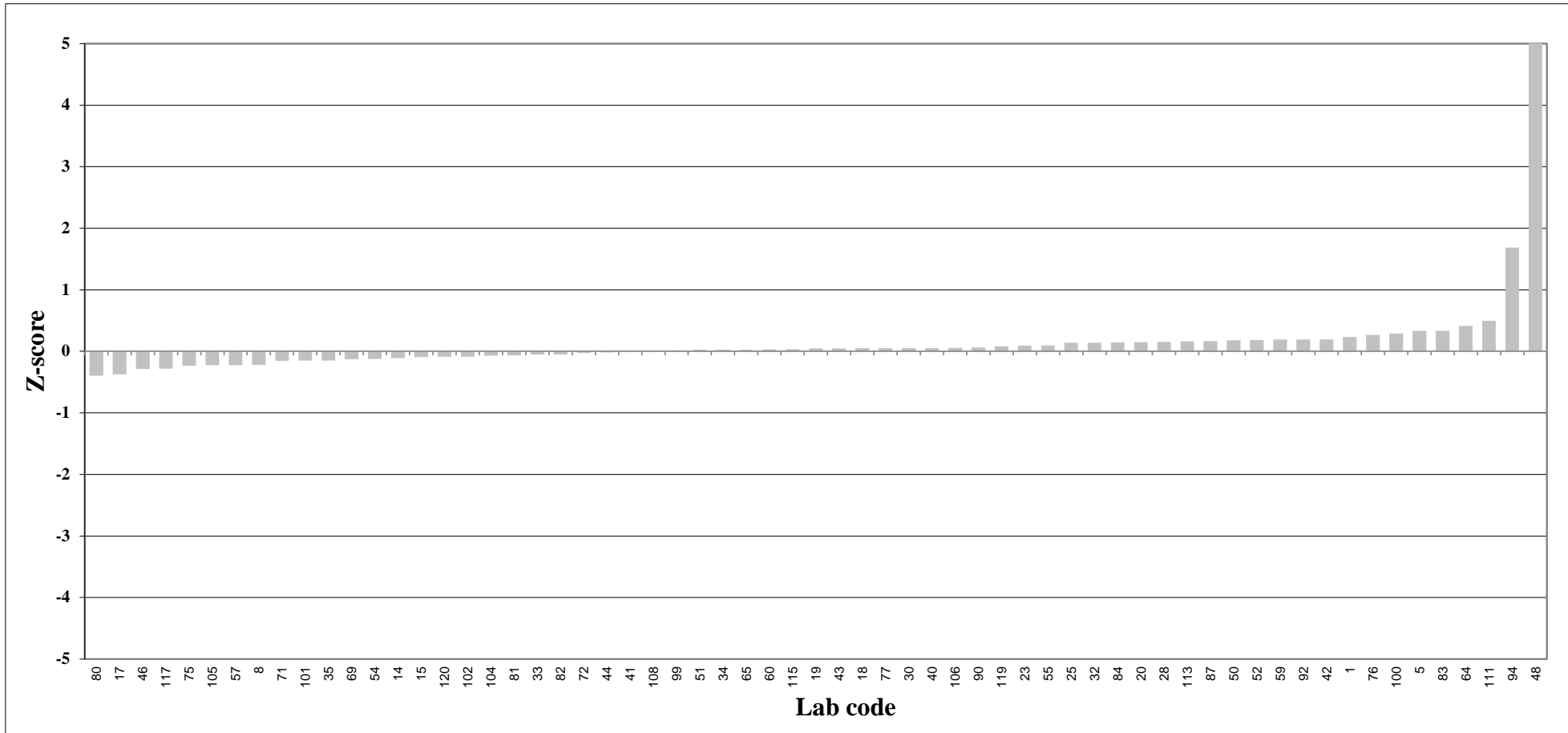
Laboratories' Z-scores: Herring, lipid weight (continued)

LAB CODE	Sum TE Total TEQ	Sum TE PCDD/PCDF	Sum TE non-ortho PCB	Sum TE mono-ortho PCB	Sum Indicator PCB	Sum PBDE Sum with 209	Sum PBDE Sum without 209
71	0.091	0.33	-0.13	0.0011	0.011		
72	0.71	-0.24	1.5	1.8		2.8	3.1
73	3.4	7.4			-0.71		
74							
75	0.67	0.74	0.64	0.14	0.35	2.6	0.38
76							
77							
78							
79							
80	-0.34	-0.73	0.049	-0.57	0.51		
81	-0.10	0.25	-0.44	-0.057			
82							
83	0.21	0.55	-0.099	0.053	-0.060	0.31	0.22
84	0.042	1.0	-0.83	-0.60	0.48		
85							
86							
87	0.074	-0.052	0.20	0.014	-0.30	0.28	-0.92
88	0.24	0.45	0.043	0.14	0.18	0.43	-0.080
89							
90	-0.23	0.0067	-0.48	0.036	-0.88		
91	-1.3	-1.4	-1.4	-0.053	-0.68		
92	0.79	1.0	0.53	1.4	2.0	1.7	1.1
93							
94	-0.24	-0.039	-0.46	0.24		0.98	1.2
95							
96							
97							
98							
99	4.6	5.4	3.8	4.6	4.4		
100	-0.48	-0.25	-0.78	0.91	1.7	2.5	2.7
101							
102	0.30	0.21	0.39	0.22	0.73		
103	0.054	-0.030	0.13	0.043	-0.49	1.3	1.5
104							
105	-0.65	-0.25	-1.0	-0.91	-0.67	-0.38	-0.23
106	-0.17	-0.31	-0.017	-0.58	-0.71	-0.46	-0.42
107	0.22	0.65	-0.22	0.71	0.46	3.0	0.70
108	0.23	0.37	0.083	0.47	1.1	0.15	0.14
109							
110							
111	-0.45	-0.48	-0.42	-0.26	-0.24		
112							
113	0.052	-0.011	0.084	0.49	1.6		
114							
115	-3.8	-3.8	-3.8	-3.6	-3.8	-4.0	-3.9
116							
117	-0.18	-0.35	-0.0011	-0.43	-0.50	-0.52	-0.72
118							
119							
120	0.65	0.37	0.87	1.4	0.69	4.7	5.1

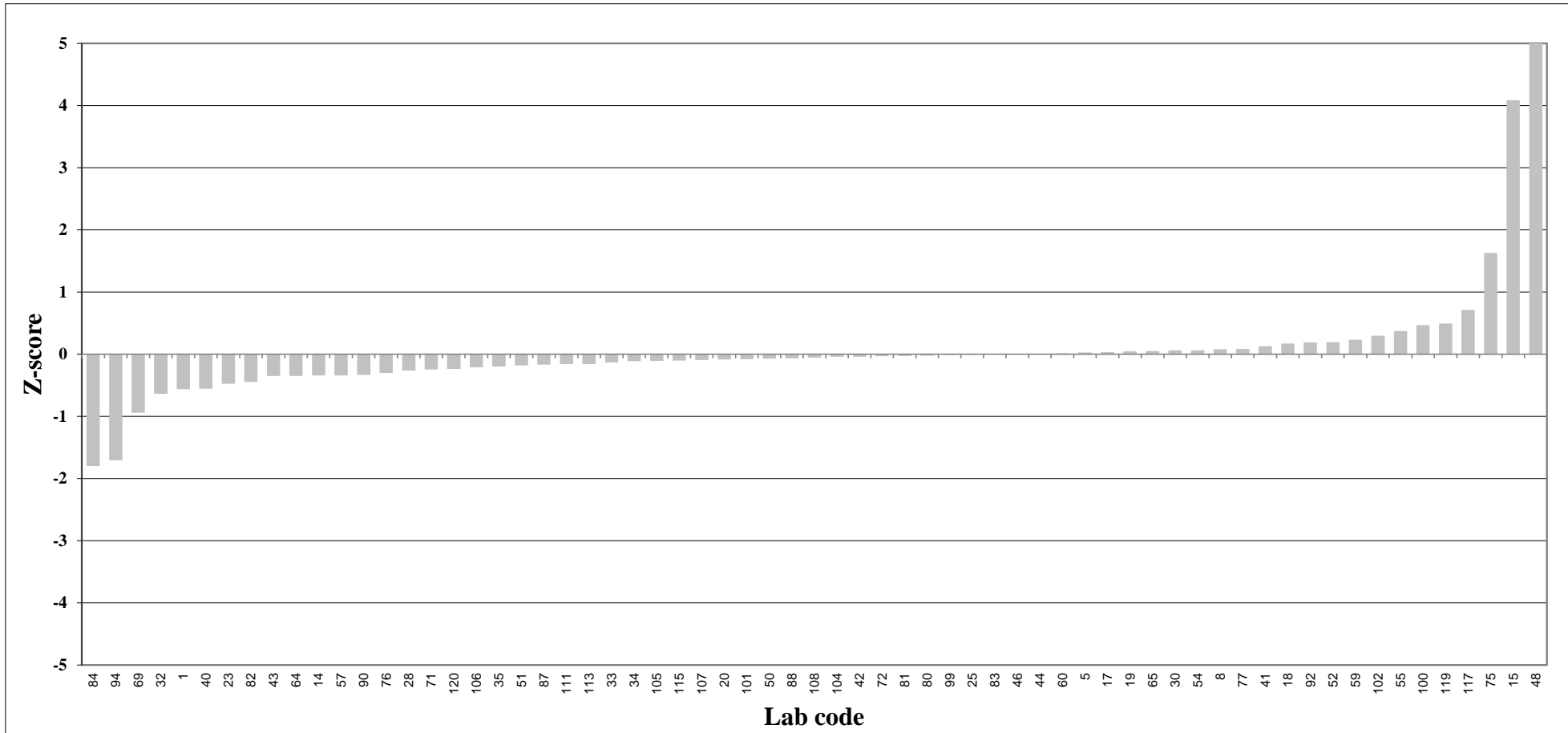
Z-score analyte solution; total TEQ



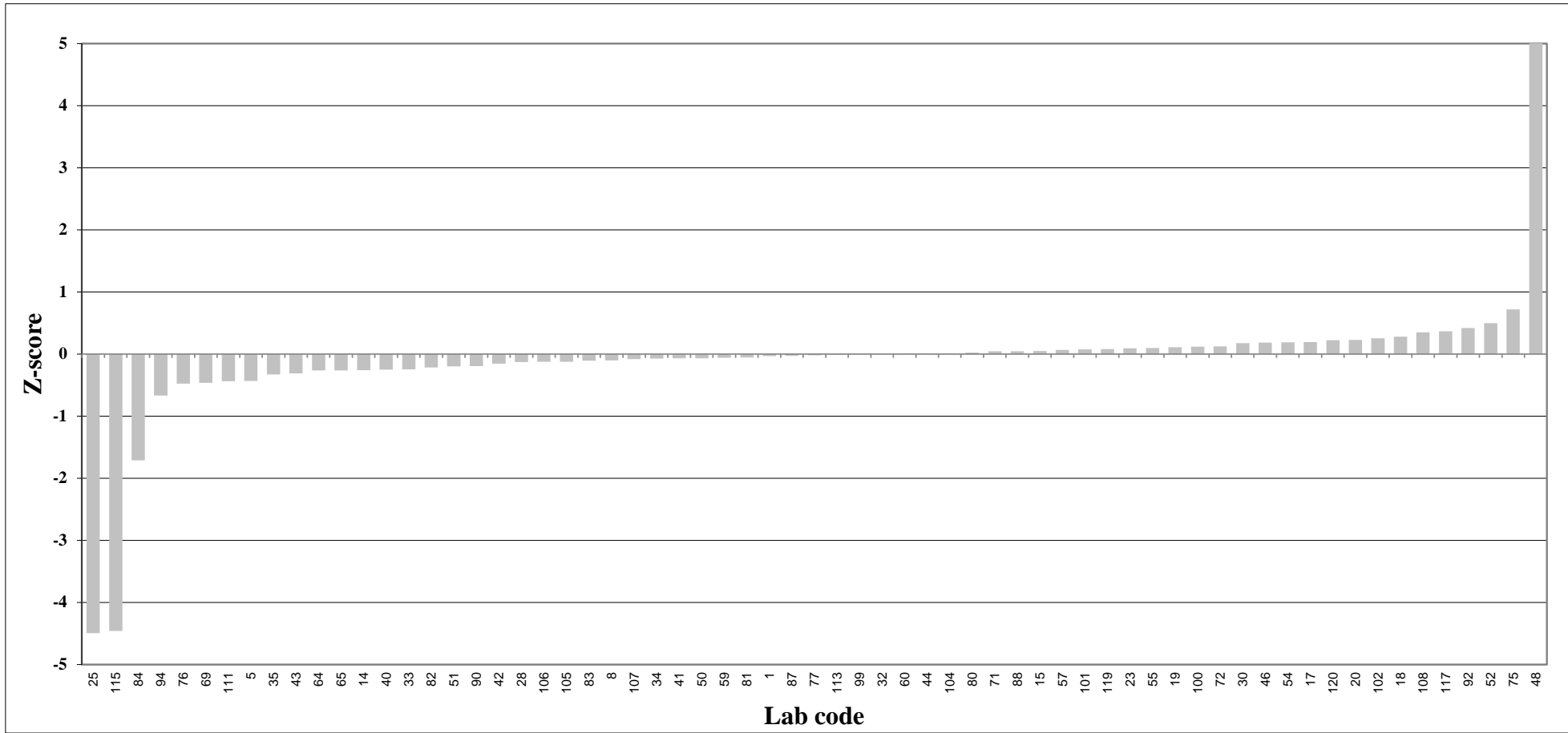
Z-score analyte solution; PCDD/PCDF TEQ



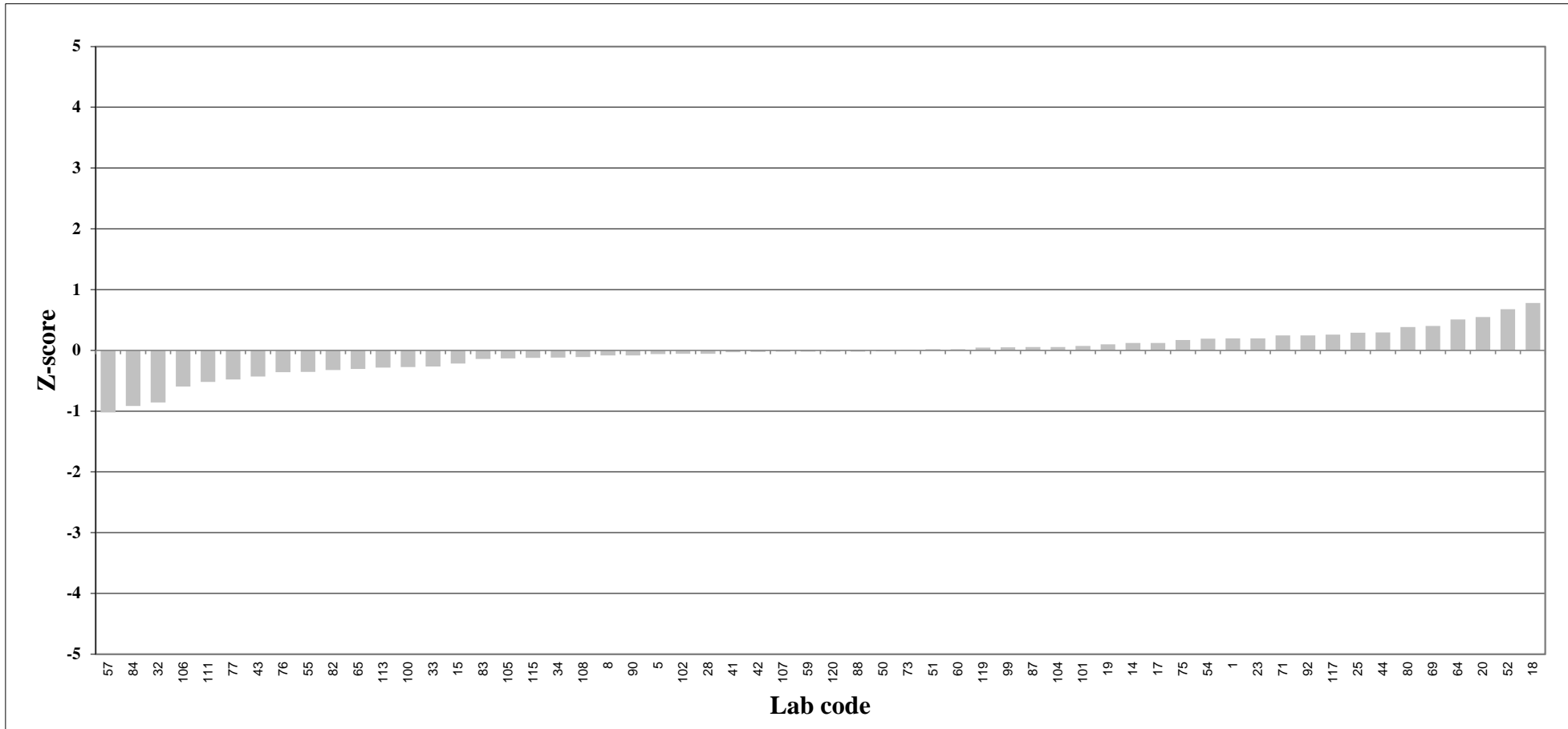
Z-score analyte solution; non-ortho PCB TEQ



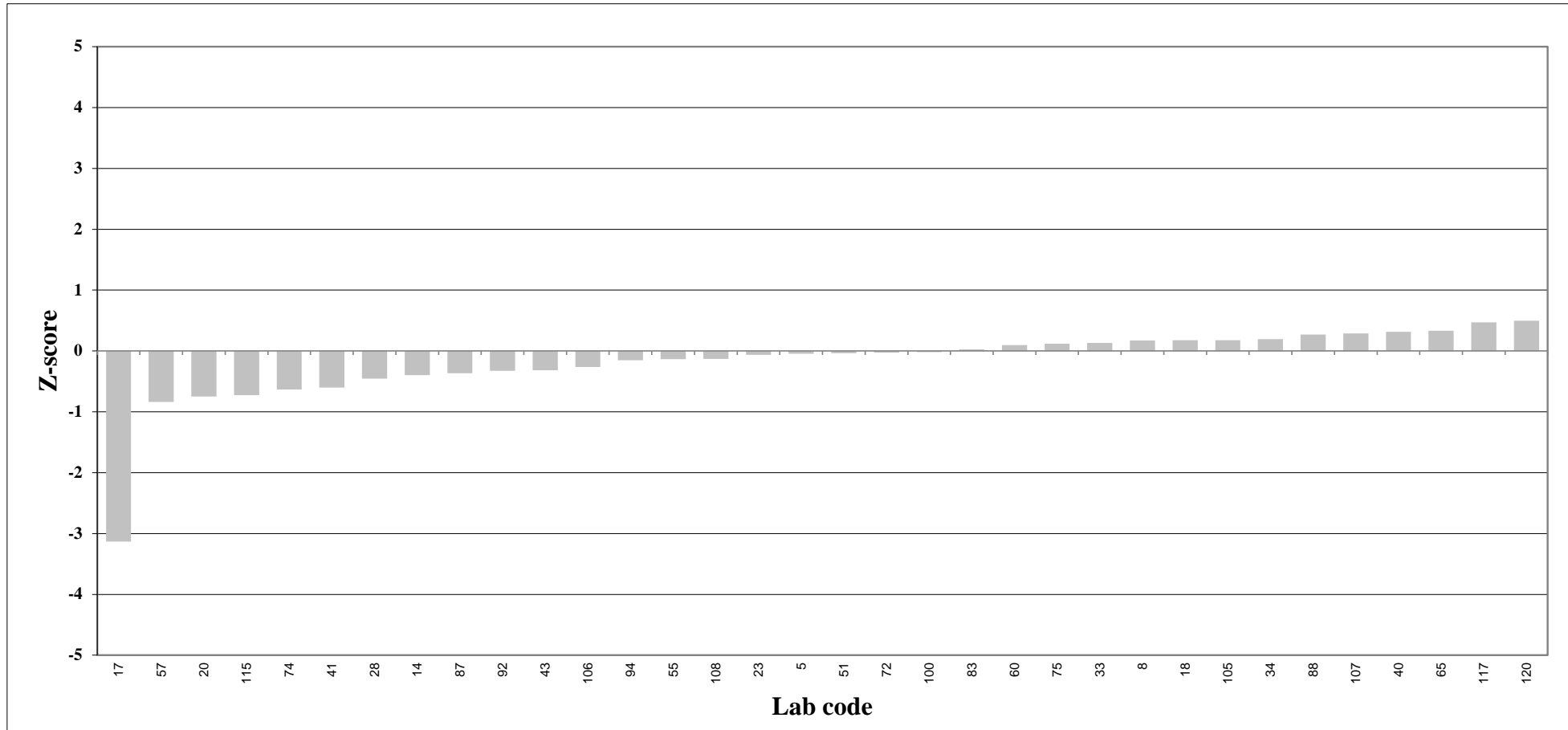
Z-score analyte solution; mono-ortho PCB TEQ



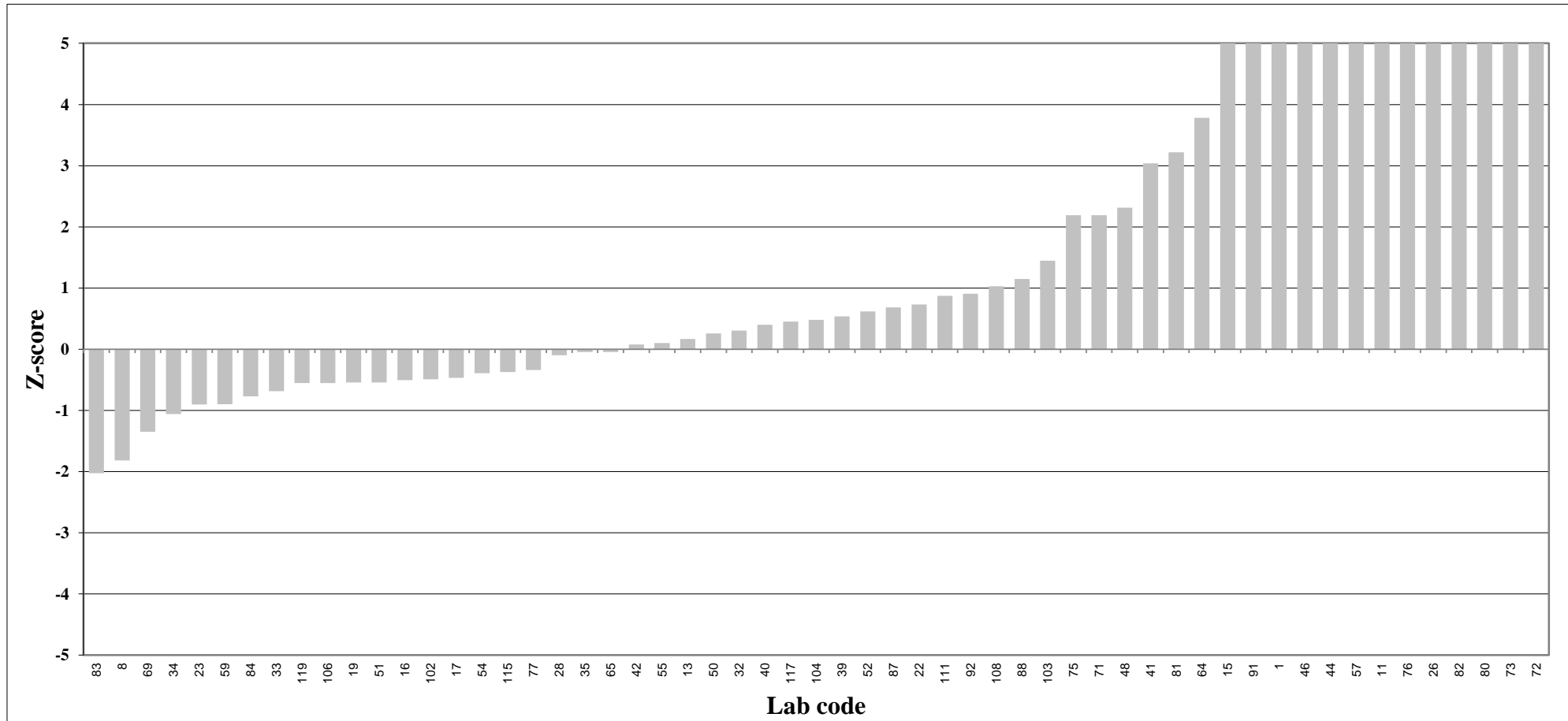
Z-score analyte solution; sum indicator PCB



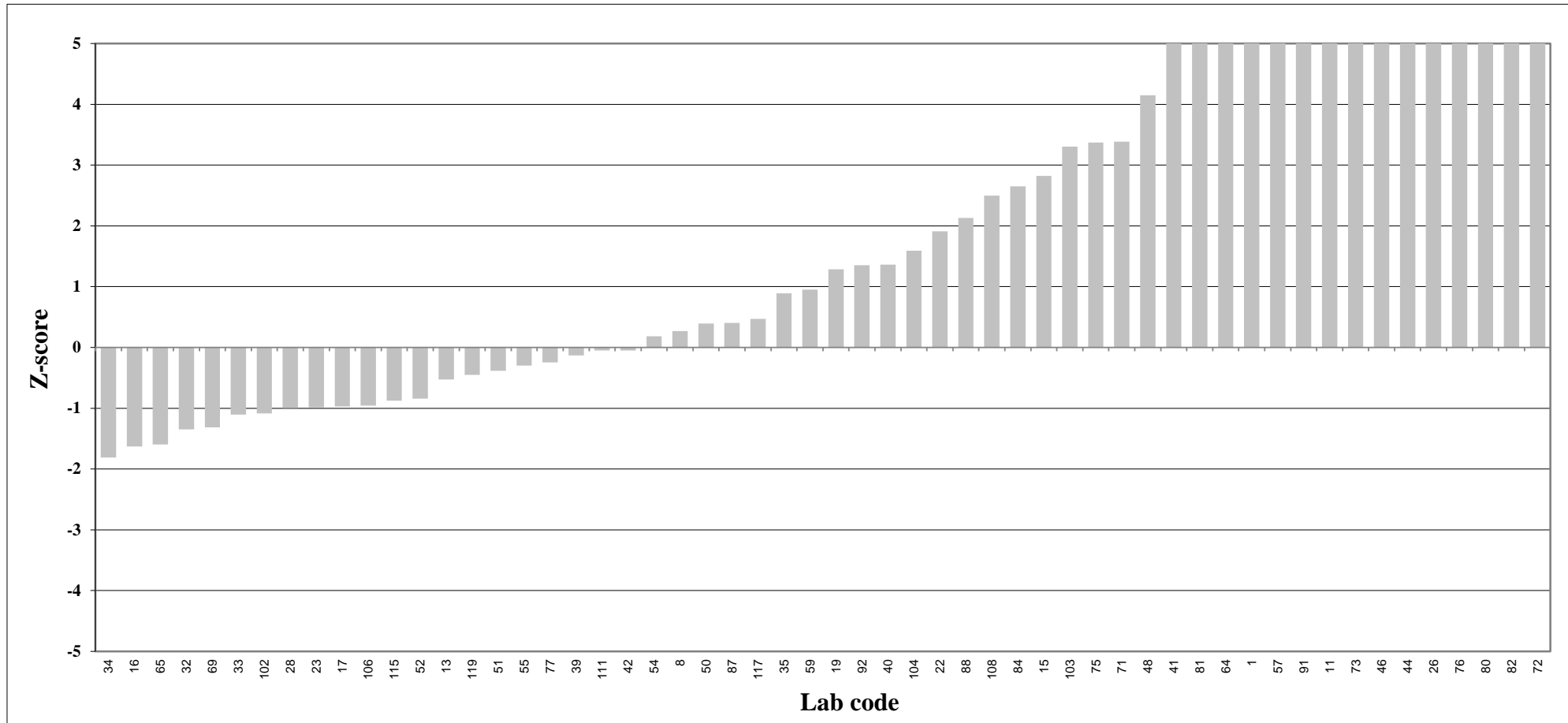
Z-score analyte solution; sum PBDE without BDE-209



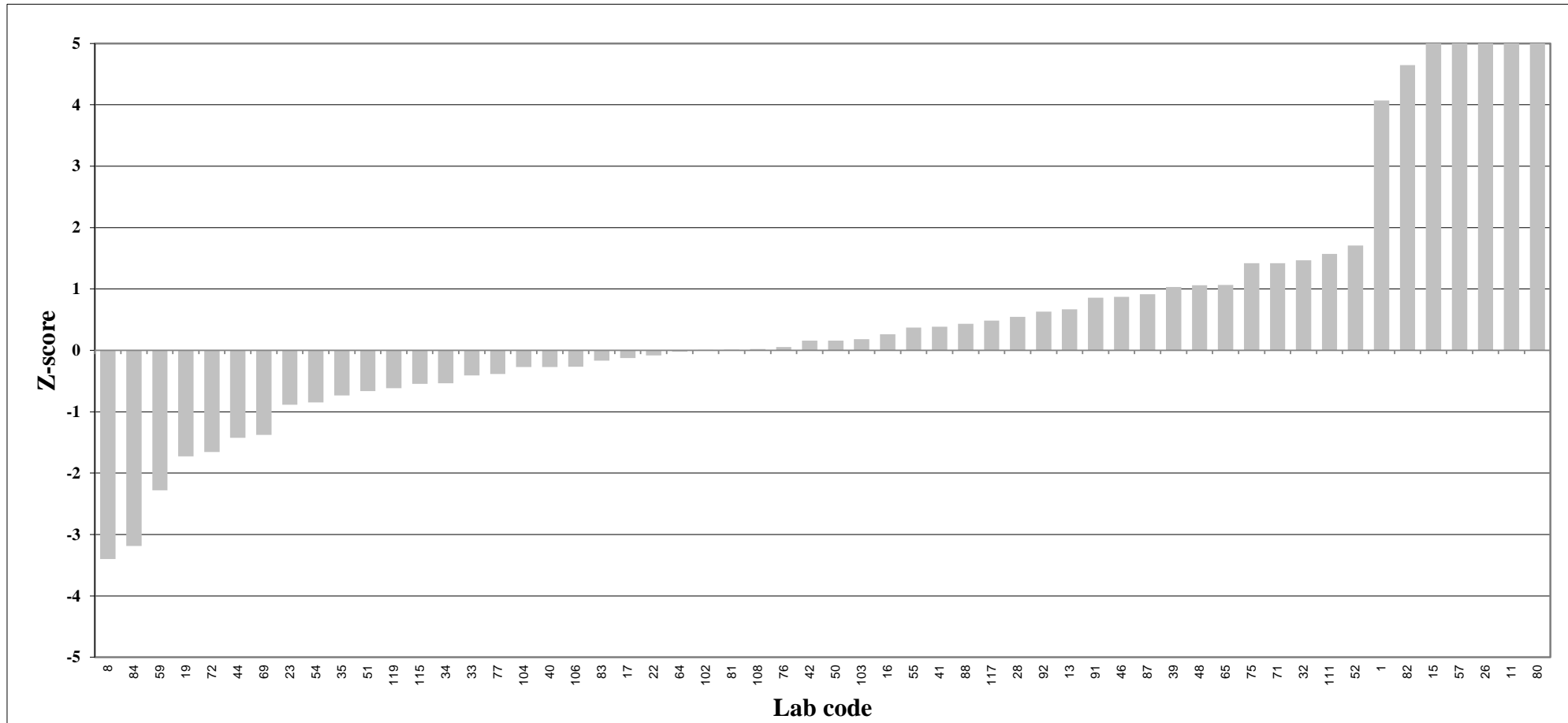
Z-score Sheep meat, fresh weight; total TEQ



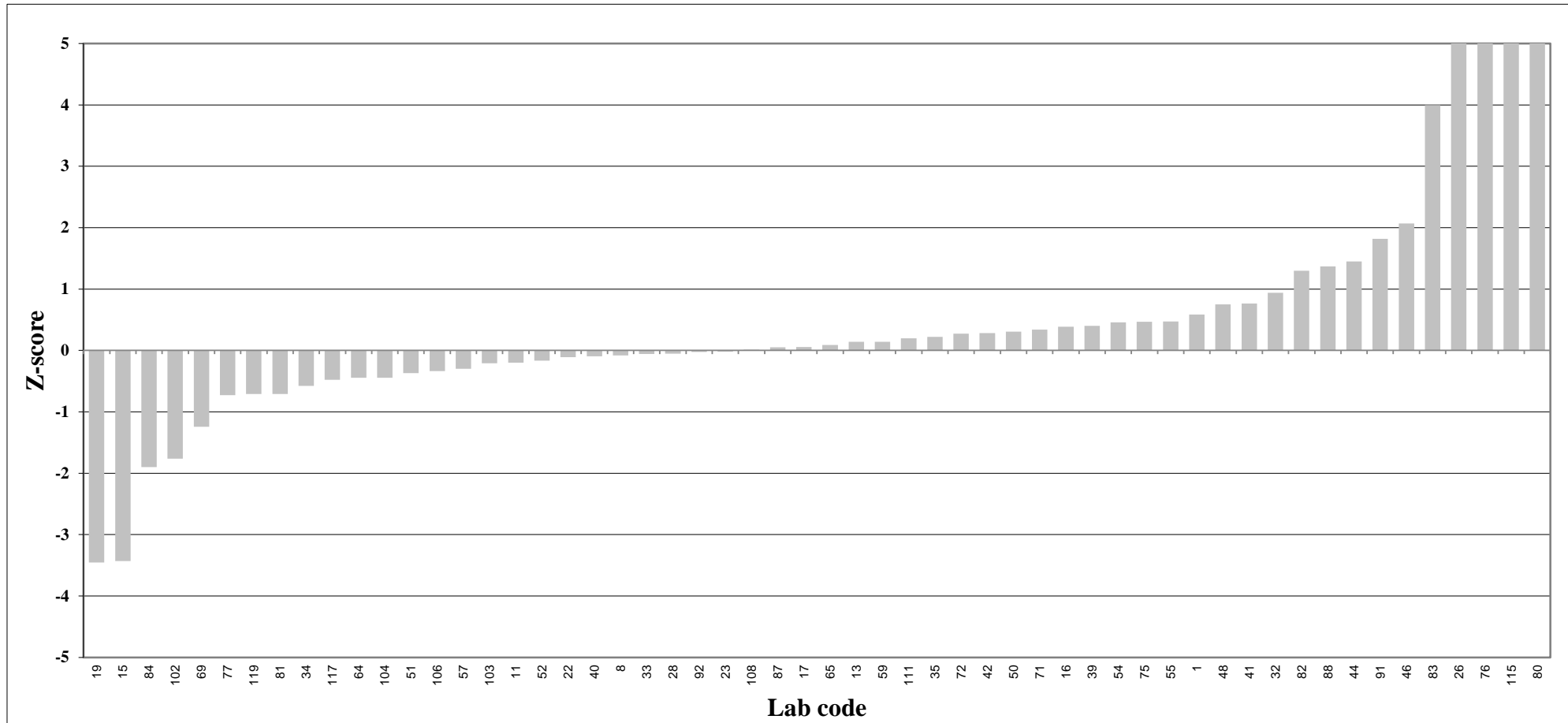
Z-score Sheep meat, fresh weight; PCDD/PCDF TEQ



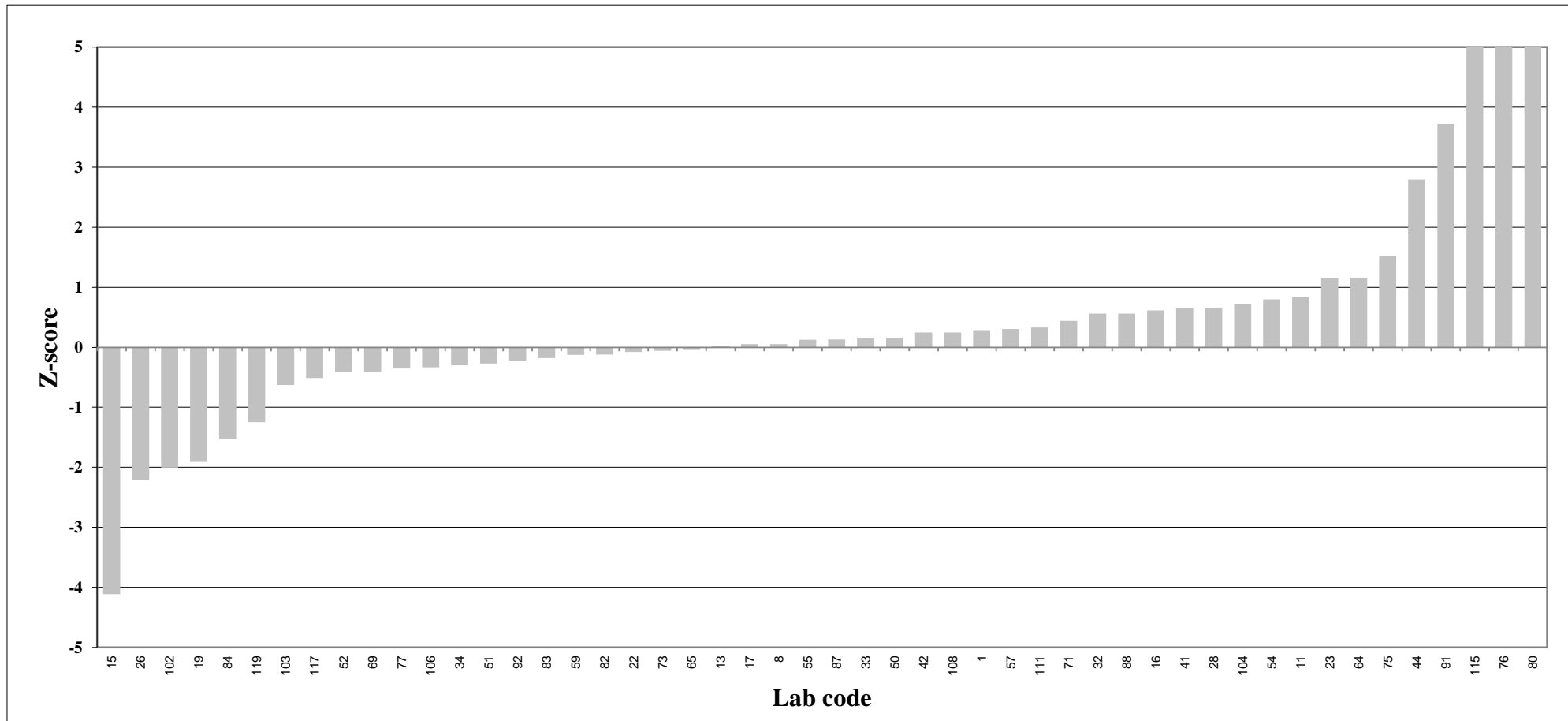
Z-score Sheep meat, fresh weight; non-ortho PCB TEQ



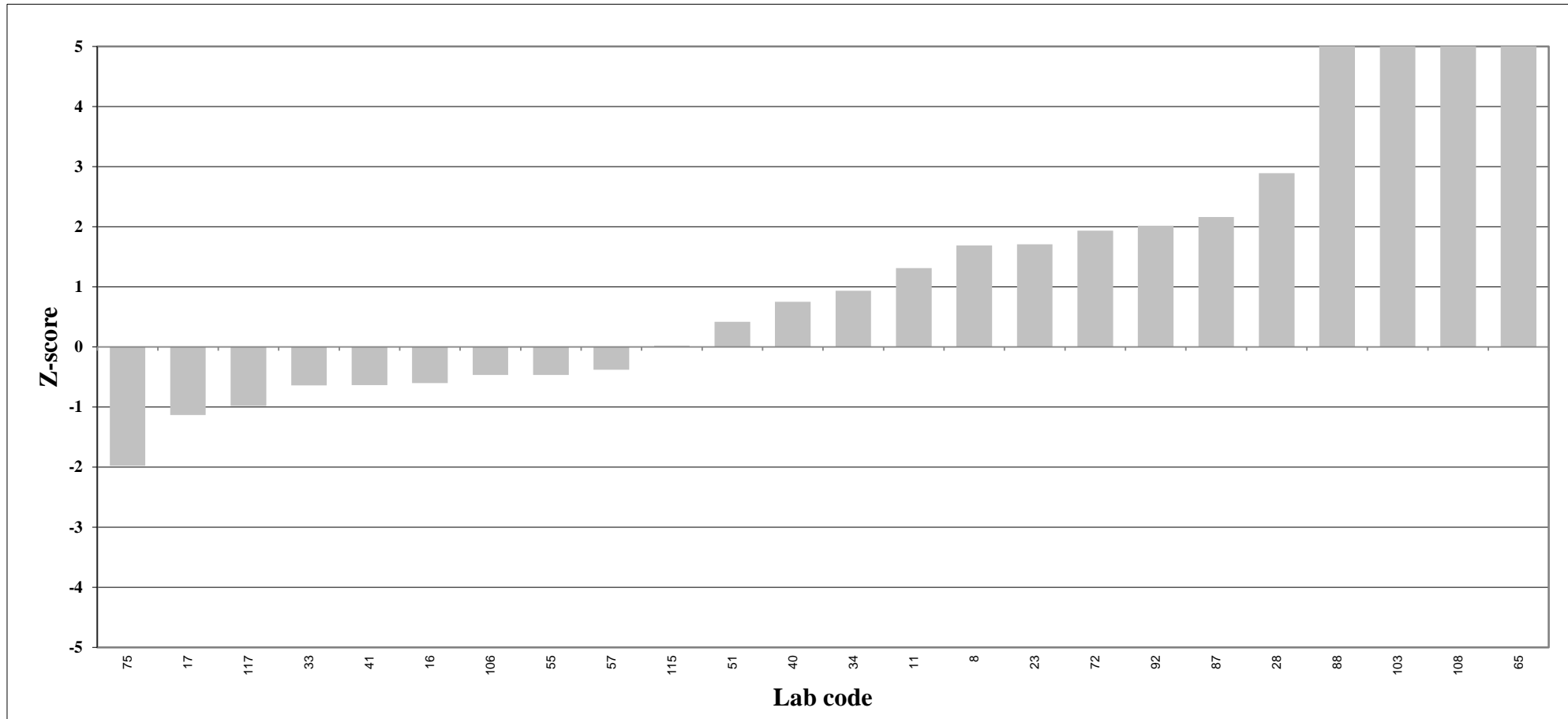
Z-score Sheep meat, fresh weight; mono-ortho PCB TEQ



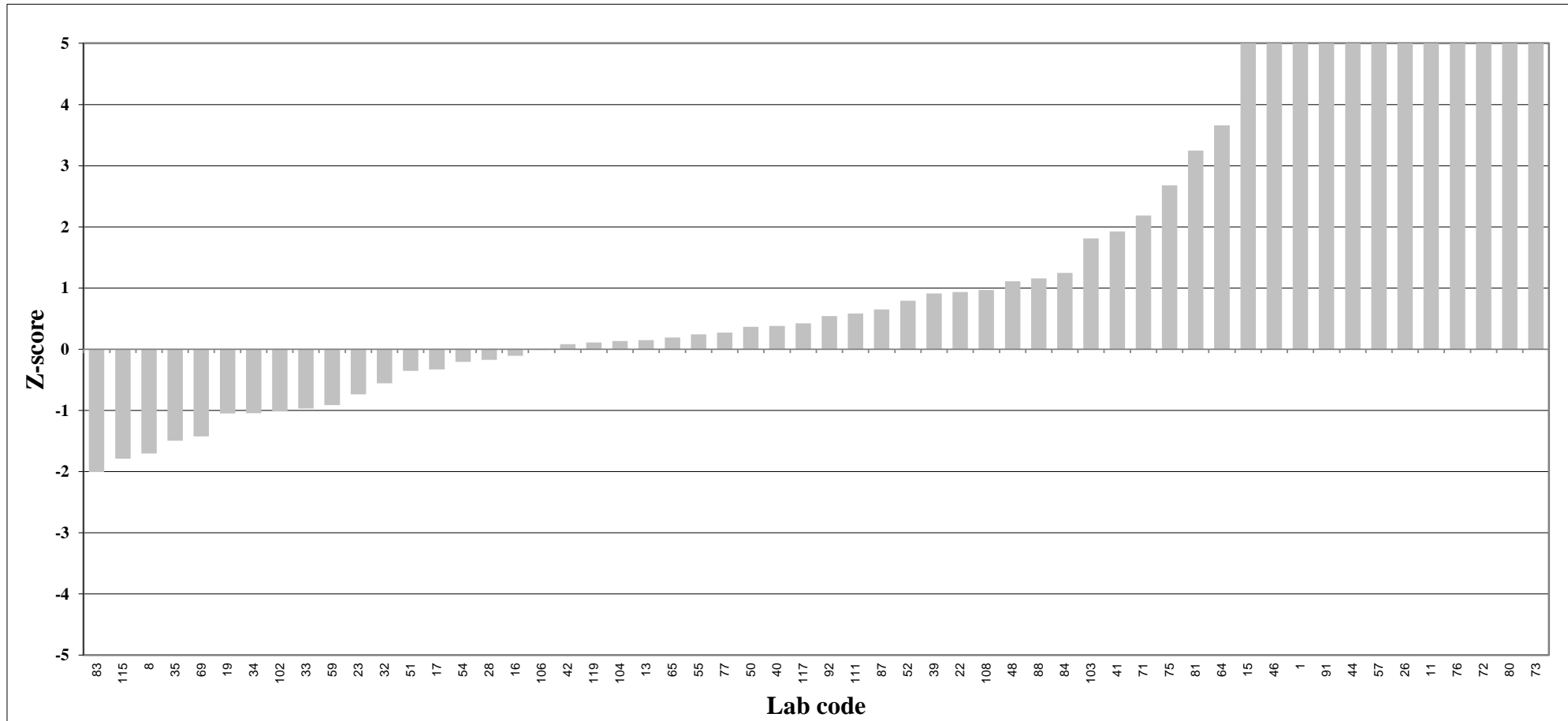
Z-score Sheep meat, fresh weight; sum indicator PCB



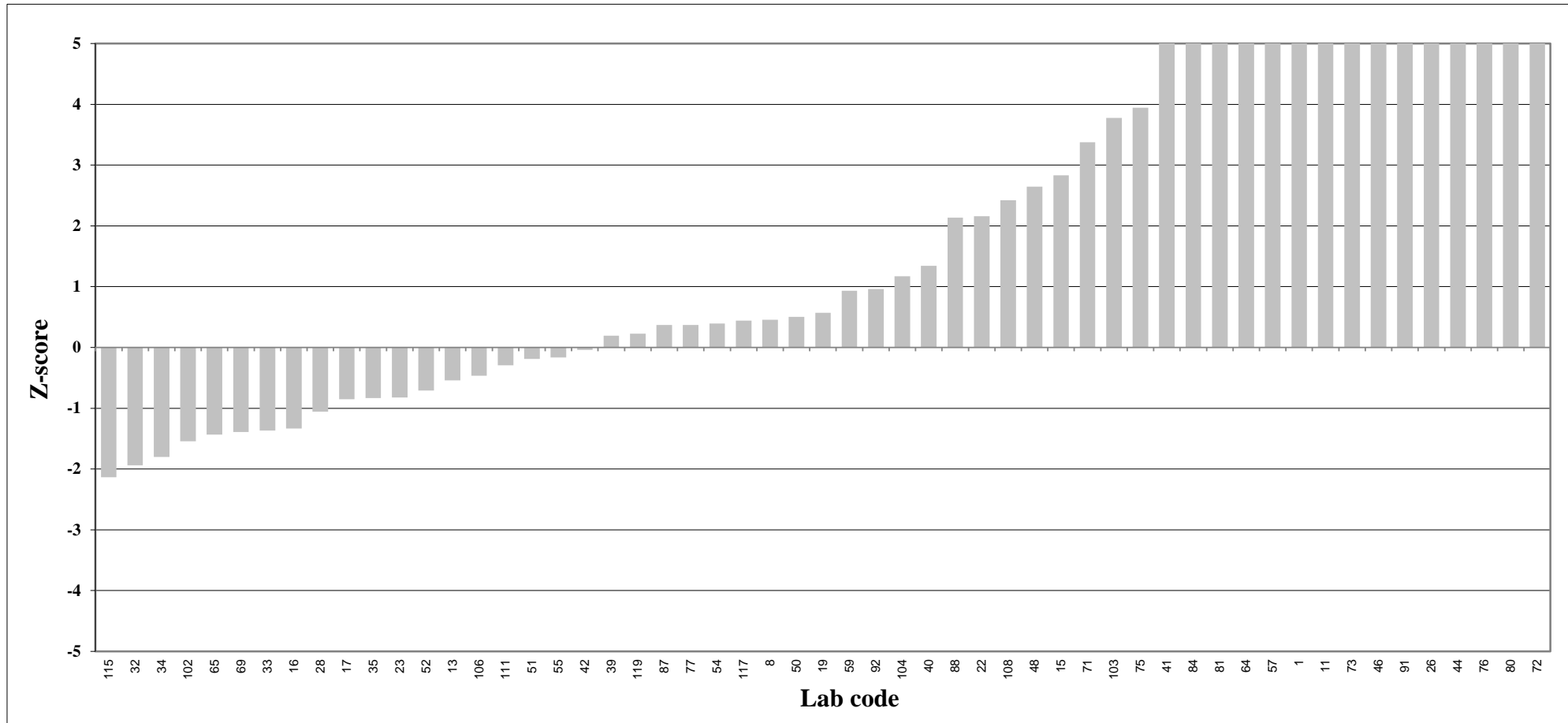
Z-score Sheep meat, fresh weight; sum PBDE without BDE-209



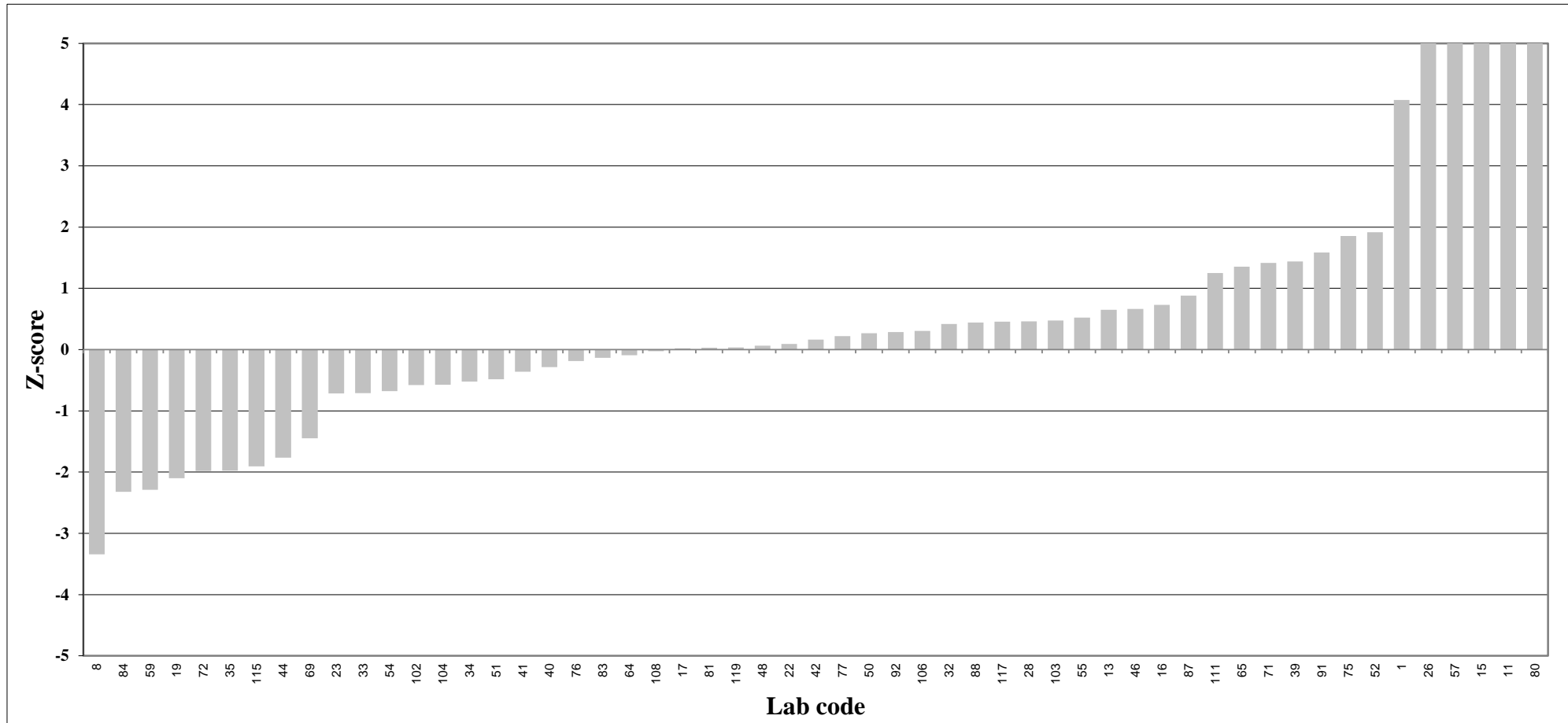
Z-score Sheep meat, lipid weight; total TEQ



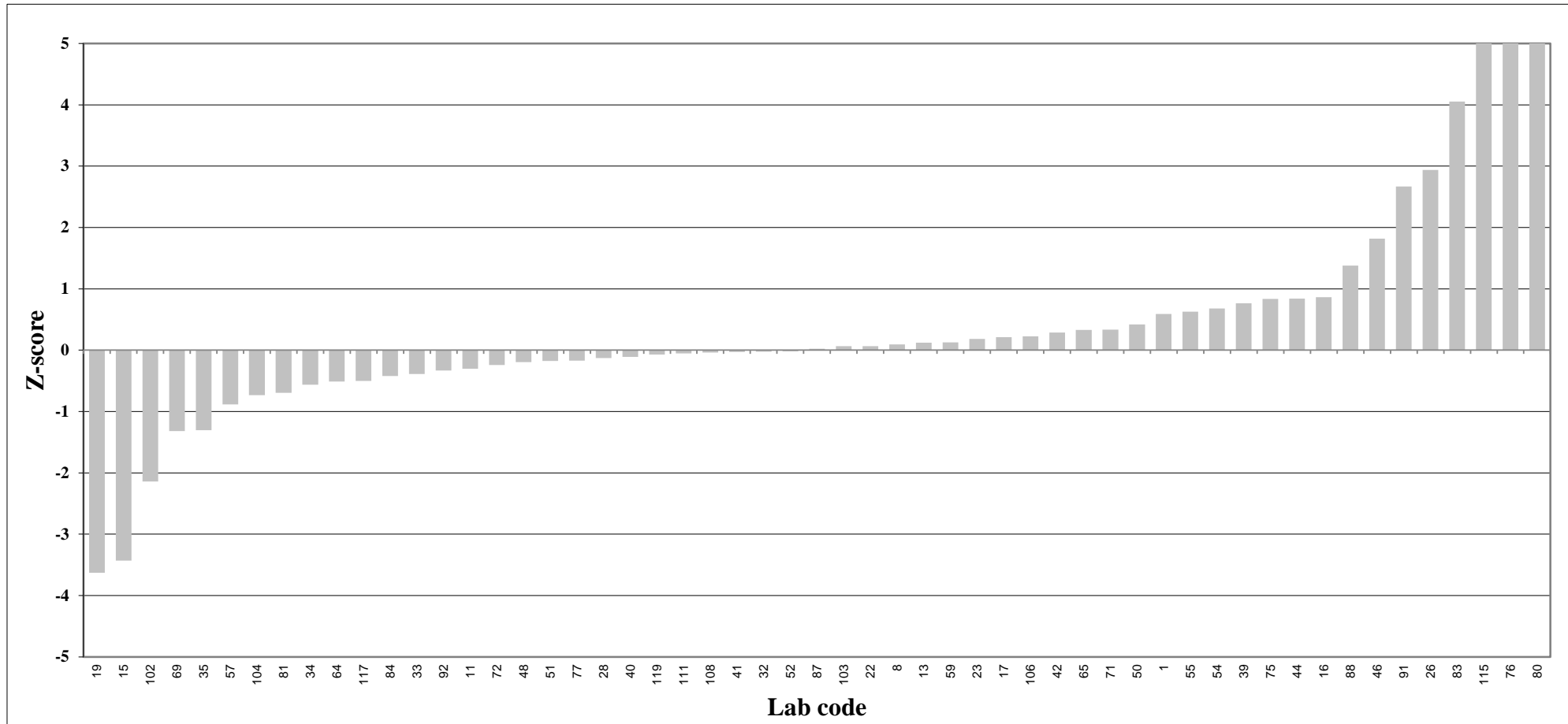
Z-score Sheep meat, lipid weight; PCDD/PCDF TEQ



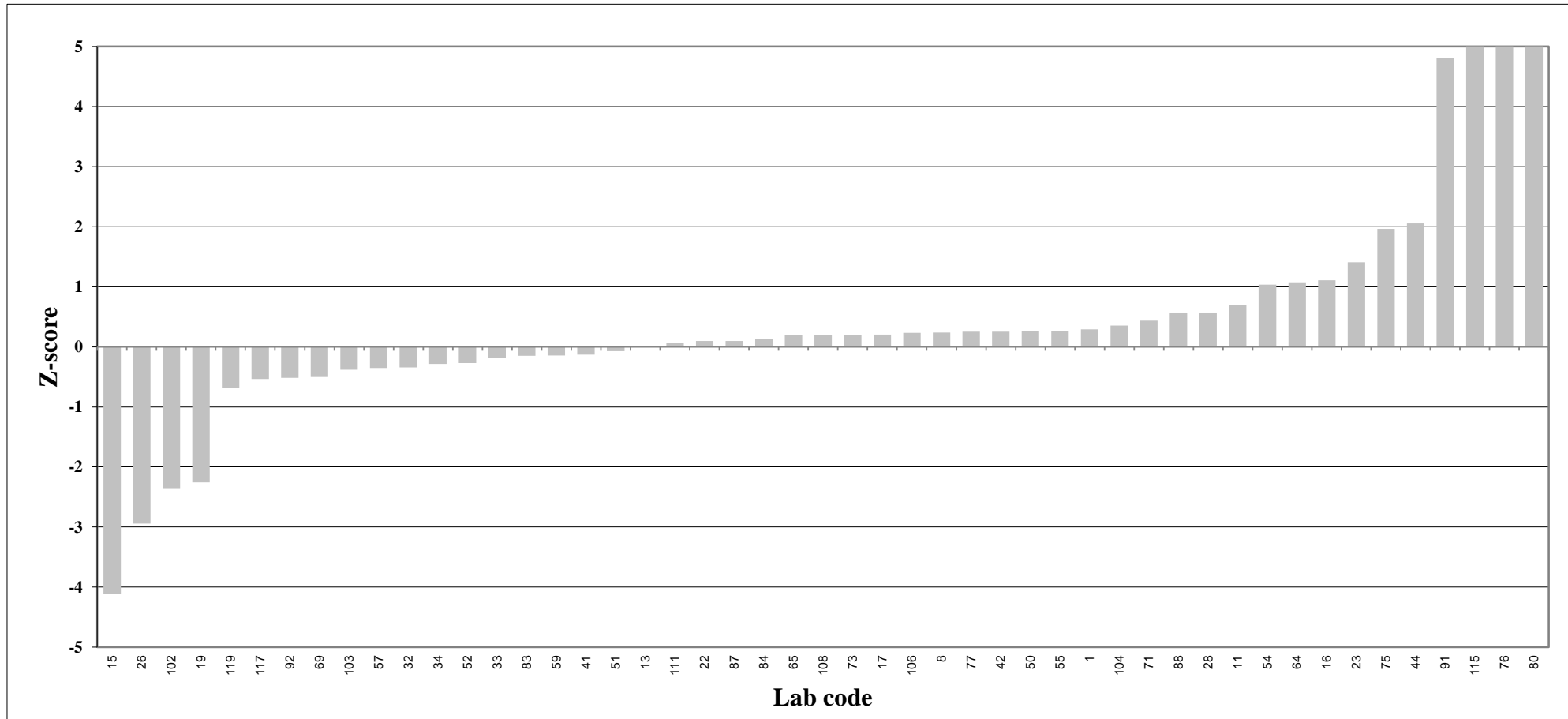
Z-score Sheep meat, lipid weight; non-ortho PCB TEQ



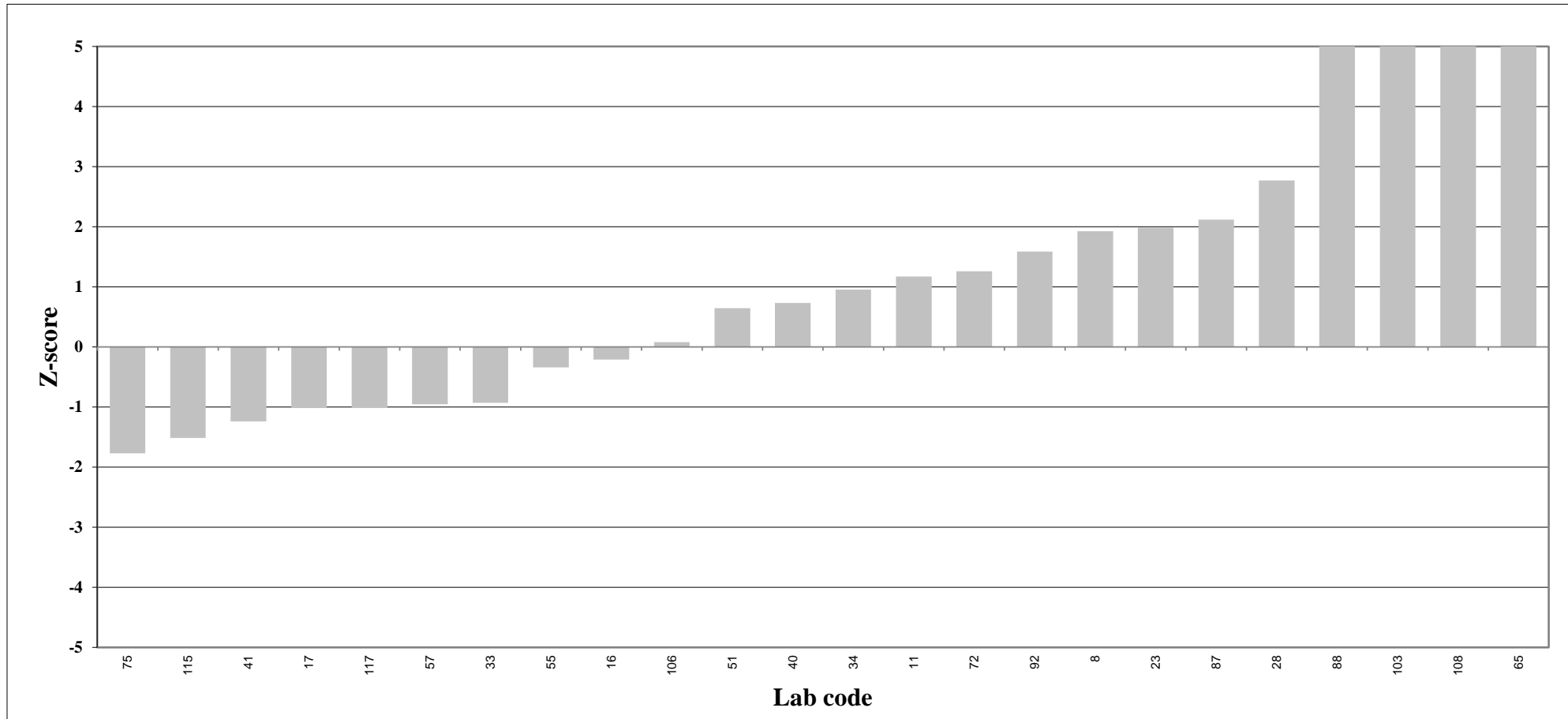
Z-score Sheep meat, lipid weight; mono-ortho PCB TEQ



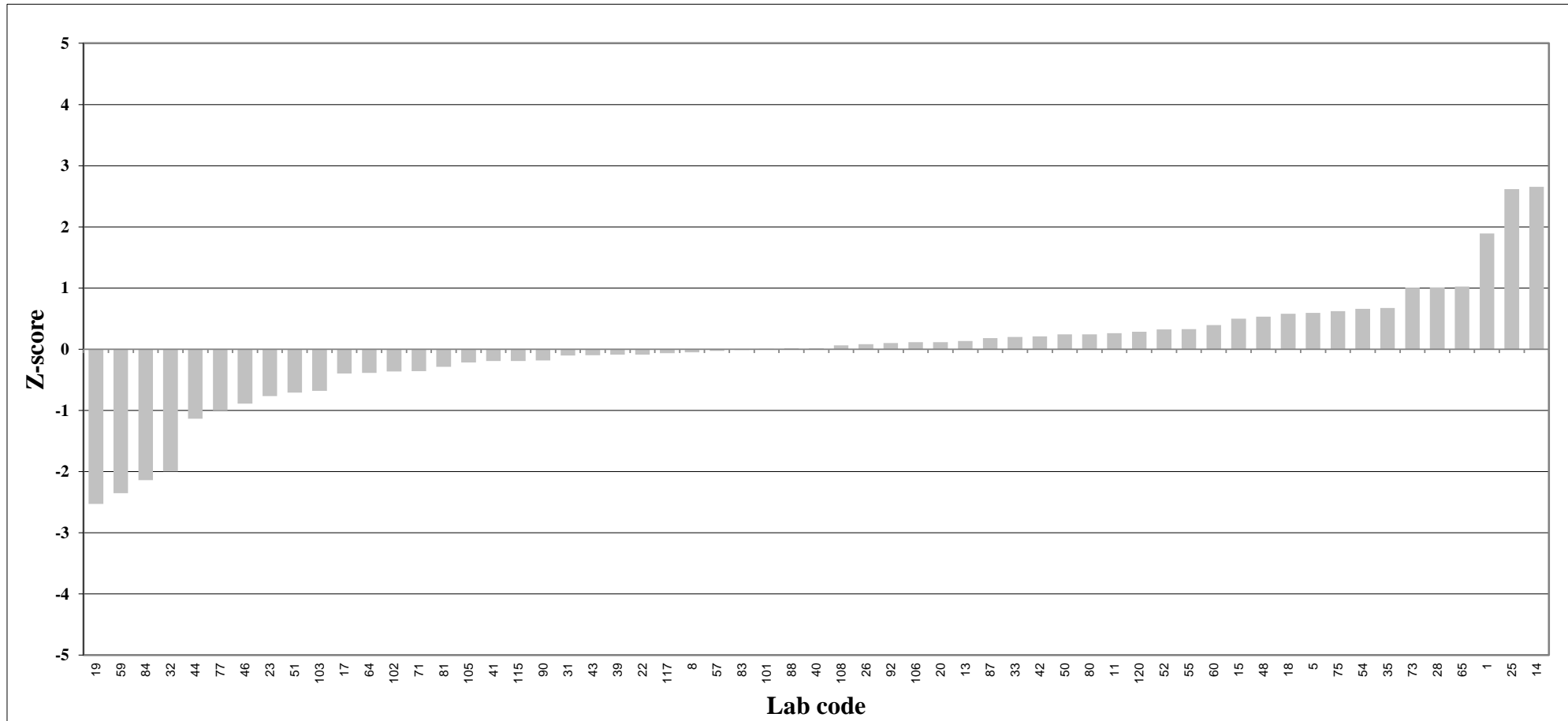
Z-score Sheep meat, lipid weight; sum indicator PCB



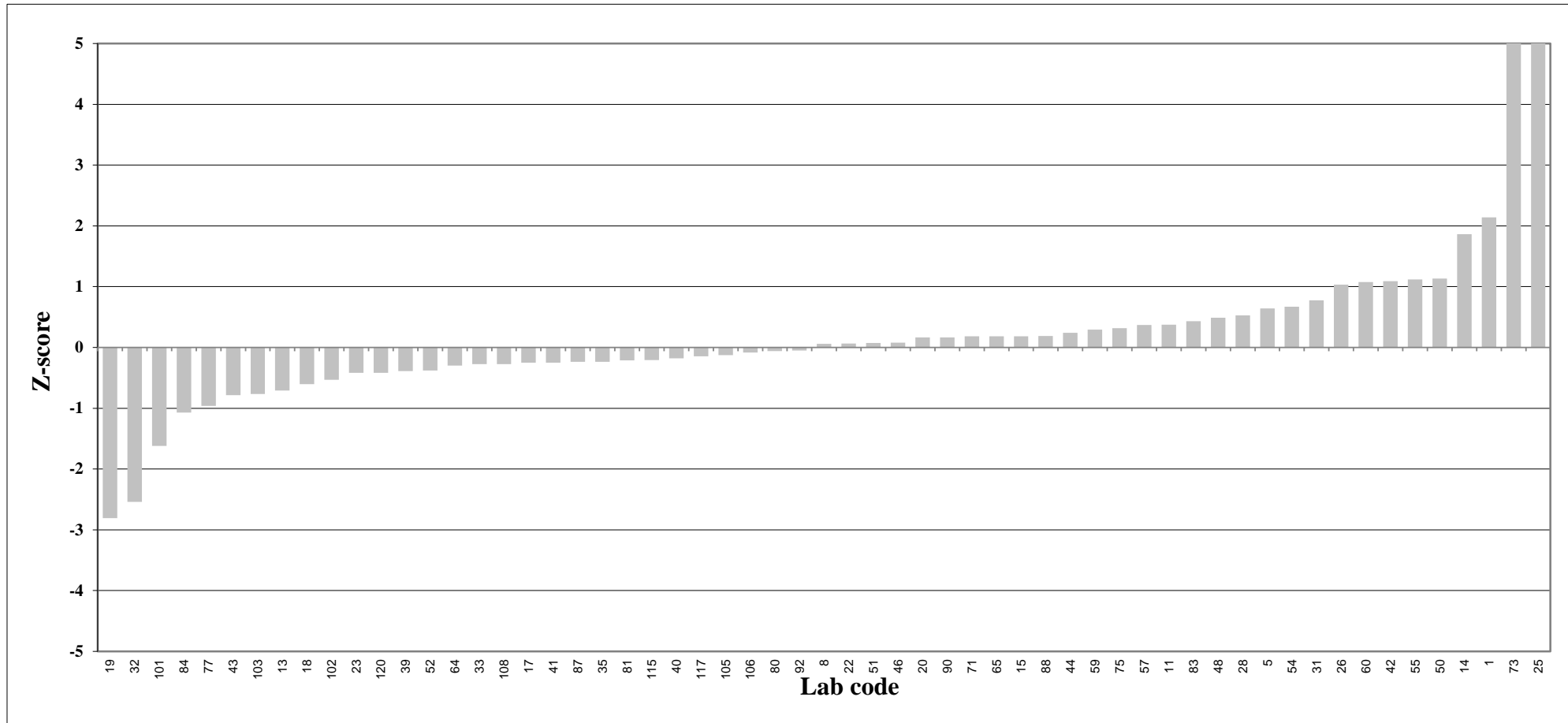
Z-score Sheep meat, lipid weight; sum PBDE without BDE-209



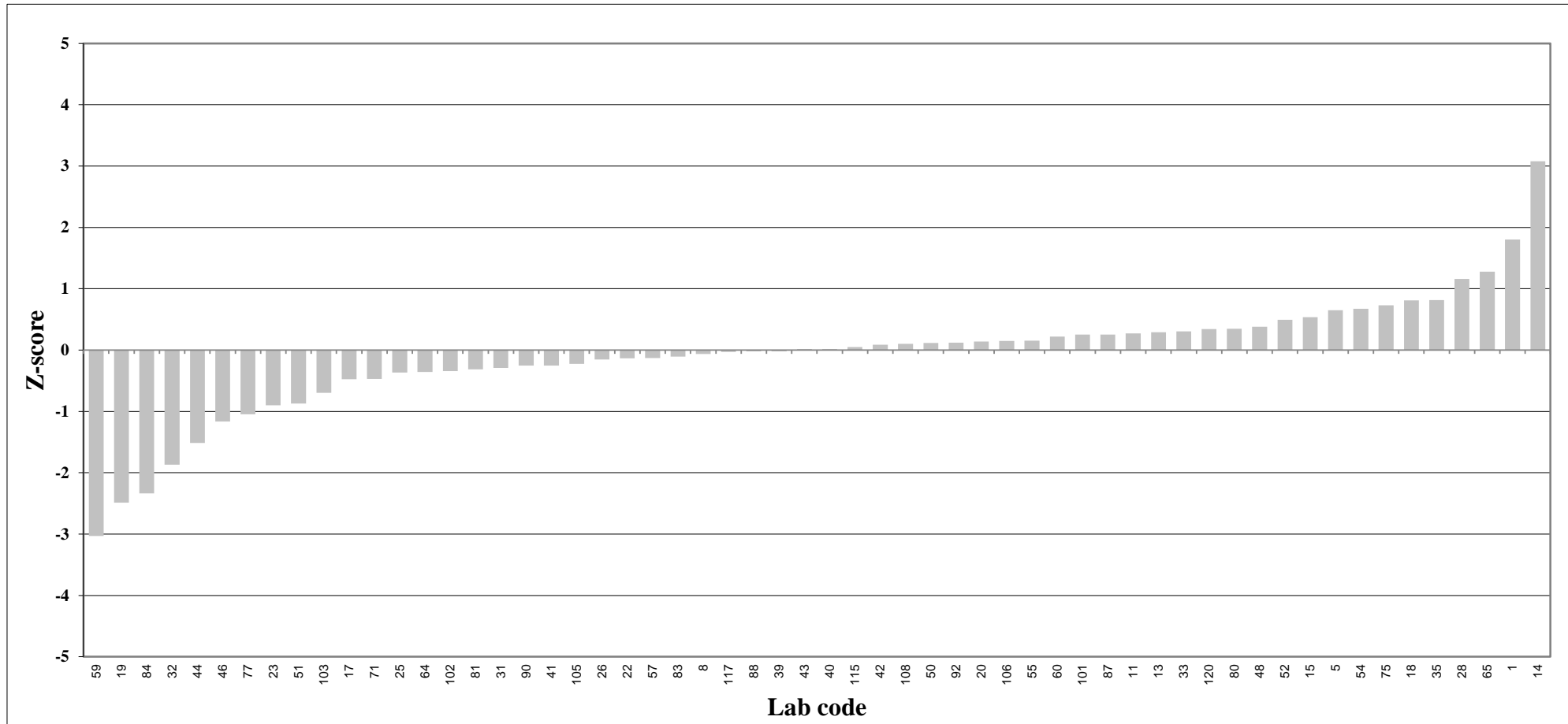
Z-score Cod liver, fresh weight; total TEQ



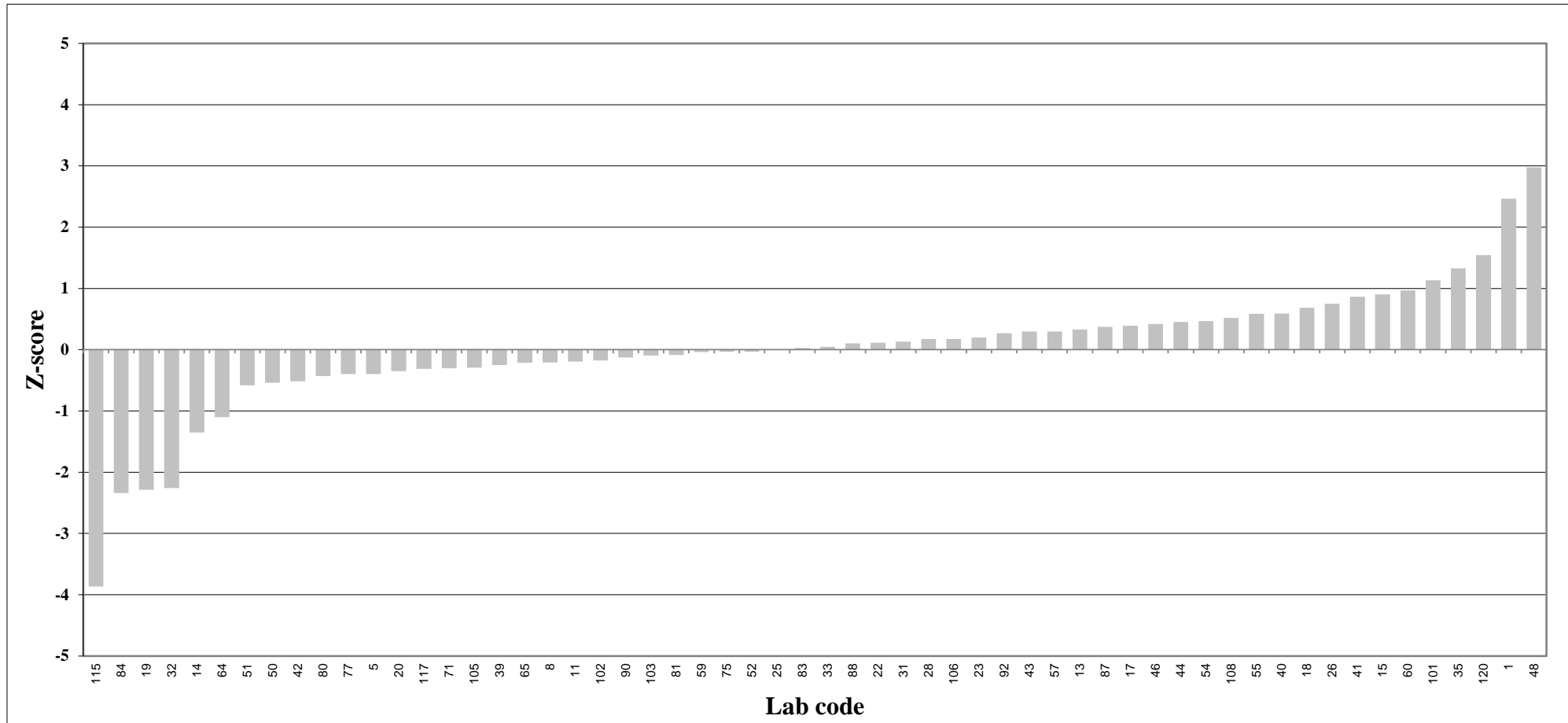
Z-score Cod liver, fresh weight; PCDD/PCDF TEQ



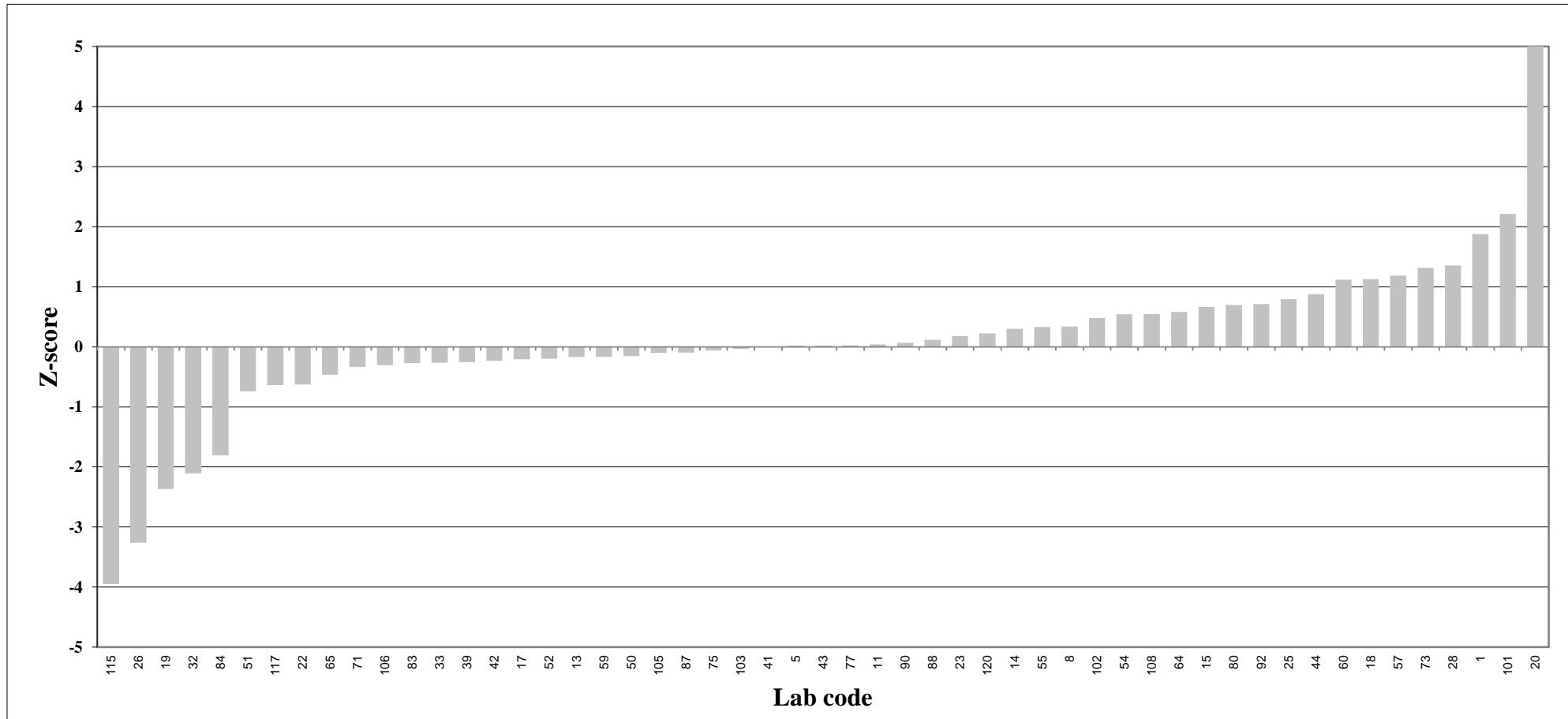
Z-score Cod liver, fresh weight; non-ortho PCB TEQ



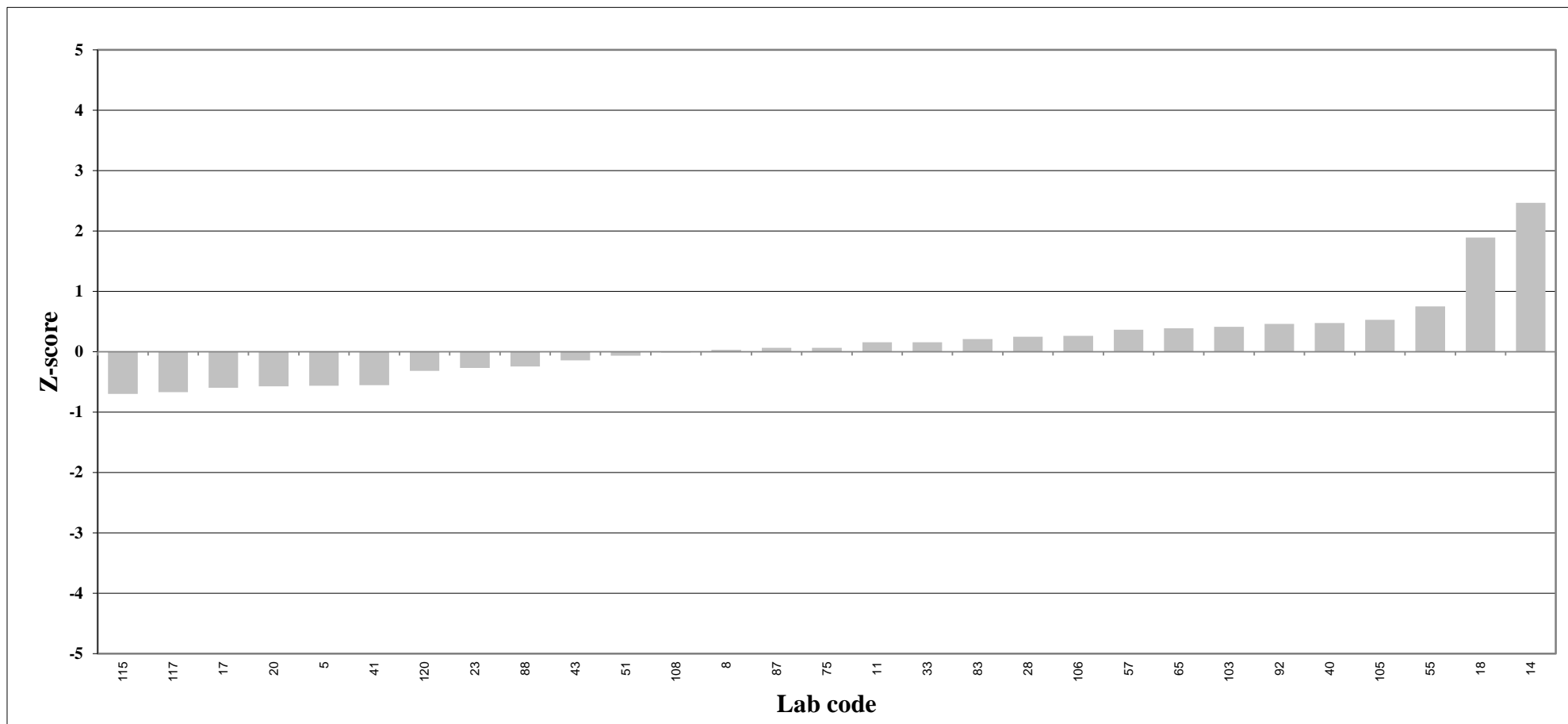
Z-score Cod liver, fresh weight; mono-ortho PCB TEQ



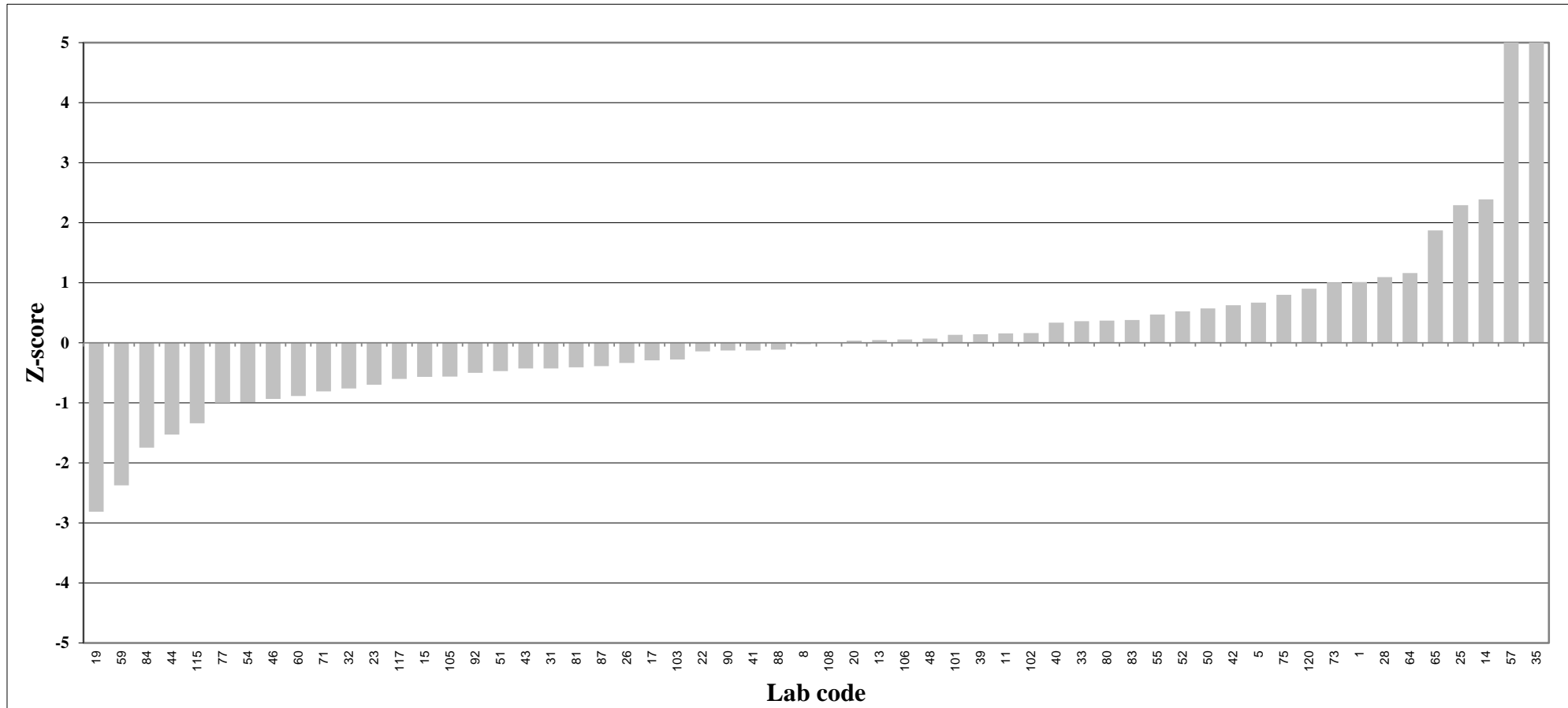
Z-score Cod liver, fresh weight; sum indicator PCB



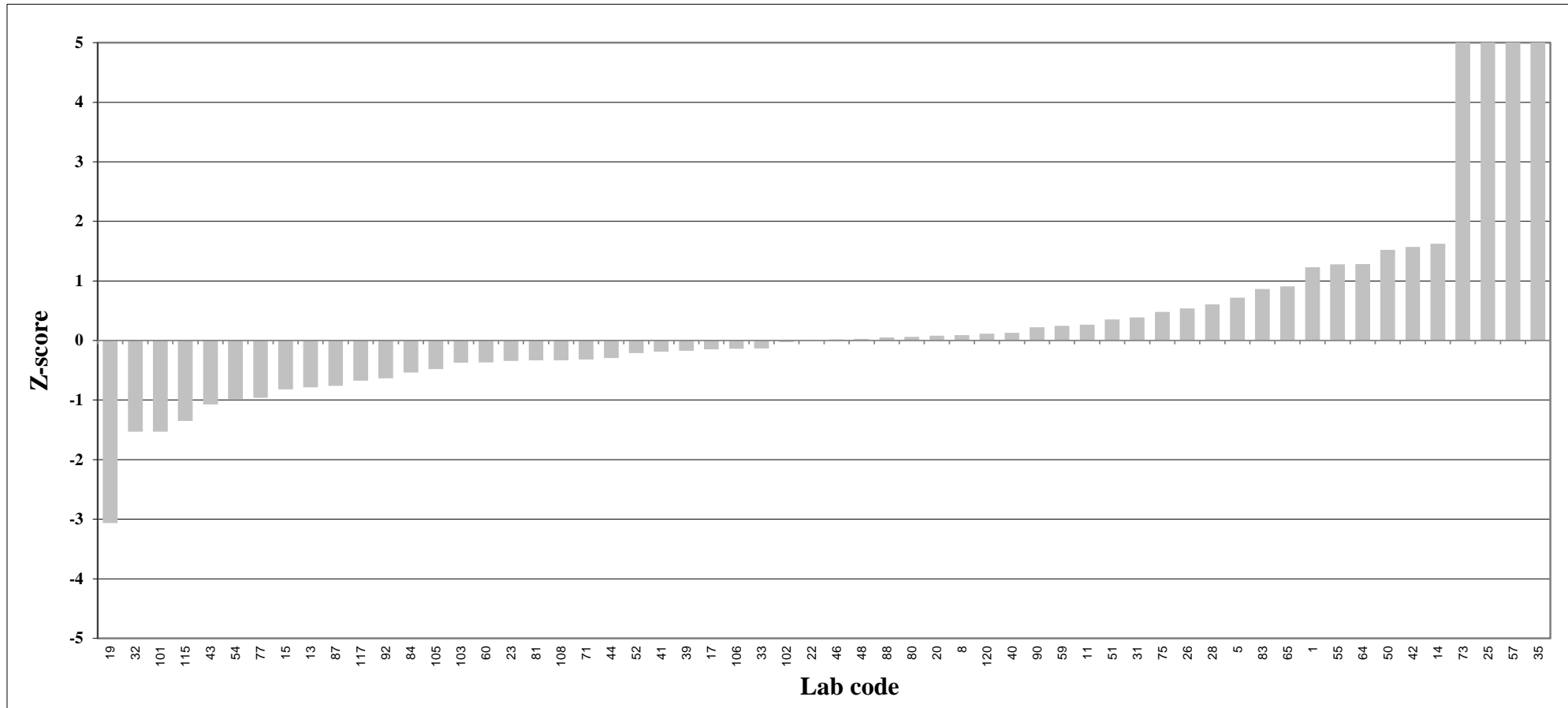
Z-score Cod liver, fresh weight; sum PBDE without BDE-209



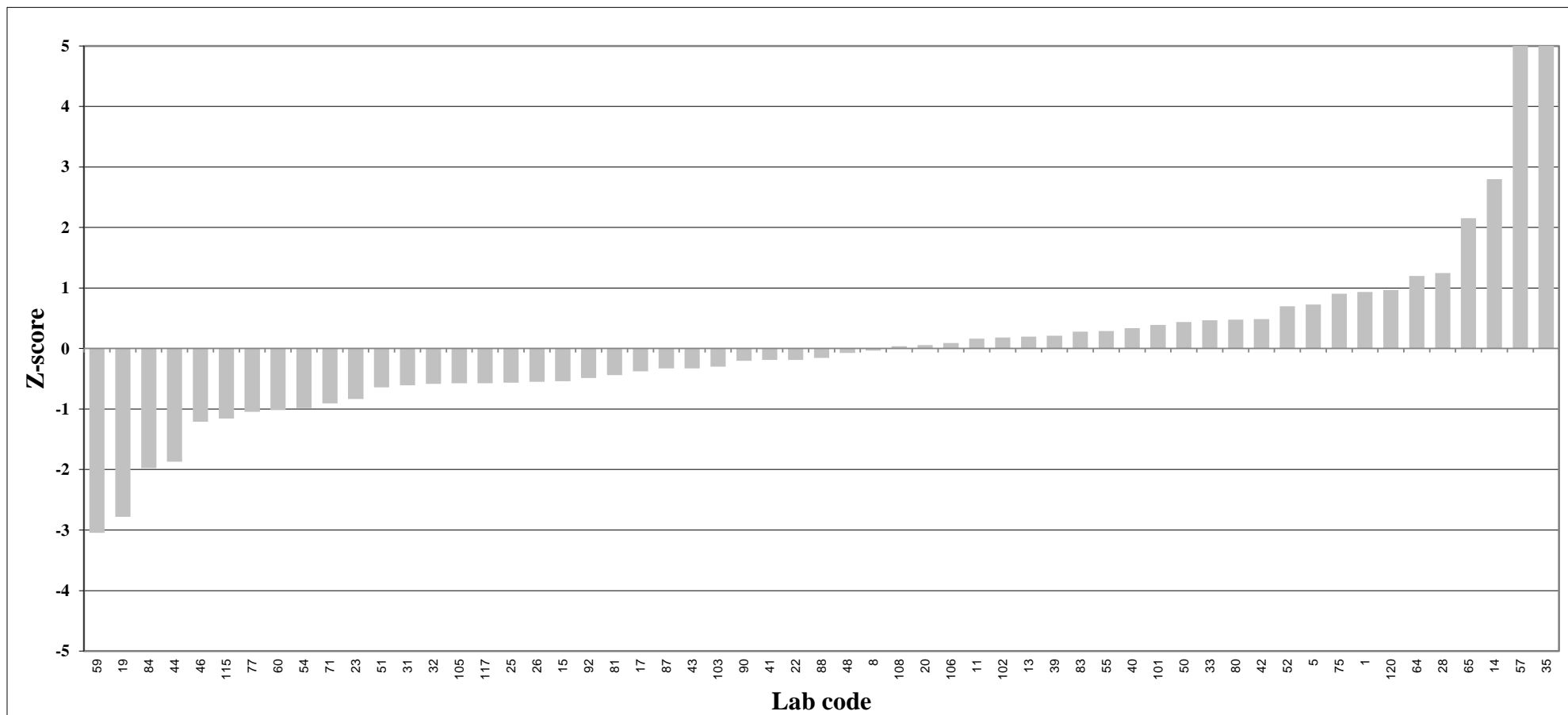
Z-score Cod liver, lipid weight; total TEQ



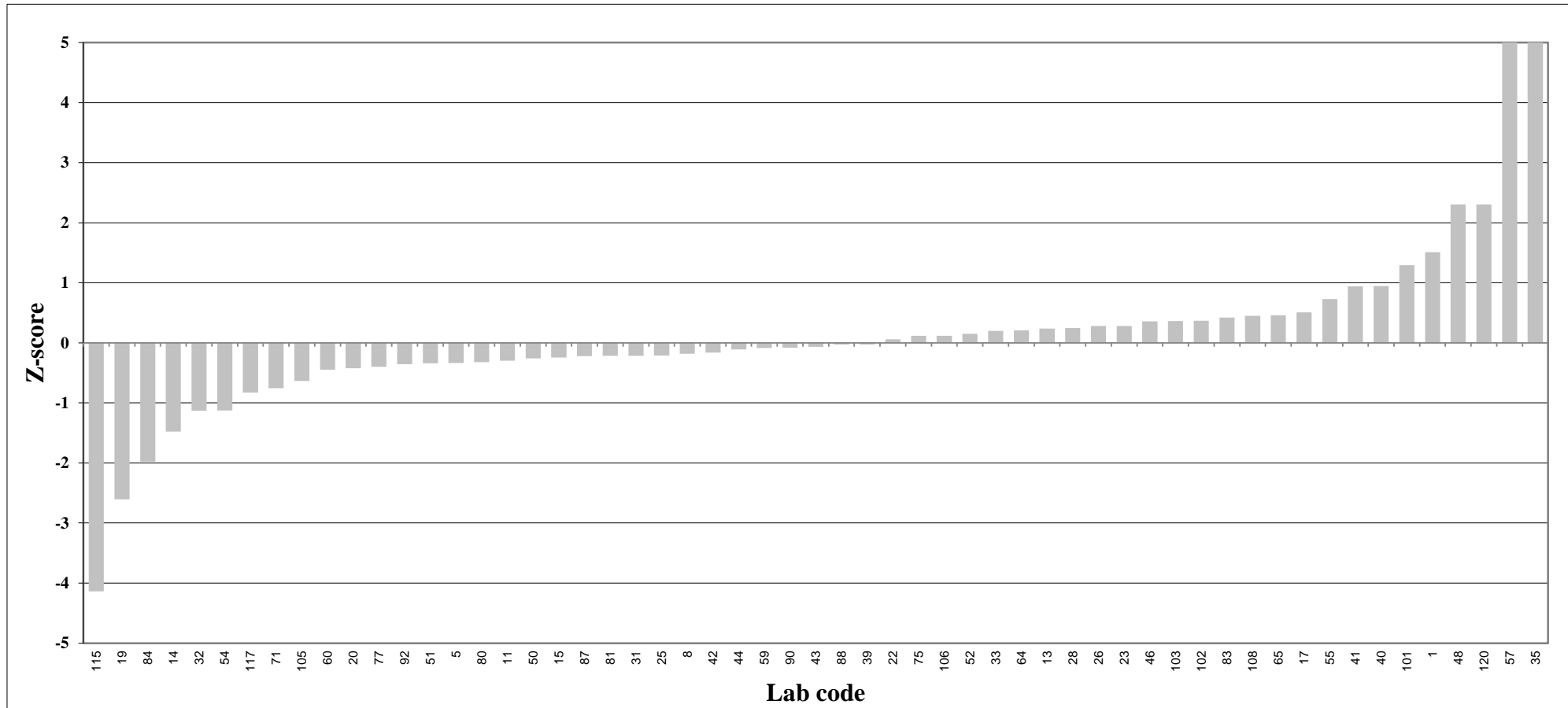
Z-score Cod liver, lipid weight; PCDD/PCDF TEQ



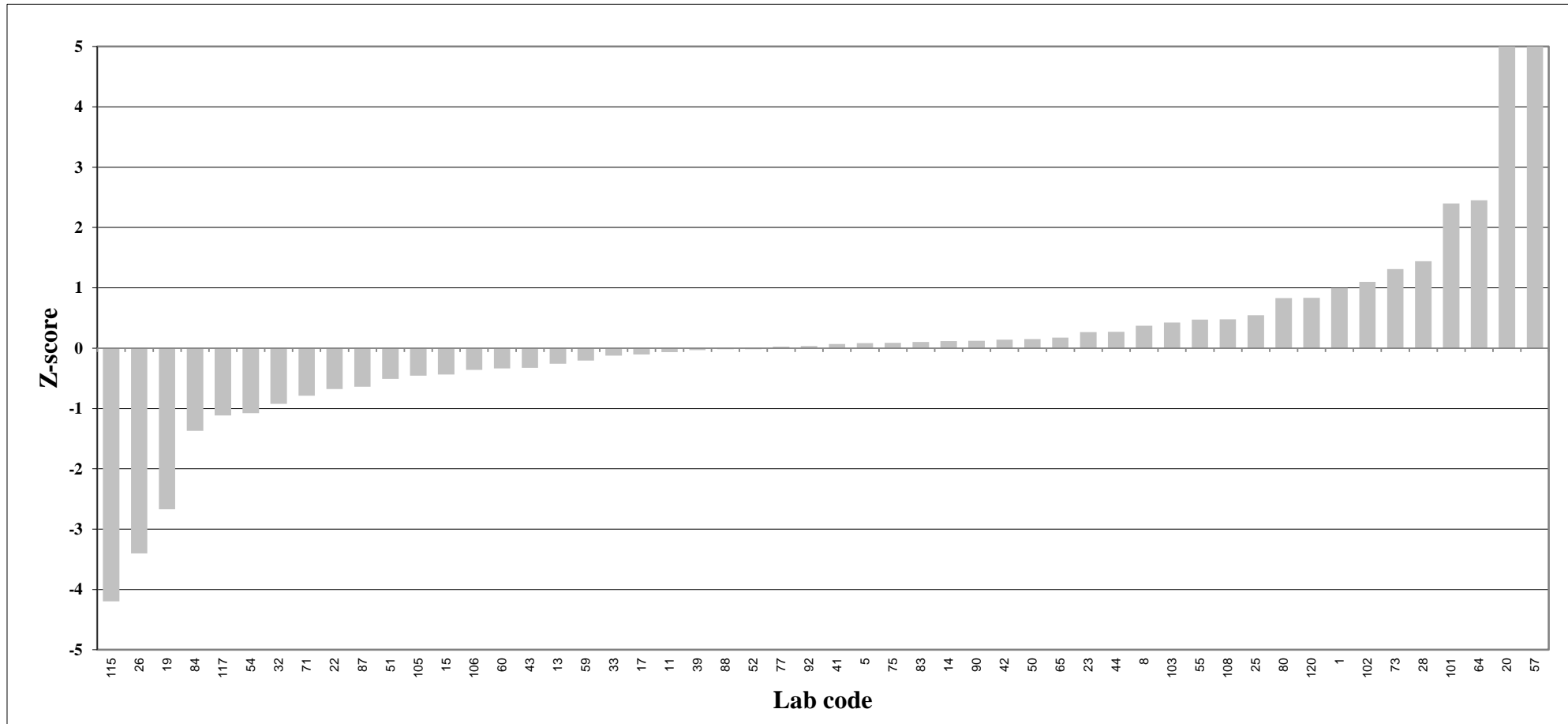
Z-score Cod liver, lipid weight; non-ortho PCB TEQ



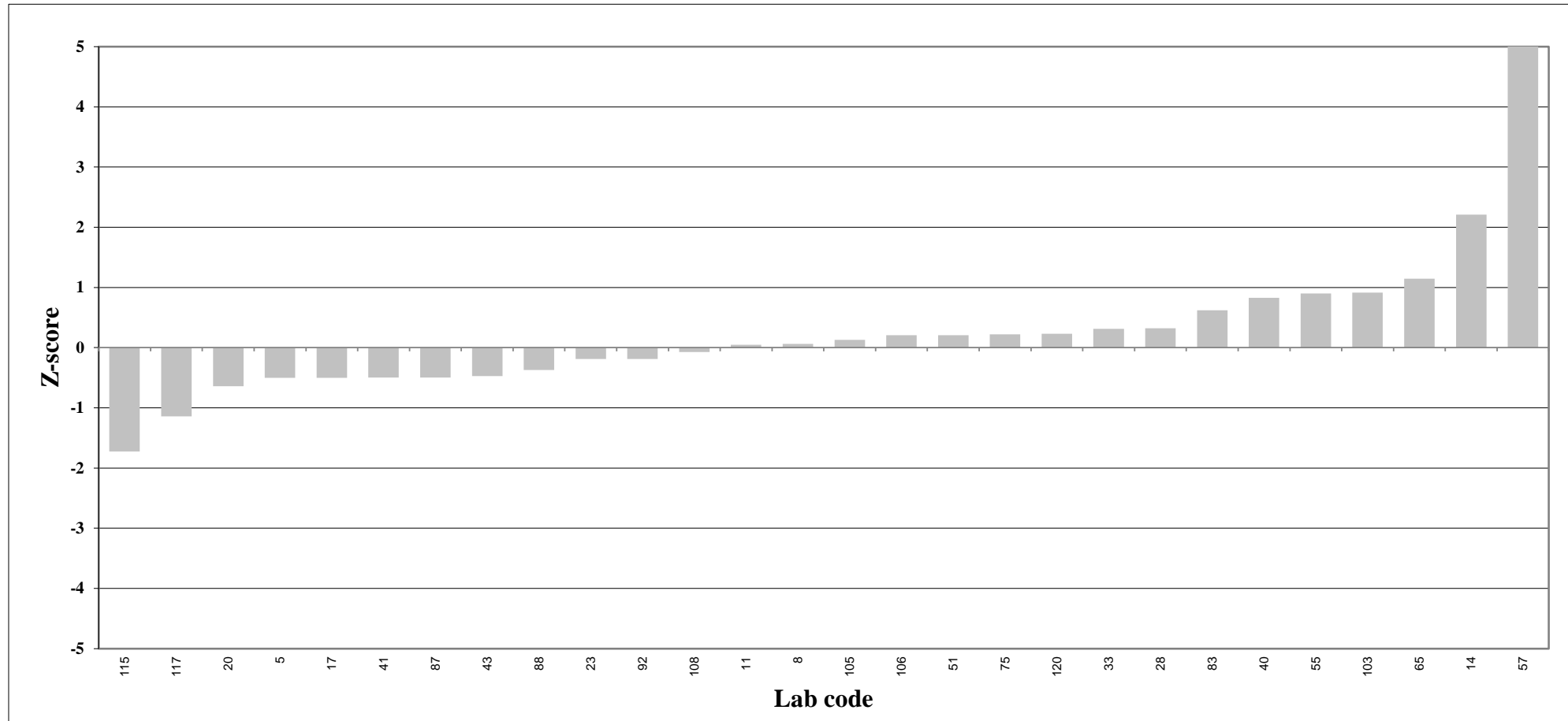
Z-score Cod liver, lipid weight; mono-ortho PCB TEQ



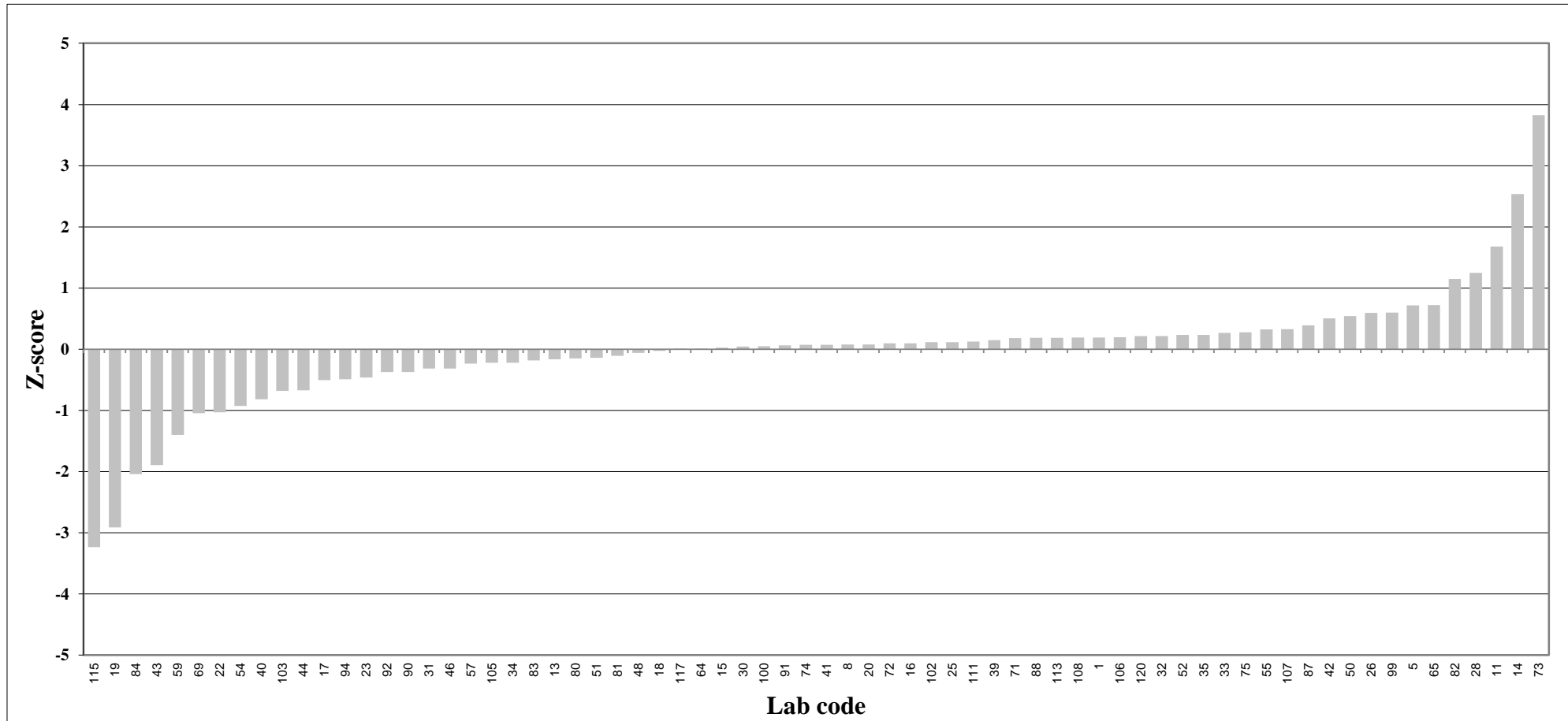
Z-score Cod liver, lipid weight; sum indicator PCB



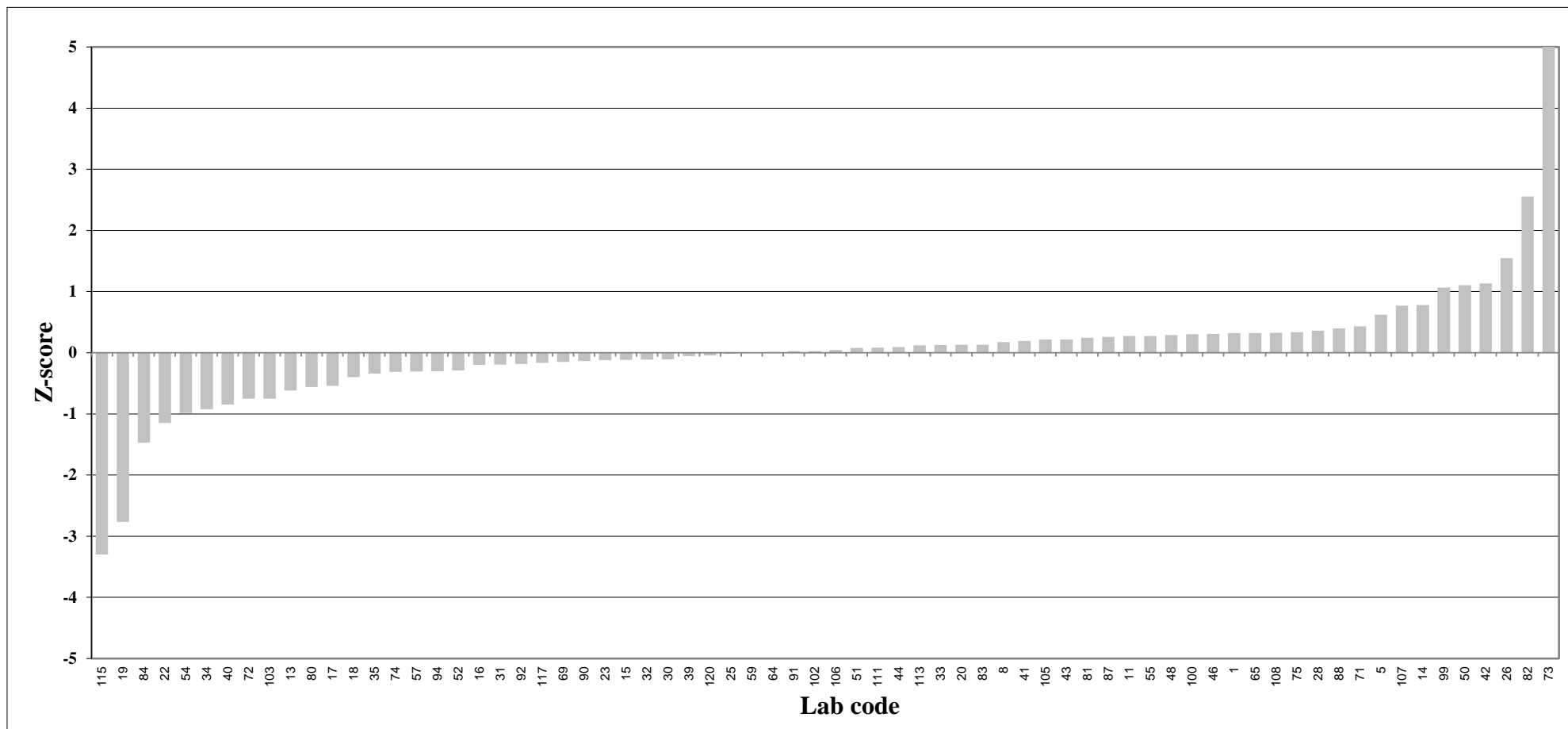
Z-score Cod liver, lipid weight; sum PBDE without BDE-209



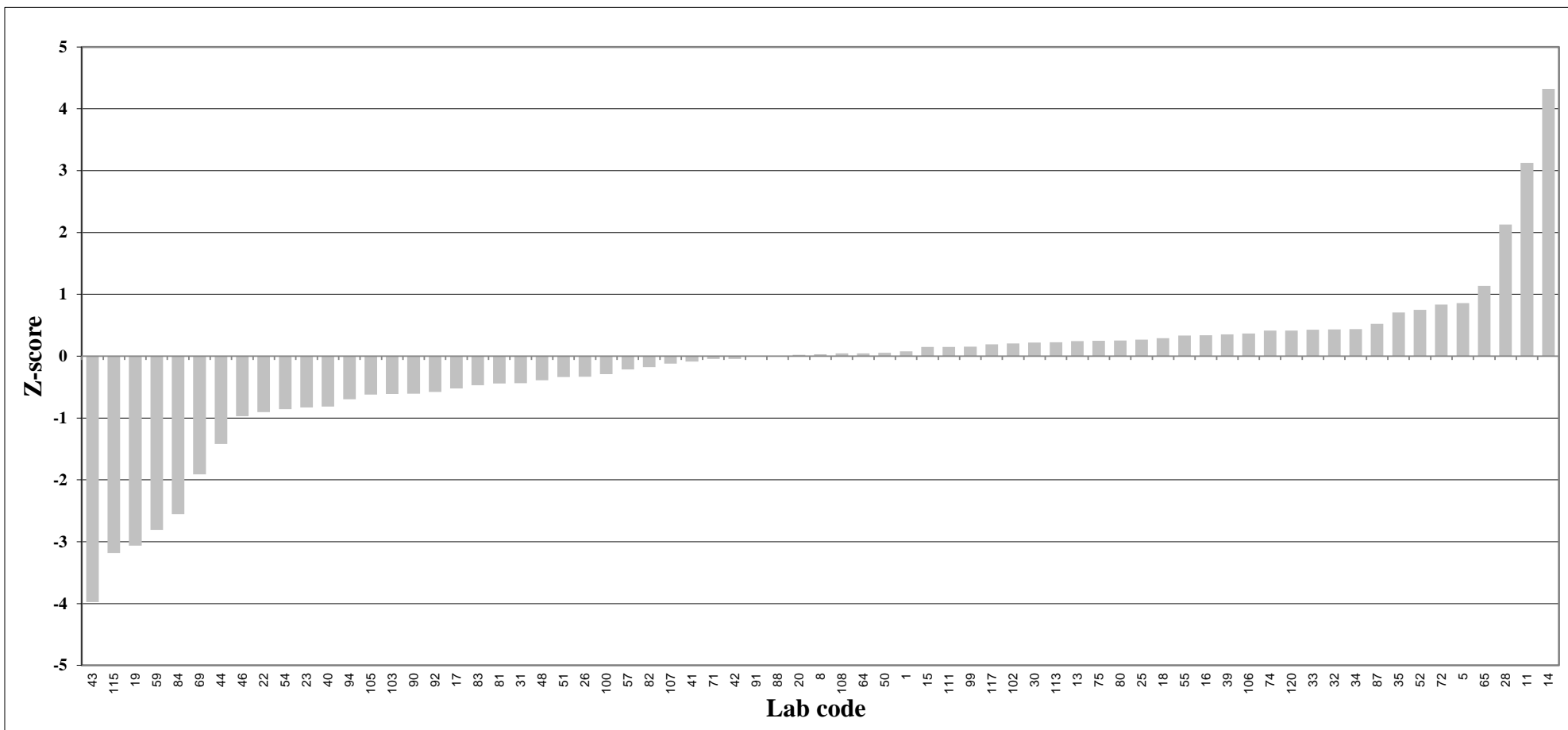
Z-score Herring, fresh weight; total TEQ



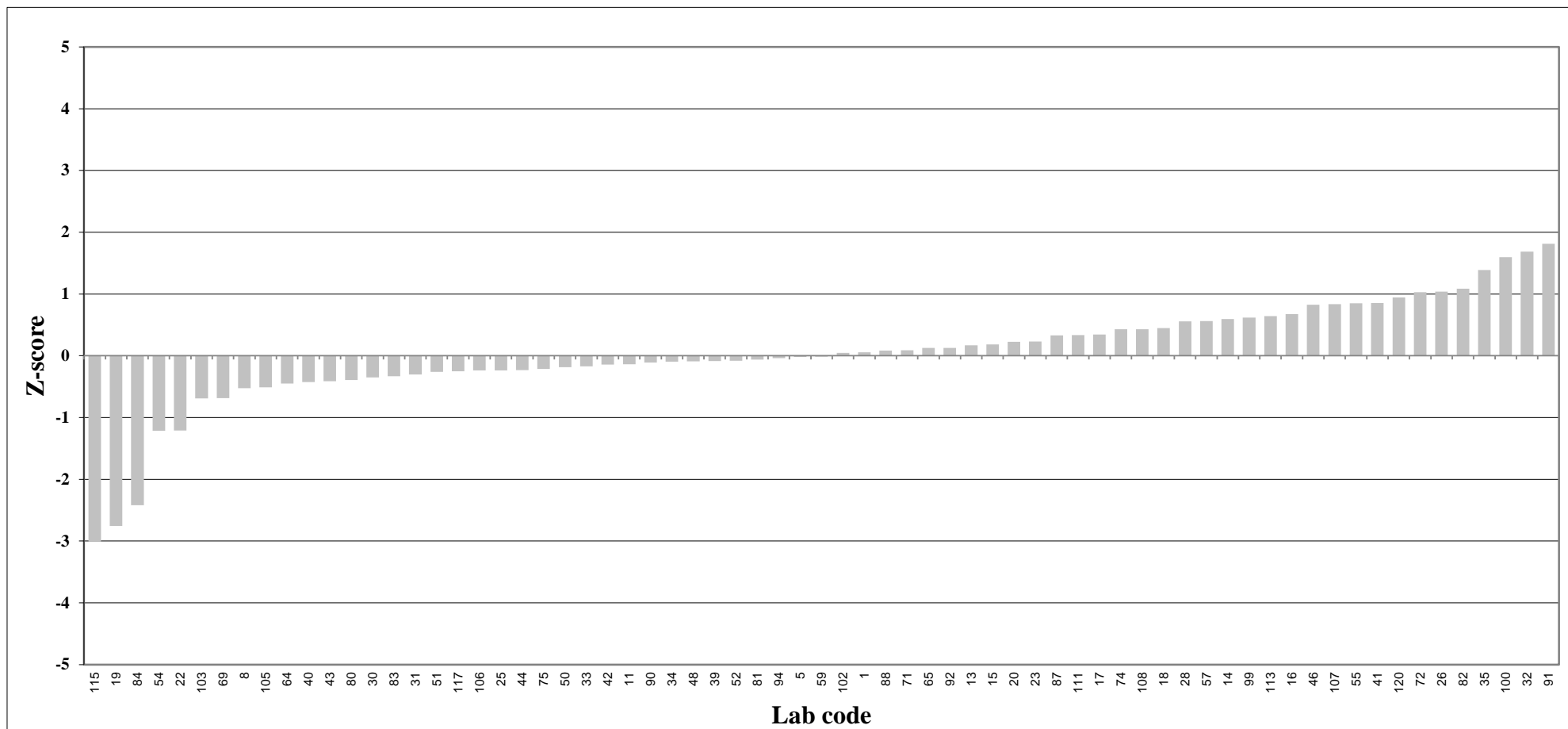
Z-score Herring, fresh weight; PCDD/PCDF TEQ



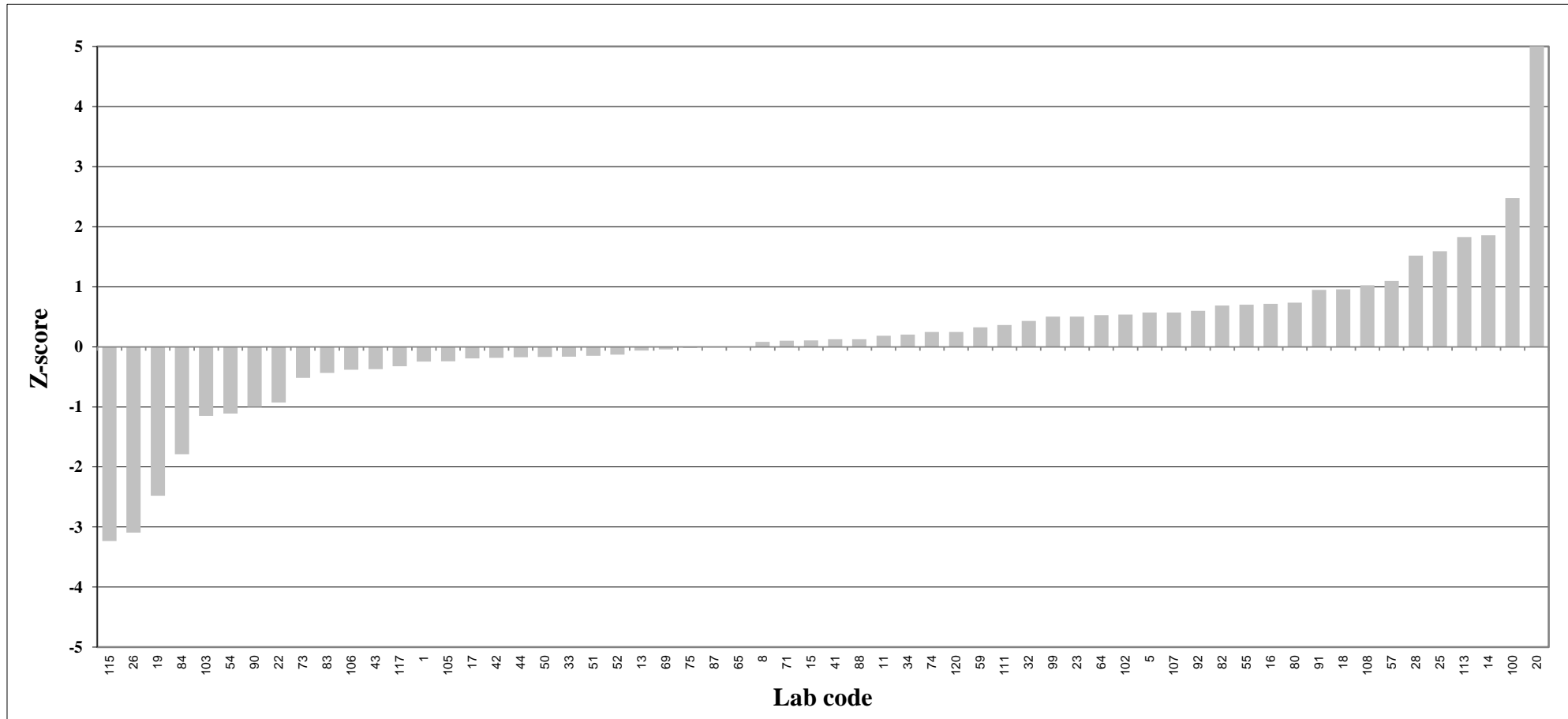
Z-score Herring, fresh weight; non-ortho PCB TEQ



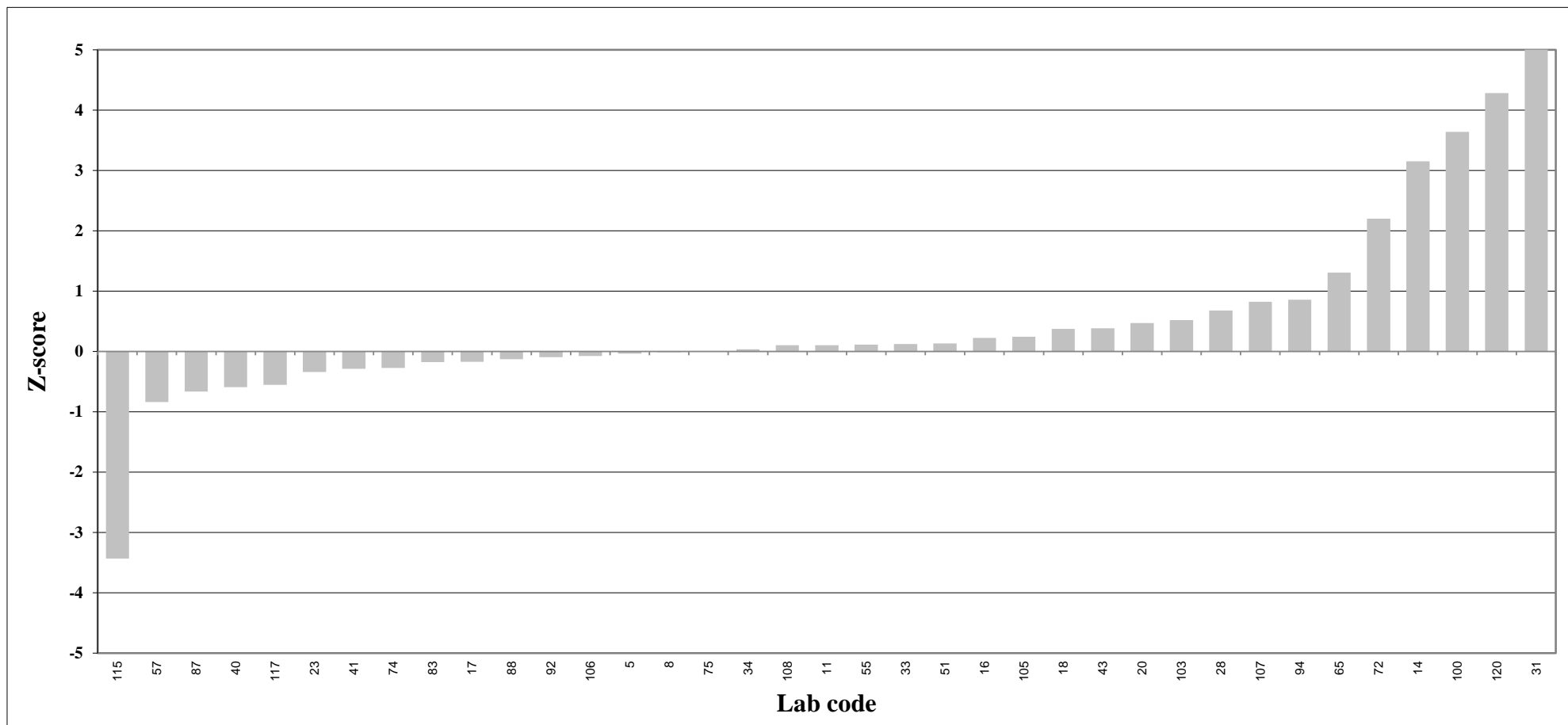
Z-score Herring, fresh weight; mono-ortho PCB TEQ



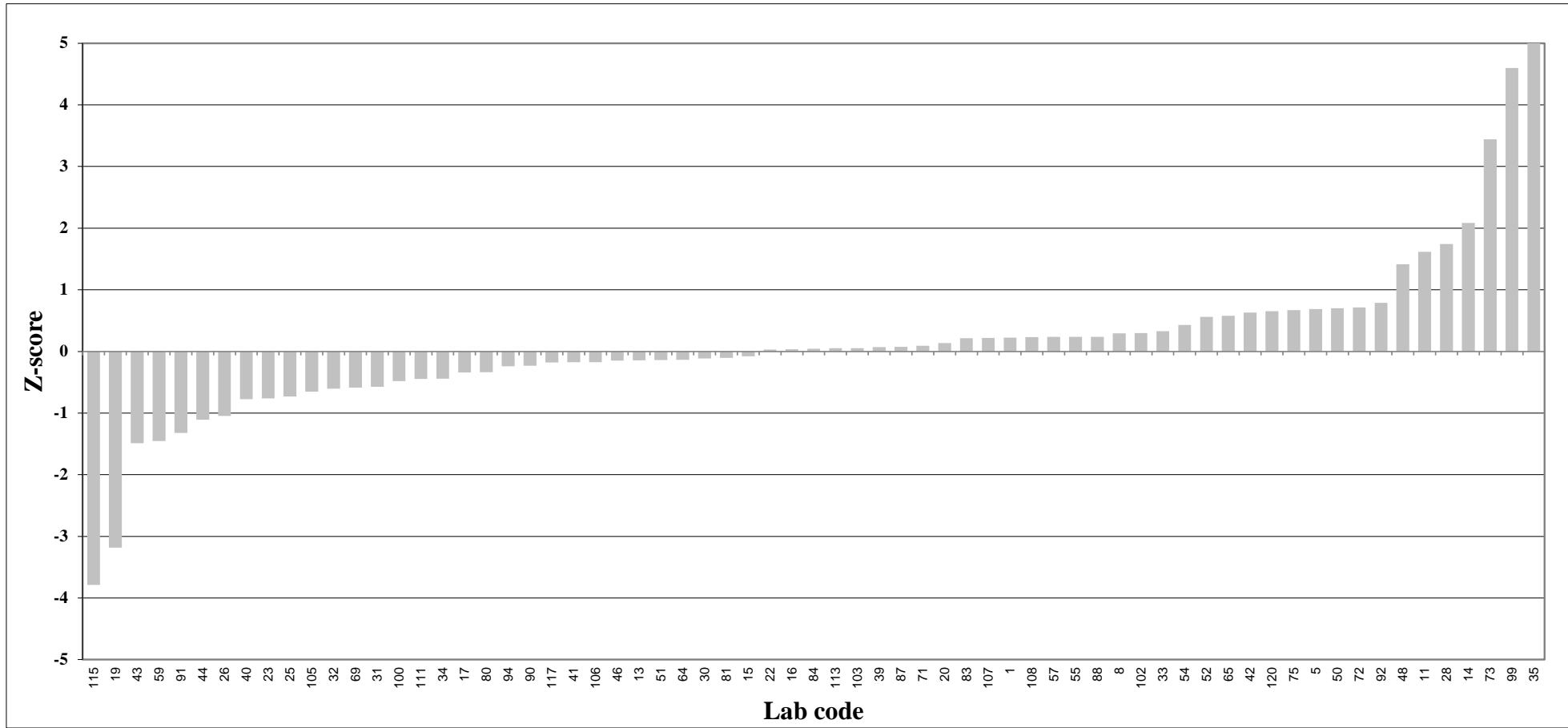
Z-score Herring, fresh weight; sum indicator PCB



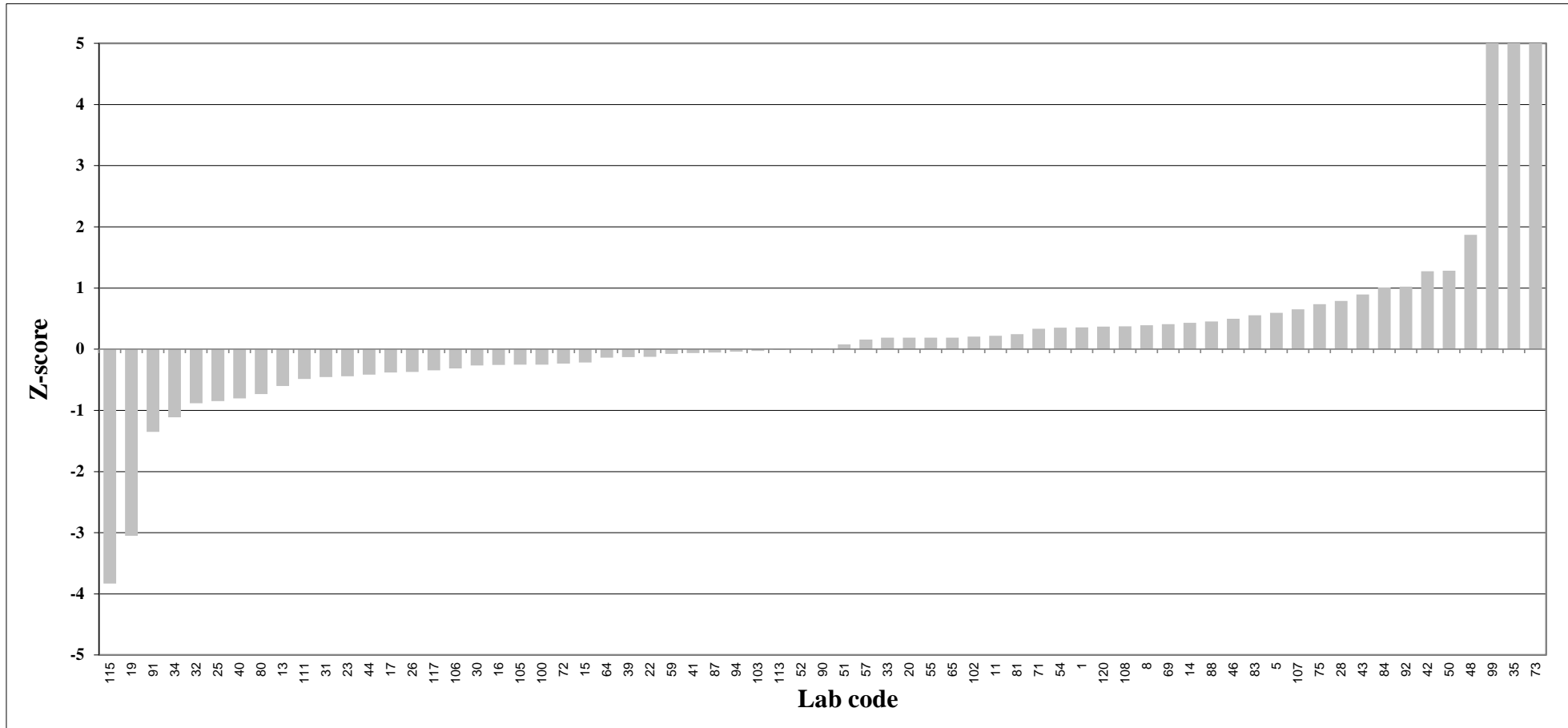
Z-score Herring, fresh weight; sum PBDE without BDE-209



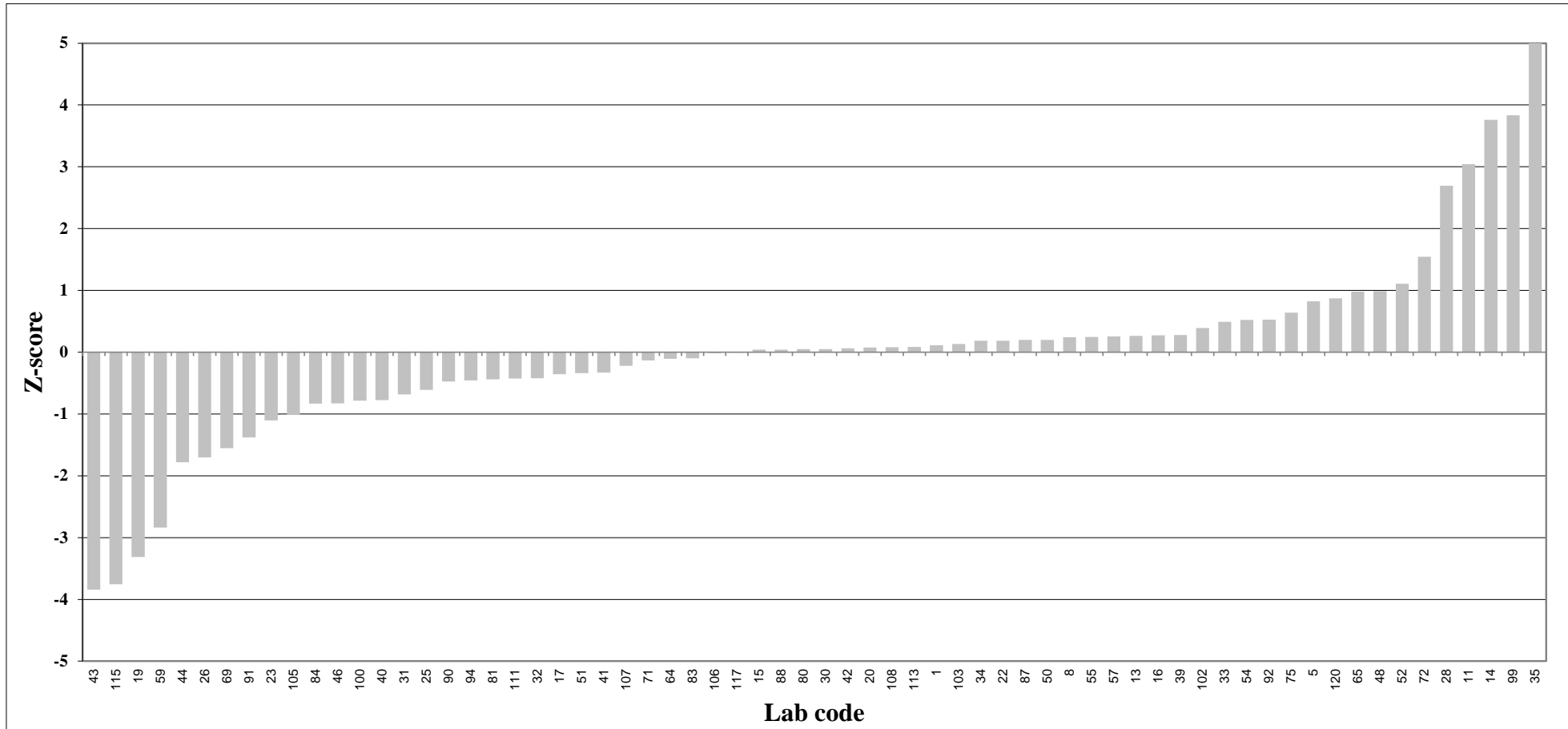
Z-score Herring, lipid weight; total TEQ



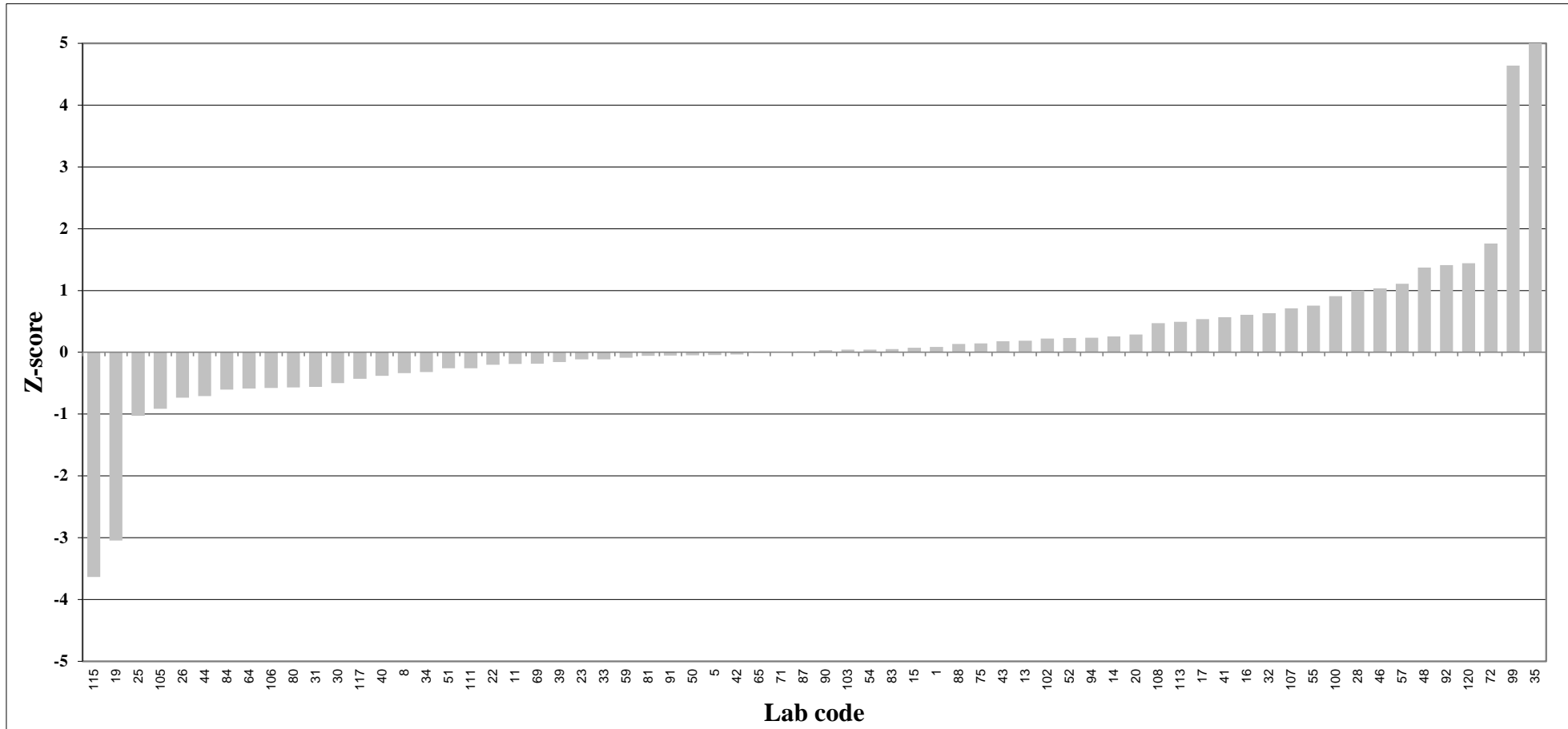
Z-score Herring, lipid weight; PCDD/PCDF TEQ



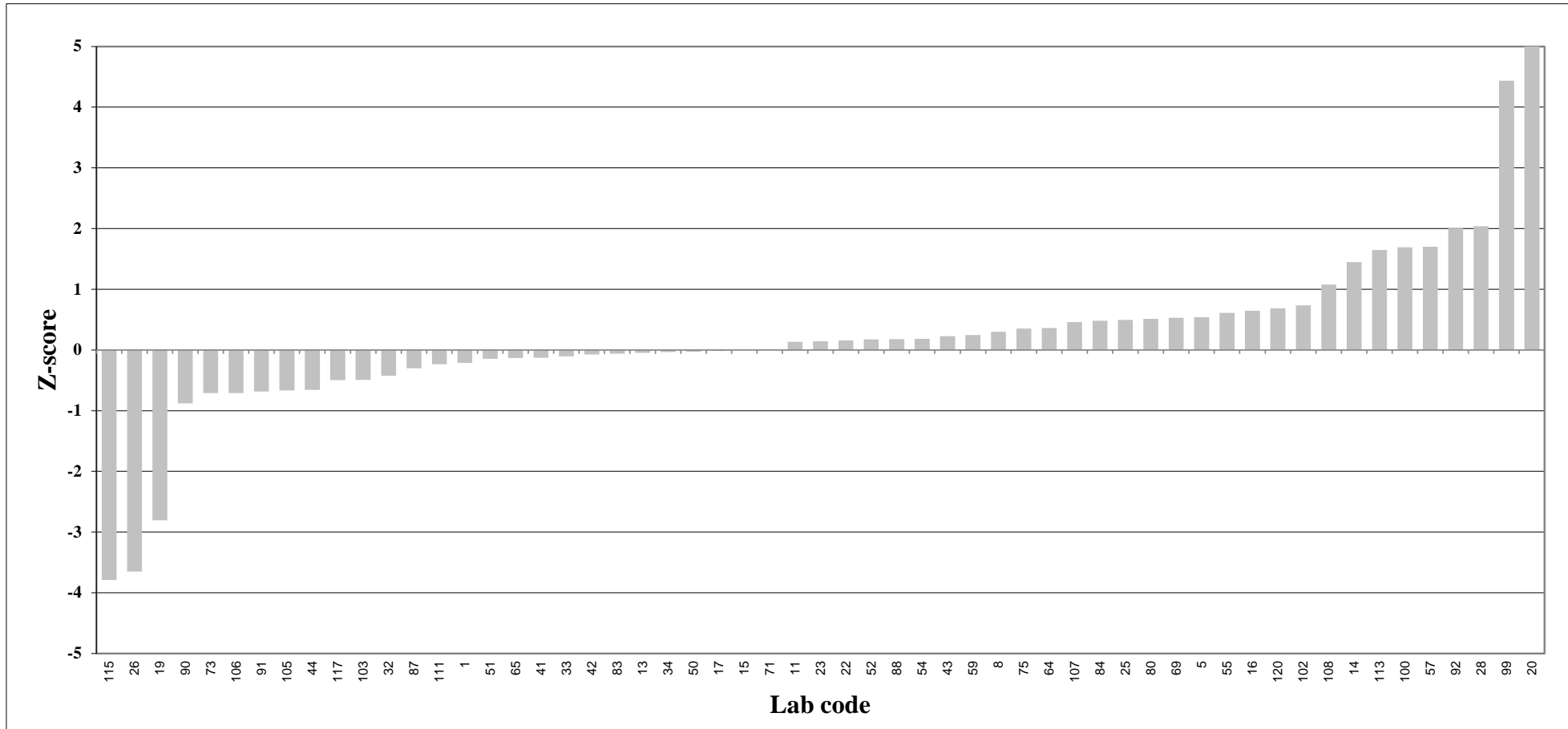
Z-score Herring, lipid weight; non-ortho PCB TEQ



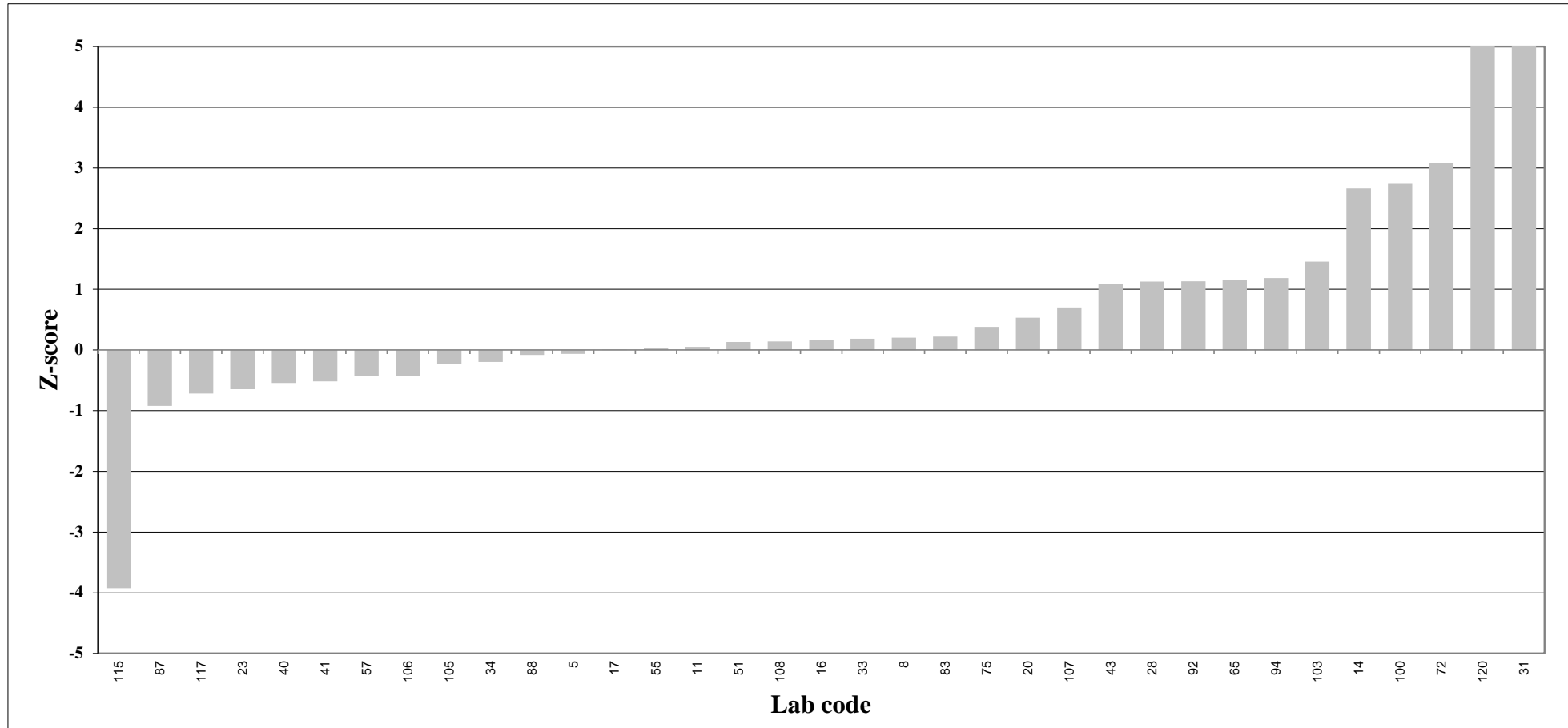
Z-score Herring, lipid weight; mono-ortho PCB TEQ



Z-score Herring, lipid weight; sum indicator PCB



Z-score Herring, lipid weight; sum PBDE without BDE-209



Appendix 1:

Presentation of results
for analyte solution

Appendix 1: Presentation of results: Analyte solution

Statistic calculations for PCDDs, PCDFs, dioxin-like PCBs, indicator PCBs, PBDEs and α -HBCD

The analyte solution contained

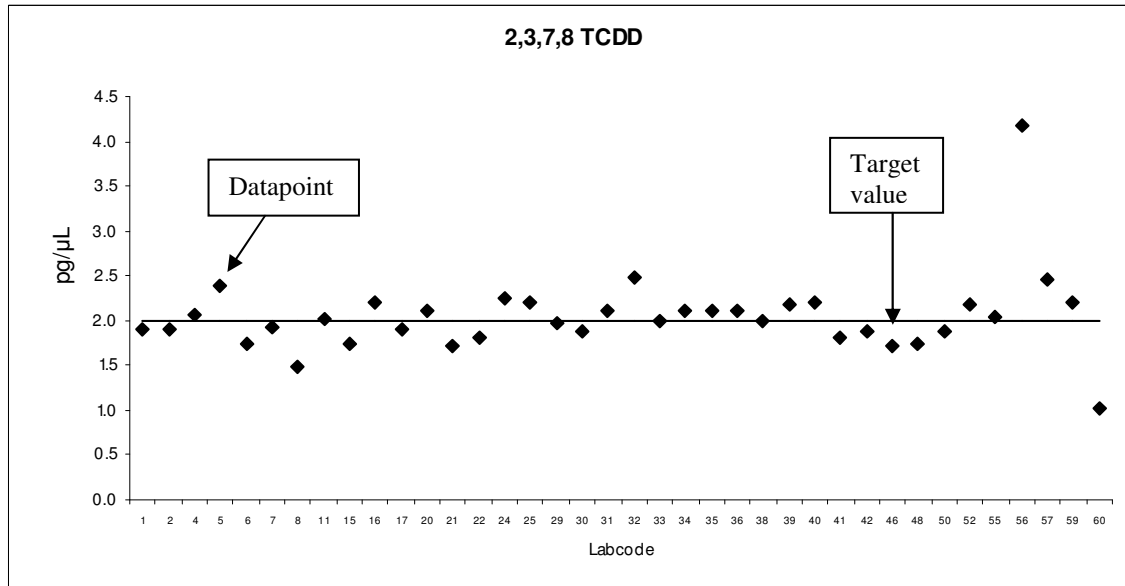
- PCDDs/PCDFs at concentrations of 2:5:10 pg/ μ l for tetra:penta-hexa-hepta:octa chlorinated dibenzodioxins/furans respectively.
- Non-ortho PCBs at concentration of 10 pg/ μ l.
- Mono-ortho PCBs and indicator PCBs at concentration of 100 pg/ μ l.
- PBDE at a concentration of 25 pg/ μ l, except BDE-209 at 100 pg/ μ l.
- α -HBCD at a concentration of 500 pg/ μ l.

These concentrations are called the congeners' target value.

For each congener, the outliers were removed and the consensus calculated according to the following procedure:

1. The median was calculated from all the reported data.
2. Values outside a range of 50 % to 150 % of this median, were defined as outliers and removed from the data set.
3. Median, mean and standard deviation were re-calculated from the remaining data. This median and mean were called consensus median and mean.

The diagram shows the target value and the reported data. Values outside a range of 50 % to 150 % of “median of all values”, were defined as outliers and are not shown in the plot.



Z-Scores of individual congeners

Z-scores of each congener were calculated for each laboratory according to the following equation:

$$z = (x - X)/\sigma$$

Where x = reported value; X = assigned value (consensus); σ = target value for standard deviation. A σ of 20% of the consensus was used, i.e. z-scores between +1 and -1 reflect a deviation of $\pm 20\%$ from the consensus value.

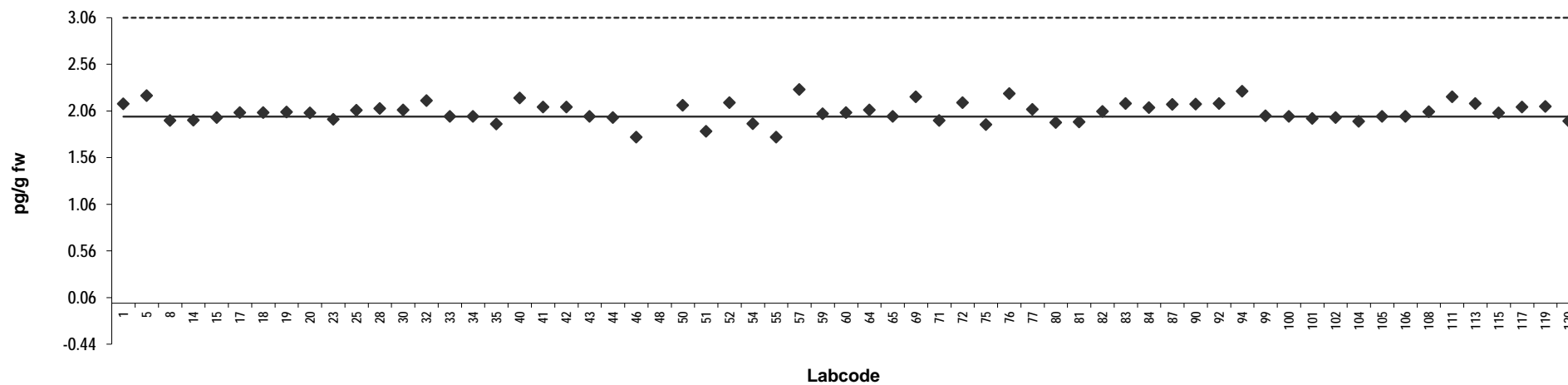
Analyte solution
Congener: 2,3,7,8 TCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2.1	0.23		87	2.1	0.22	
5	2.2	0.45		90	2.1	0.22	
8	2.0	-0.21		92	2.1	0.24	
14	2.0	-0.20		94	2.3	0.56	
15	2.0	-0.13		99	2.0	-0.083	
17	2.0	-0.00057		100	2.0	-0.10	
18	2.0	0.00057		101	2.0	-0.15	
19	2.0	0.015		102	2.0	-0.13	
20	2.0	-0.0031		104	1.9	-0.23	
23	2.0	-0.17		105	2.0	-0.10	
25	2.1	0.064		106	2.0	-0.10	
28	2.1	0.11		108	2.1	0.021	
30	2.1	0.070		111	2.2	0.41	
32	2.2	0.32		113	2.1	0.24	
33	2.0	-0.10		115	2.0	-0.0080	
34	2.0	-0.10		117	2.1	0.15	
35	1.9	-0.30		119	2.1	0.16	
40	2.2	0.39		120	2.0	-0.22	
41	2.1	0.14					
42	2.1	0.14					
43	2.0	-0.10					
44	2.0	-0.13					
46	1.8	-0.64					
48	41	95	Outlier				
50	2.1	0.19					
51	1.8	-0.49					
52	2.2	0.27					
54	1.9	-0.29					
55	1.8	-0.64					
57	2.3	0.61					
59	2.0	-0.028					
60	2.0	-0.00064					
64	2.1	0.070					
65	2.0	-0.10					
69	2.2	0.41					
71	2.0	-0.21					
72	2.2	0.27					
75	1.9	-0.31					
76	2.2	0.50					
77	2.1	0.088					
80	1.9	-0.26					
81	1.9	-0.25					
82	2.1	0.030					
83	2.1	0.24					
84	2.1	0.13					

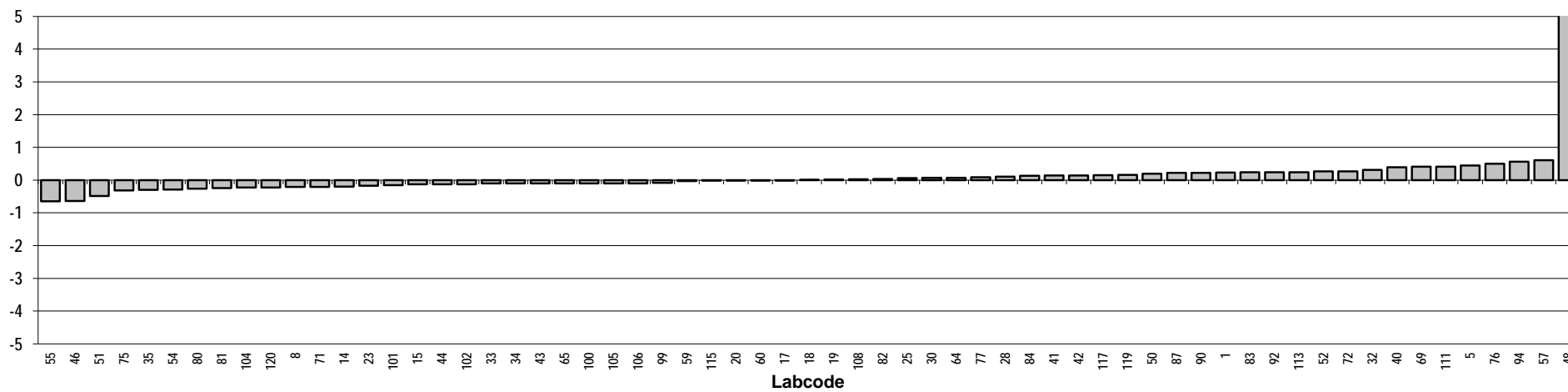
Consensus statistics

Consensus median, pg/g	2.0
Median all values pg/g	2.0
Consensus mean, pg/g	2.0
Standard deviation, pg/g	0.11
Relative standard deviation, %	5.2
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

2,3,7,8 TCDD



Z-score: 2,3,7,8 TCDD

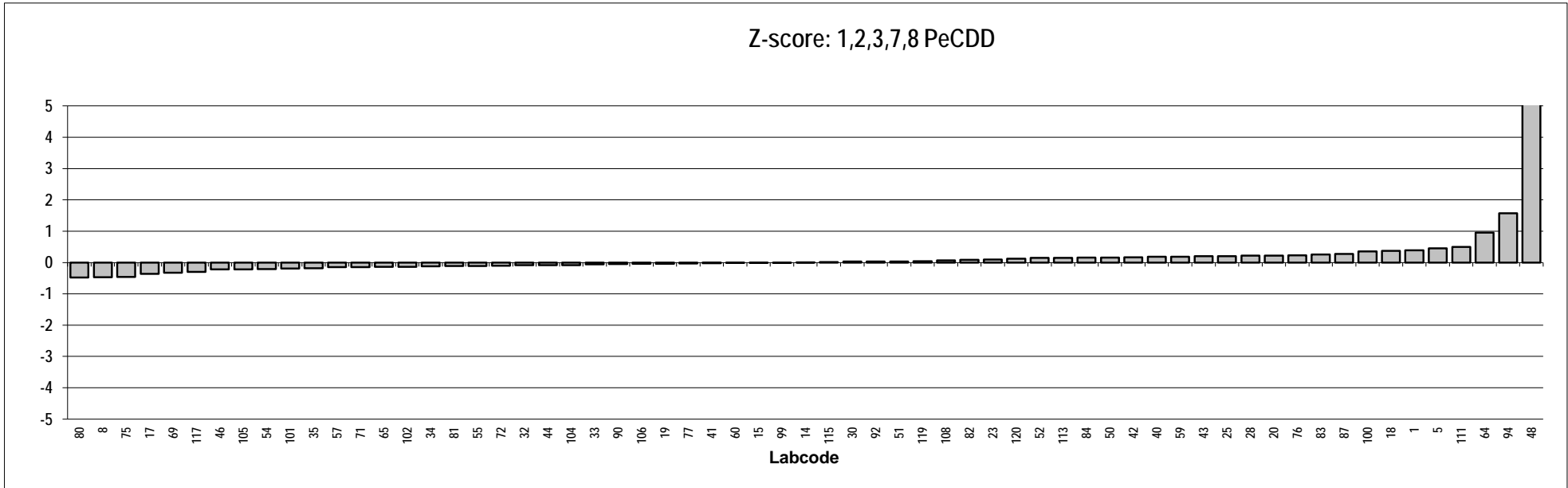
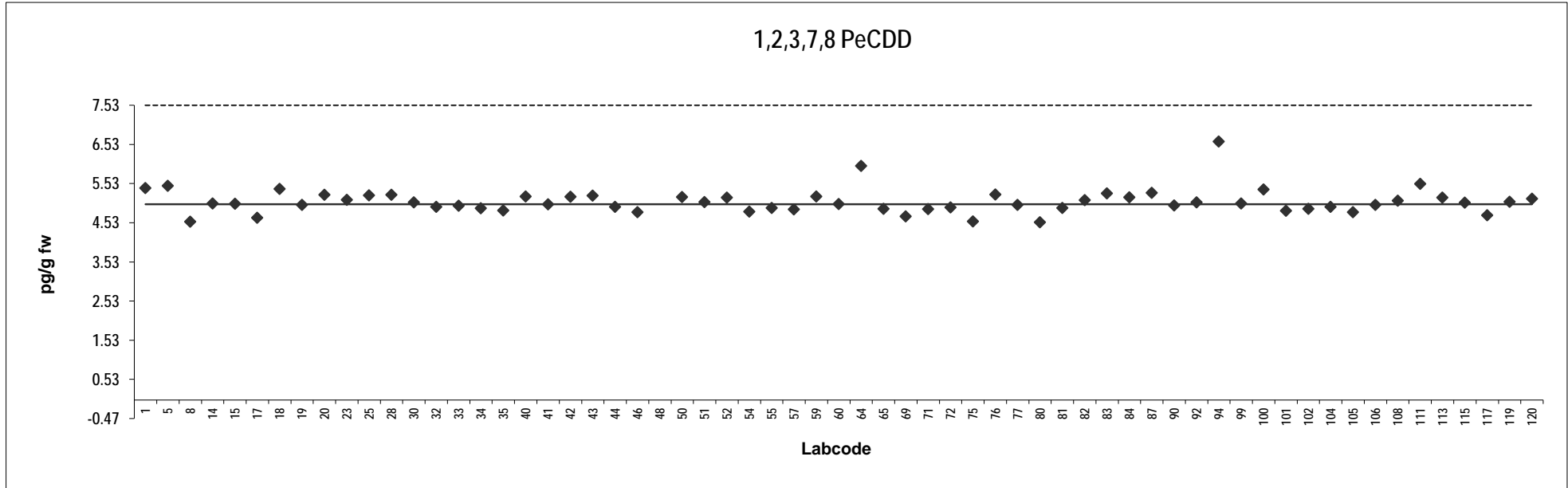


Analyte solution
Congener: 1,2,3,7,8 PeCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.4	0.39		87	5.3	0.27	
5	5.5	0.45		90	5.0	-0.053	
8	4.6	-0.47		92	5.1	0.030	
14	5.0	0.00059		94	6.6	1.6	
15	5.0	-0.0094		99	5.0	-0.00059	
17	4.7	-0.37		100	5.4	0.35	
18	5.4	0.37		101	4.8	-0.19	
19	5.0	-0.036		102	4.9	-0.14	
20	5.2	0.22		104	4.9	-0.085	
23	5.1	0.090		105	4.8	-0.22	
25	5.2	0.21		106	5.0	-0.039	
28	5.2	0.22		108	5.1	0.070	
30	5.1	0.030		111	5.5	0.50	
32	4.9	-0.089		113	5.2	0.15	
33	5.0	-0.059		115	5.0	0.018	
34	4.9	-0.12		117	4.7	-0.30	
35	4.8	-0.18		119	5.1	0.043	
40	5.2	0.18		120	5.1	0.12	
41	5.0	-0.019					
42	5.2	0.17					
43	5.2	0.20					
44	4.9	-0.089					
46	4.8	-0.22					
48	104	99	Outlier				
50	5.2	0.16					
51	5.1	0.033					
52	5.2	0.15					
54	4.8	-0.21					
55	4.9	-0.11					
57	4.9	-0.15					
59	5.2	0.18					
60	5.0	-0.012					
64	6.0	0.96					
65	4.9	-0.14					
69	4.7	-0.33					
71	4.9	-0.15					
72	4.9	-0.10					
75	4.6	-0.46					
76	5.2	0.23					
77	5.0	-0.033					
80	4.5	-0.48					
81	4.9	-0.12					
82	5.1	0.083					
83	5.3	0.26					
84	5.2	0.16					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.1
Standard deviation, pg/g	0.32
Relative standard deviation, %	6.3
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

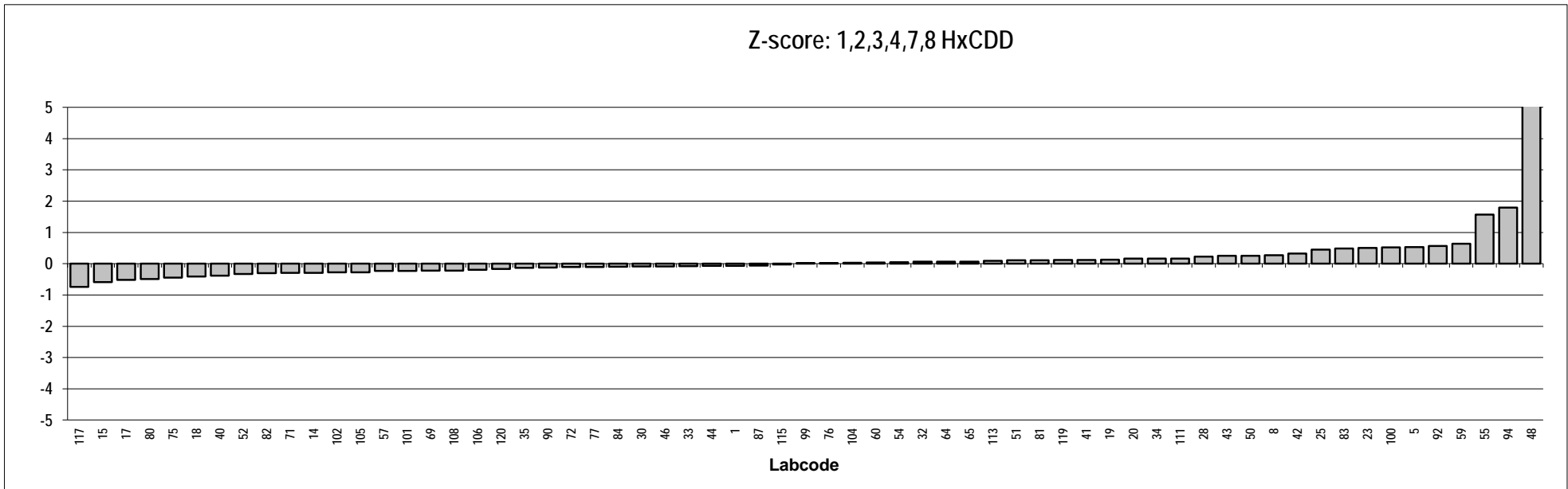
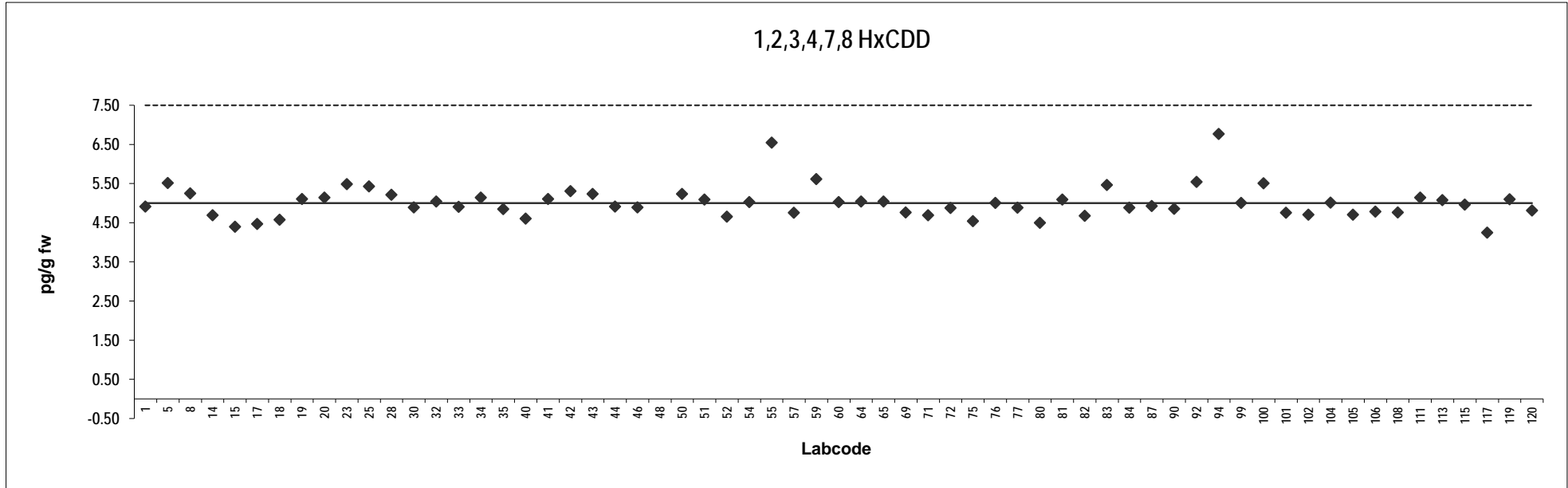


Analyte solution
Congener: 1,2,3,4,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	4.9	-0.067		87	4.9	-0.056	
5	5.5	0.53		90	4.9	-0.12	
8	5.2	0.27		92	5.5	0.56	
14	4.7	-0.29		94	6.8	1.8	
15	4.4	-0.59		99	5.0	0.022	
17	4.5	-0.52		100	5.5	0.52	
18	4.6	-0.41		101	4.8	-0.23	
19	5.1	0.12		102	4.7	-0.28	
20	5.1	0.16		104	5.0	0.033	
23	5.5	0.50		105	4.7	-0.28	
25	5.4	0.45		106	4.8	-0.20	
28	5.2	0.23		108	4.8	-0.22	
30	4.9	-0.088		111	5.1	0.16	
32	5.0	0.063		113	5.1	0.093	
33	4.9	-0.078		115	5.0	-0.022	
34	5.1	0.16		117	4.2	-0.74	
35	4.8	-0.13		119	5.1	0.12	
40	4.6	-0.38		120	4.8	-0.17	
41	5.1	0.12					
42	5.3	0.32					
43	5.2	0.25					
44	4.9	-0.068					
46	4.9	-0.088					
48	96	92	Outlier				
50	5.2	0.25					
51	5.1	0.11					
52	4.7	-0.33					
54	5.0	0.044					
55	6.5	1.6					
57	4.8	-0.23					
59	5.6	0.64					
60	5.0	0.043					
64	5.0	0.063					
65	5.0	0.063					
69	4.8	-0.22					
71	4.7	-0.29					
72	4.9	-0.10					
75	4.5	-0.45					
76	5.0	0.024					
77	4.9	-0.10					
80	4.5	-0.49					
81	5.1	0.11					
82	4.7	-0.31					
83	5.5	0.48					
84	4.9	-0.10					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	0.42
Relative standard deviation, %	8.4
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

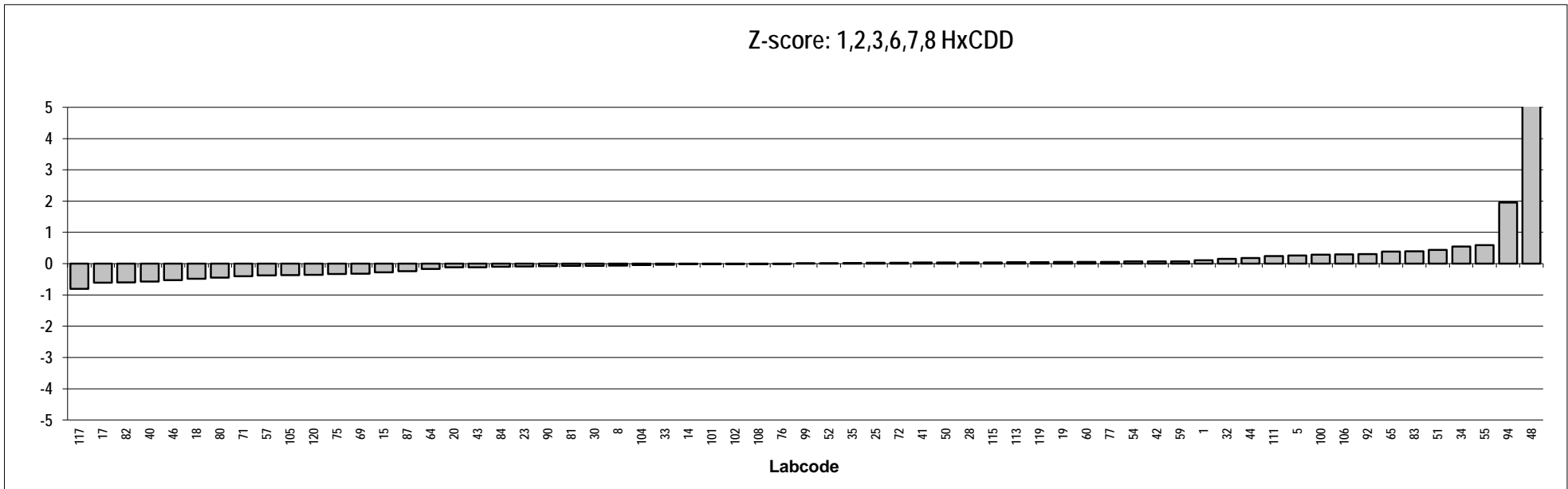
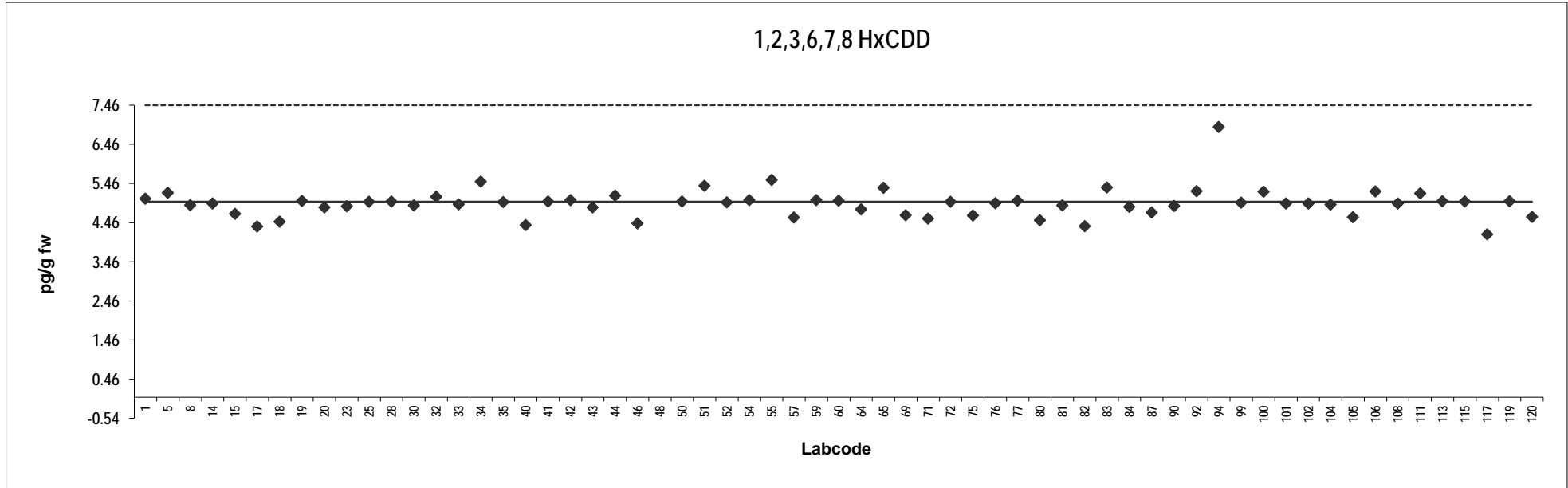


Analyte solution
Congener: 1,2,3,6,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.1	0.11		87	4.7	-0.24	
5	5.2	0.26		90	4.9	-0.080	
8	4.9	-0.058		92	5.3	0.31	
14	5.0	-0.017		94	6.9	2.0	
15	4.7	-0.28		99	5.0	0.0087	
17	4.4	-0.61		100	5.3	0.29	
18	4.5	-0.48		101	5.0	-0.017	
19	5.0	0.053		102	5.0	-0.017	
20	4.9	-0.12		104	4.9	-0.045	
23	4.9	-0.087		105	4.6	-0.37	
25	5.0	0.029		106	5.3	0.30	
28	5.0	0.037		108	5.0	-0.017	
30	4.9	-0.067		111	5.2	0.24	
32	5.1	0.15		113	5.0	0.044	
33	4.9	-0.037		115	5.0	0.039	
34	5.5	0.55		117	4.2	-0.81	
35	5.0	0.018		119	5.0	0.044	
40	4.4	-0.57		120	4.6	-0.36	
41	5.0	0.034					
42	5.0	0.074					
43	4.9	-0.12					
44	5.2	0.18					
46	4.4	-0.53					
48	94	90	Outlier				
50	5.0	0.034					
51	5.4	0.44					
52	5.0	0.013					
54	5.0	0.070					
55	5.6	0.59					
57	4.6	-0.38					
59	5.0	0.074					
60	5.0	0.056					
64	4.8	-0.17					
65	5.4	0.39					
69	4.7	-0.32					
71	4.6	-0.40					
72	5.0	0.031					
75	4.6	-0.33					
76	5.0	-0.0087					
77	5.0	0.057					
80	4.5	-0.45					
81	4.9	-0.069					
82	4.4	-0.60					
83	5.4	0.40					
84	4.9	-0.098					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	0.38
Relative standard deviation, %	7.7
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0



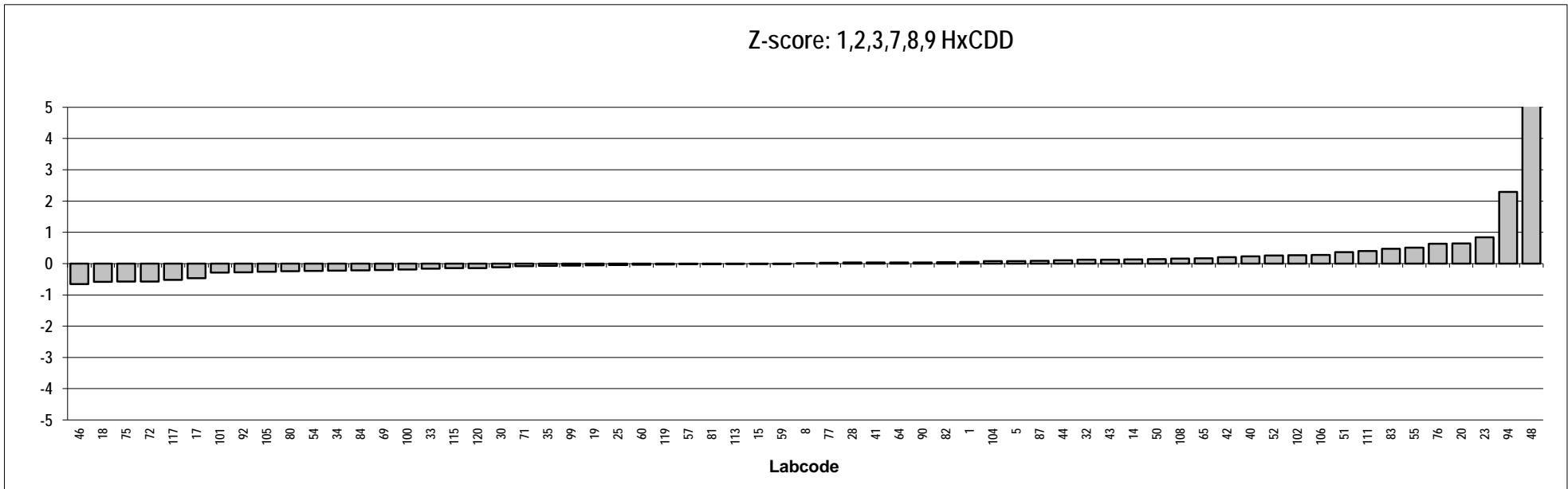
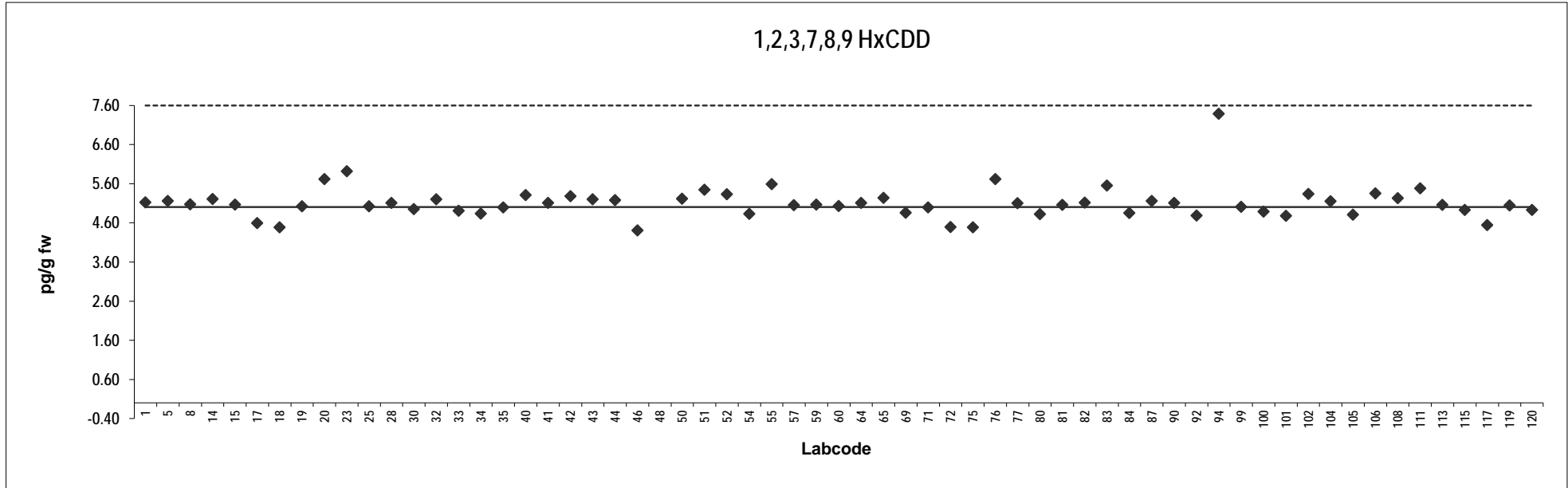
Analyte solution

Congener: 1,2,3,7,8,9 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.1	0.049		87	5.2	0.087	
5	5.1	0.083		90	5.1	0.039	
8	5.1	0.0021		92	4.8	-0.28	
14	5.2	0.14		94	7.4	2.3	
15	5.1	-0.0021		99	5.0	-0.063	
17	4.6	-0.47		100	4.9	-0.18	
18	4.5	-0.58		101	4.8	-0.29	
19	5.0	-0.050		102	5.3	0.26	
20	5.7	0.64		104	5.1	0.077	
23	5.9	0.84		105	4.8	-0.26	
25	5.0	-0.049		106	5.3	0.27	
28	5.1	0.036		108	5.2	0.16	
30	4.9	-0.12		111	5.5	0.40	
32	5.2	0.13		113	5.1	-0.012	
33	4.9	-0.16		115	4.9	-0.14	
34	4.8	-0.23		117	4.5	-0.52	
35	5.0	-0.073		119	5.0	-0.029	
40	5.3	0.23		120	4.9	-0.14	
41	5.1	0.037					
42	5.3	0.21					
43	5.2	0.13					
44	5.2	0.11					
46	4.4	-0.65					
48	98	92	Outlier				
50	5.2	0.15					
51	5.4	0.37					
52	5.3	0.25					
54	4.8	-0.24					
55	5.6	0.51					
57	5.0	-0.022					
59	5.1	-0.0021					
60	5.0	-0.040					
64	5.1	0.037					
65	5.2	0.17					
69	4.9	-0.21					
71	5.0	-0.079					
72	4.5	-0.57					
75	4.5	-0.58					
76	5.7	0.63					
77	5.1	0.027					
80	4.8	-0.24					
81	5.0	-0.015					
82	5.1	0.047					
83	5.5	0.47					
84	4.8	-0.22					

Consensus statistics

Consensus median, pg/g	5.1
Median all values pg/g	5.1
Consensus mean, pg/g	5.1
Standard deviation, pg/g	0.42
Relative standard deviation, %	8.2
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

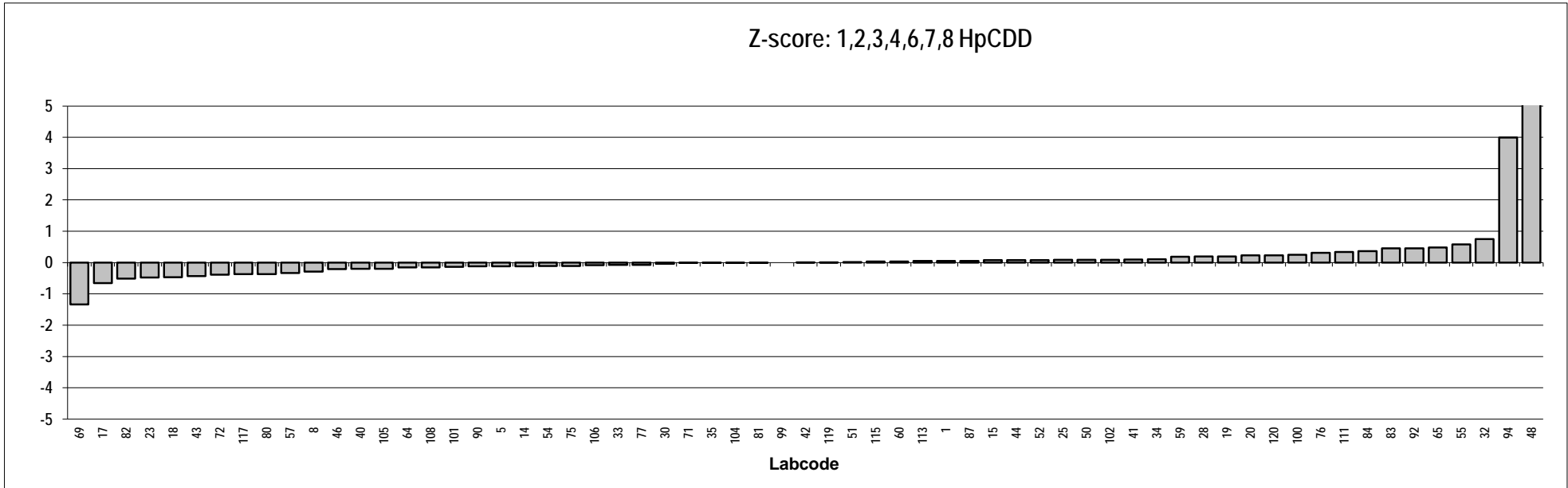
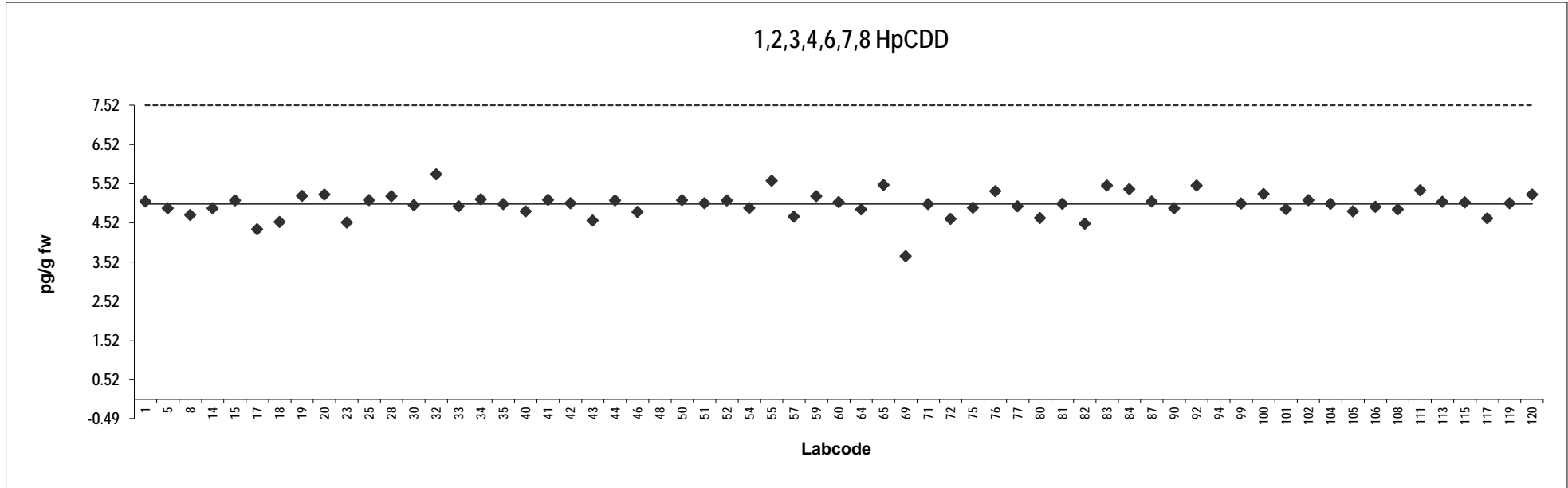


Analyte solution
Congener: 1,2,3,4,6,7,8 HpCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.1	0.049		87	5.1	0.052	
5	4.9	-0.12		90	4.9	-0.12	
8	4.7	-0.29		92	5.5	0.46	
14	4.9	-0.12		94	9.0	4.0	Outlier
15	5.1	0.078		99	5.0	0.00	
17	4.3	-0.66		100	5.3	0.25	
18	4.5	-0.47		101	4.9	-0.14	
19	5.2	0.20		102	5.1	0.088	
20	5.2	0.23		104	5.0	-0.0049	
23	4.5	-0.48		105	4.8	-0.20	
25	5.1	0.086		106	4.9	-0.082	
28	5.2	0.19		108	4.9	-0.15	
30	5.0	-0.042		111	5.3	0.34	
32	5.8	0.75		113	5.1	0.048	
33	4.9	-0.072		115	5.0	0.030	
34	5.1	0.11		117	4.6	-0.37	
35	5.0	-0.011		119	5.0	0.0094	
40	4.8	-0.20		120	5.2	0.23	
41	5.1	0.098					
42	5.0	0.0084					
43	4.6	-0.43					
44	5.1	0.078					
46	4.8	-0.21					
48	94	89	Outlier				
50	5.1	0.088					
51	5.0	0.011					
52	5.1	0.078					
54	4.9	-0.11					
55	5.6	0.58					
57	4.7	-0.33					
59	5.2	0.19					
60	5.0	0.035					
64	4.9	-0.15					
65	5.5	0.48					
69	3.7	-1.3					
71	5.0	-0.015					
72	4.6	-0.39					
75	4.9	-0.11					
76	5.3	0.31					
77	4.9	-0.071					
80	4.6	-0.37					
81	5.0	-0.0015					
82	4.5	-0.51					
83	5.5	0.46					
84	5.4	0.37					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	0.32
Relative standard deviation, %	6.5
No. of values reported	63
No. of values removed	2
No. of reported non-detects	0



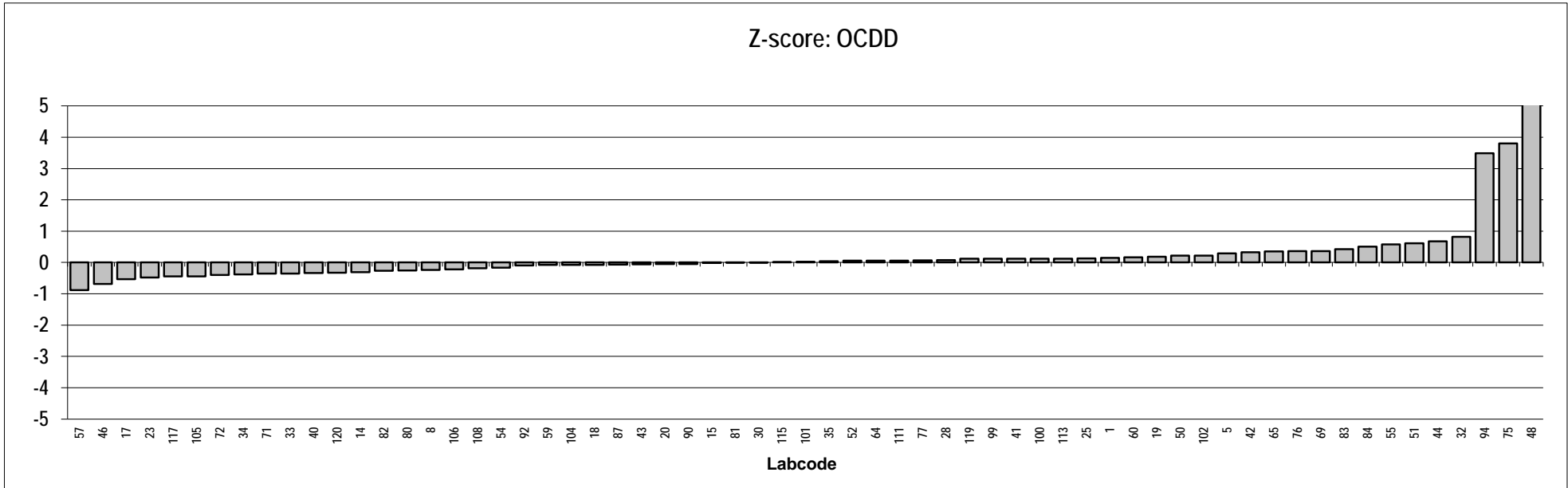
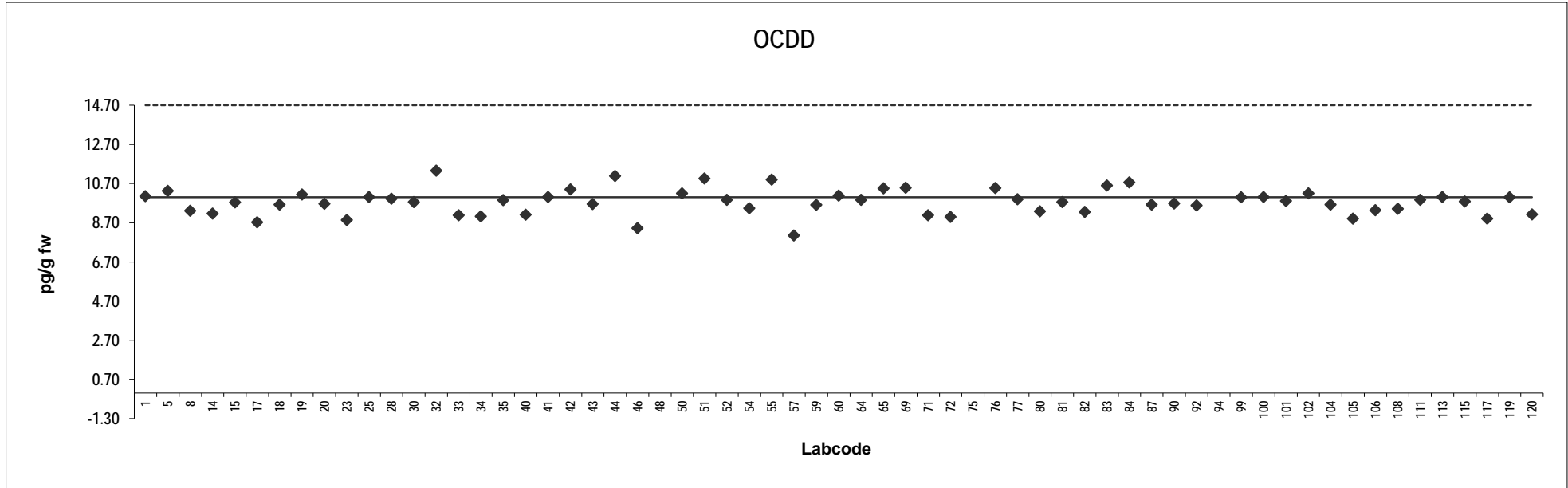
Analyte solution

Congener: OCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	10	0.15		87	9.6	-0.071	
5	10	0.29		90	9.7	-0.047	
8	9.3	-0.23		92	9.6	-0.094	
14	9.2	-0.31		94	17	3.5	Outlier
15	9.7	-0.013		99	10	0.12	
17	8.7	-0.54		100	10	0.12	
18	9.6	-0.076		101	9.8	0.018	
19	10	0.19		102	10	0.22	
20	9.7	-0.054		104	9.6	-0.076	
23	8.8	-0.48		105	8.9	-0.44	
25	10	0.13		106	9.3	-0.22	
28	9.9	0.078		108	9.4	-0.18	
30	9.8	-0.0074		111	9.9	0.054	
32	11	0.82		113	10	0.12	
33	9.1	-0.36		115	9.8	0.0074	
34	9.0	-0.38		117	8.9	-0.44	
35	9.8	0.042		119	10	0.12	
40	9.1	-0.34		120	9.1	-0.33	
41	10	0.12					
42	10	0.33					
43	9.7	-0.059					
44	11	0.67					
46	8.4	-0.69					
48	201	98	Outlier				
50	10	0.22					
51	11	0.61					
52	9.9	0.054					
54	9.4	-0.17					
55	11	0.58					
57	8.0	-0.88					
59	9.6	-0.079					
60	10	0.16					
64	9.9	0.054					
65	10	0.35					
69	10	0.37					
71	9.1	-0.36					
72	9.0	-0.40					
75	17	3.8	Outlier				
76	10	0.36					
77	9.9	0.066					
80	9.3	-0.25					
81	9.7	-0.0079					
82	9.3	-0.26					
83	11	0.42					
84	11	0.51					

Consensus statistics

Consensus median, pg/g	9.8
Median all values pg/g	9.8
Consensus mean, pg/g	9.7
Standard deviation, pg/g	0.65
Relative standard deviation, %	6.7
No. of values reported	63
No. of values removed	3
No. of reported non-detects	0



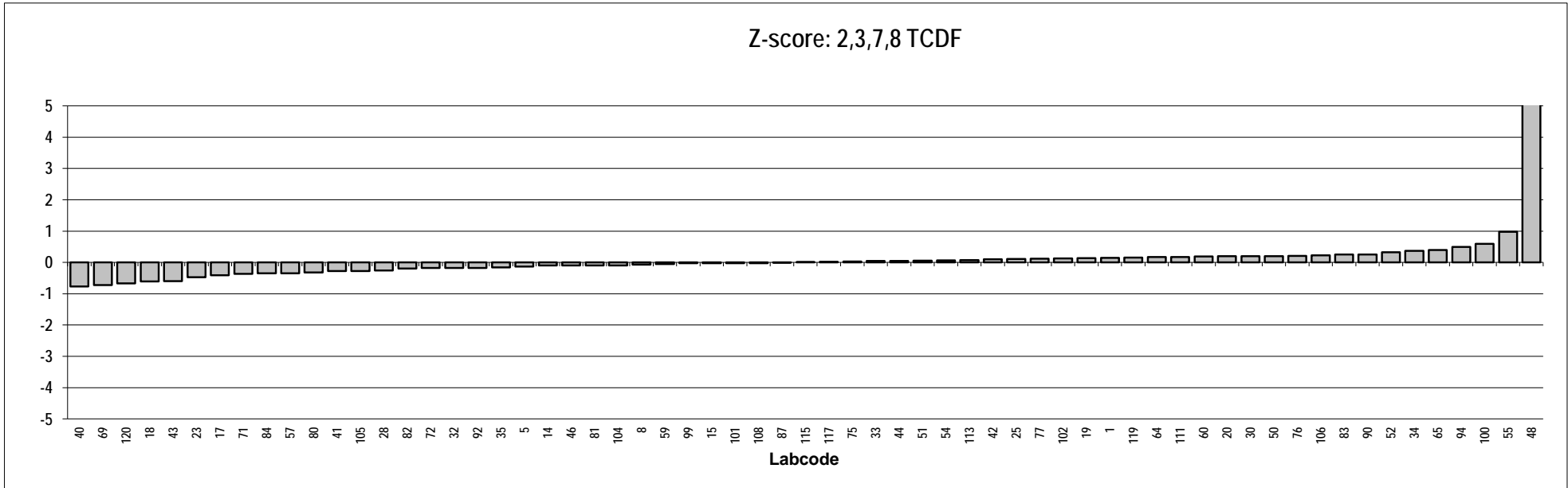
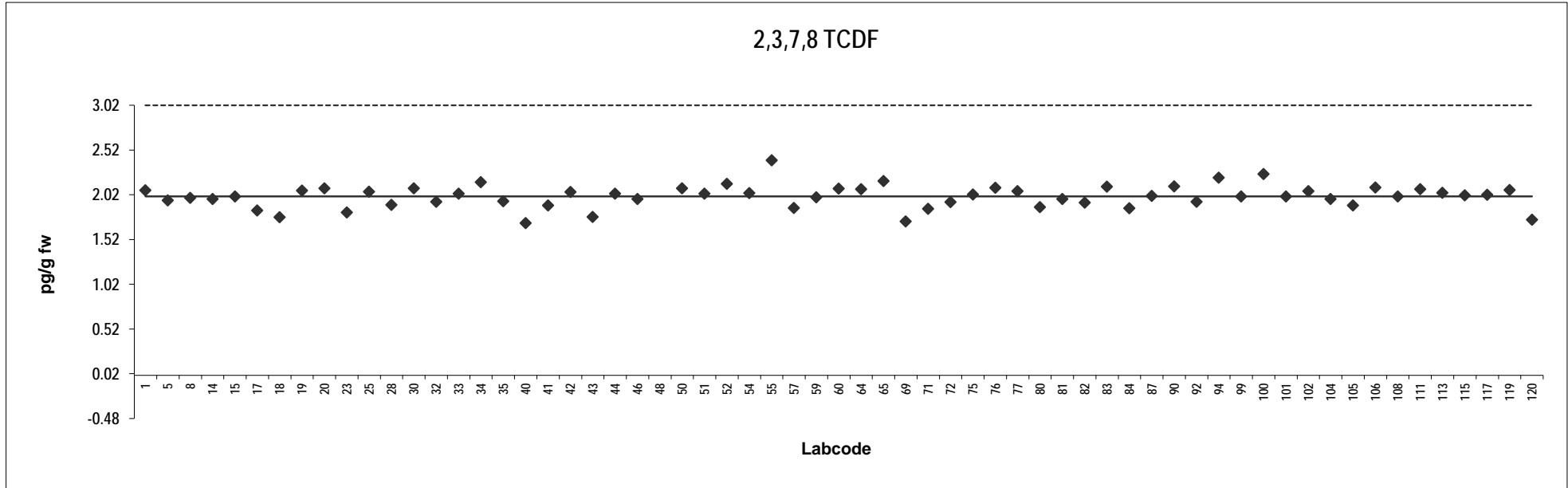
Analyte solution

Congener: 2,3,7,8 TCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2.1	0.14		87	2.0	-0.0079	
5	2.0	-0.14		90	2.1	0.25	
8	2.0	-0.067		92	1.9	-0.17	
14	2.0	-0.099		94	2.2	0.50	
15	2.0	-0.024		99	2.0	-0.025	
17	1.8	-0.41		100	2.3	0.60	
18	1.8	-0.60		101	2.0	-0.024	
19	2.1	0.14		102	2.1	0.12	
20	2.1	0.20		104	2.0	-0.093	
23	1.8	-0.47		105	1.9	-0.27	
25	2.1	0.11		106	2.1	0.22	
28	1.9	-0.26		108	2.0	-0.024	
30	2.1	0.20		111	2.1	0.17	
32	1.9	-0.17		113	2.0	0.075	
33	2.0	0.050		115	2.0	0.0079	
34	2.2	0.37		117	2.0	0.021	
35	1.9	-0.16		119	2.1	0.15	
40	1.7	-0.77		120	1.7	-0.67	
41	1.9	-0.27					
42	2.1	0.10					
43	1.8	-0.60					
44	2.0	0.050					
46	2.0	-0.099					
48	43	101	Outlier				
50	2.1	0.20					
51	2.0	0.052					
52	2.1	0.32					
54	2.0	0.065					
55	2.4	0.98					
57	1.9	-0.35					
59	2.0	-0.049					
60	2.1	0.19					
64	2.1	0.17					
65	2.2	0.40					
69	1.7	-0.72					
71	1.9	-0.37					
72	1.9	-0.18					
75	2.0	0.028					
76	2.1	0.21					
77	2.1	0.12					
80	1.9	-0.32					
81	2.0	-0.099					
82	1.9	-0.19					
83	2.1	0.25					
84	1.9	-0.35					

Consensus statistics

Consensus median, pg/g	2.0
Median all values pg/g	2.0
Consensus mean, pg/g	2.0
Standard deviation, pg/g	0.13
Relative standard deviation, %	6.4
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

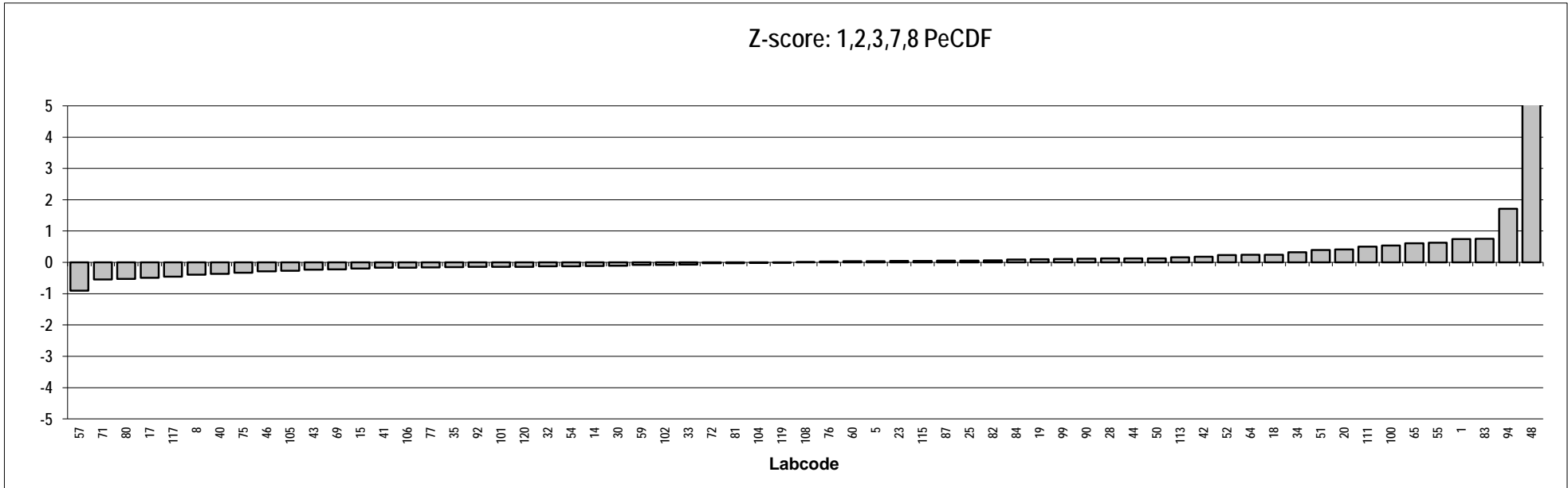
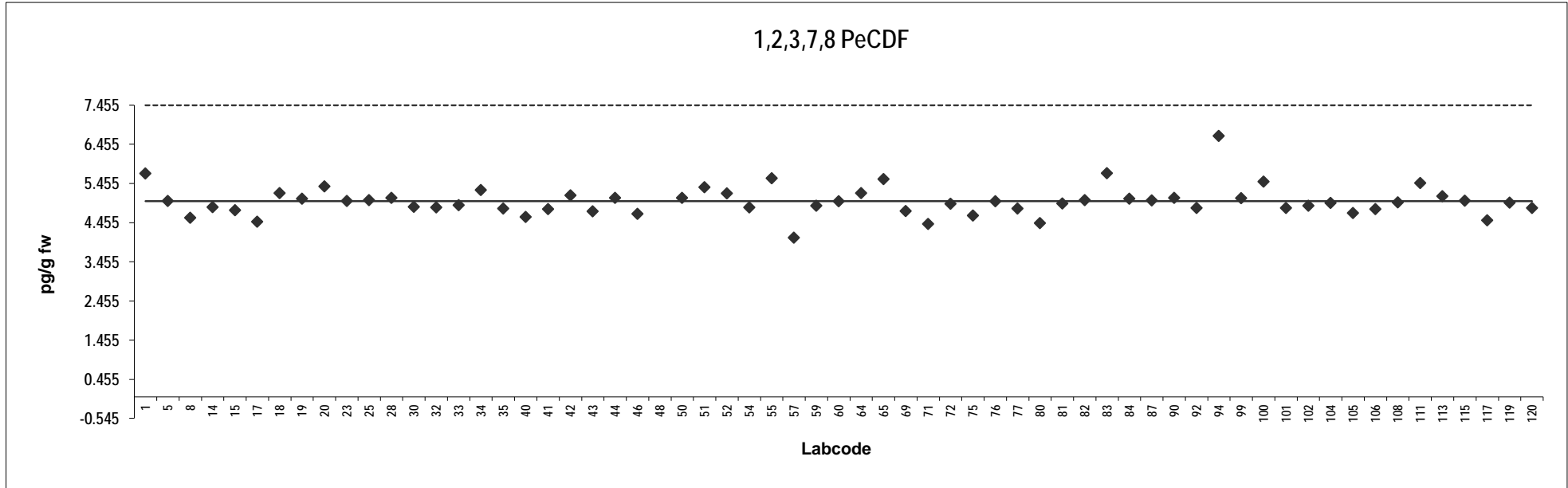


Analyte solution
Congener: 1,2,3,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.7	0.74		87	5.0	0.055	
5	5.0	0.037		90	5.1	0.12	
8	4.6	-0.39		92	4.8	-0.14	
14	4.9	-0.12		94	6.7	1.7	
15	4.8	-0.20		99	5.1	0.11	
17	4.5	-0.49		100	5.5	0.53	
18	5.2	0.24		101	4.8	-0.14	
19	5.1	0.094		102	4.9	-0.079	
20	5.4	0.41		104	5.0	-0.014	
23	5.0	0.042		105	4.7	-0.27	
25	5.0	0.058		106	4.8	-0.17	
28	5.1	0.12		108	5.0	0.0015	
30	4.9	-0.11		111	5.5	0.50	
32	4.8	-0.13		113	5.1	0.16	
33	4.9	-0.069		115	5.0	0.049	
34	5.3	0.32		117	4.5	-0.46	
35	4.8	-0.15		119	5.0	-0.0015	
40	4.6	-0.37		120	4.8	-0.14	
41	4.8	-0.17					
42	5.2	0.18					
43	4.7	-0.23					
44	5.1	0.12					
46	4.7	-0.29					
48	95	91	Outlier				
50	5.1	0.12					
51	5.4	0.40					
52	5.2	0.23					
54	4.8	-0.13					
55	5.6	0.63					
57	4.1	-0.90					
59	4.9	-0.079					
60	5.0	0.036					
64	5.2	0.24					
65	5.6	0.61					
69	4.8	-0.22					
71	4.4	-0.55					
72	4.9	-0.029					
75	4.6	-0.34					
76	5.0	0.031					
77	4.8	-0.16					
80	4.4	-0.53					
81	4.9	-0.025					
82	5.0	0.064					
83	5.7	0.76					
84	5.1	0.094					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	0.38
Relative standard deviation, %	7.6
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

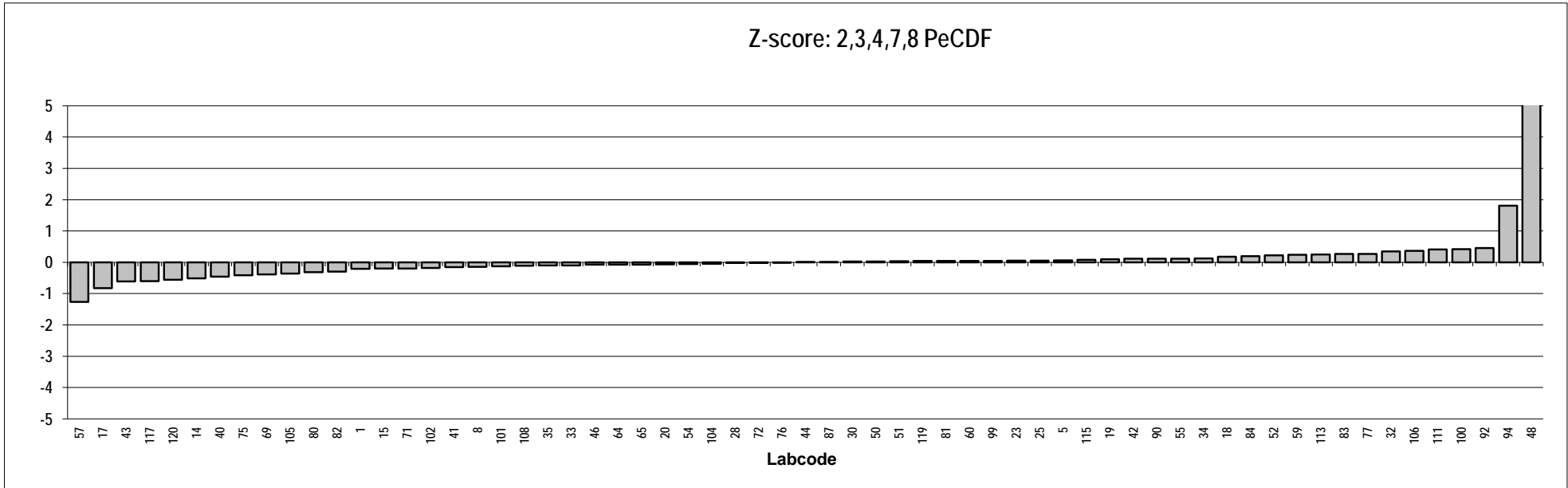
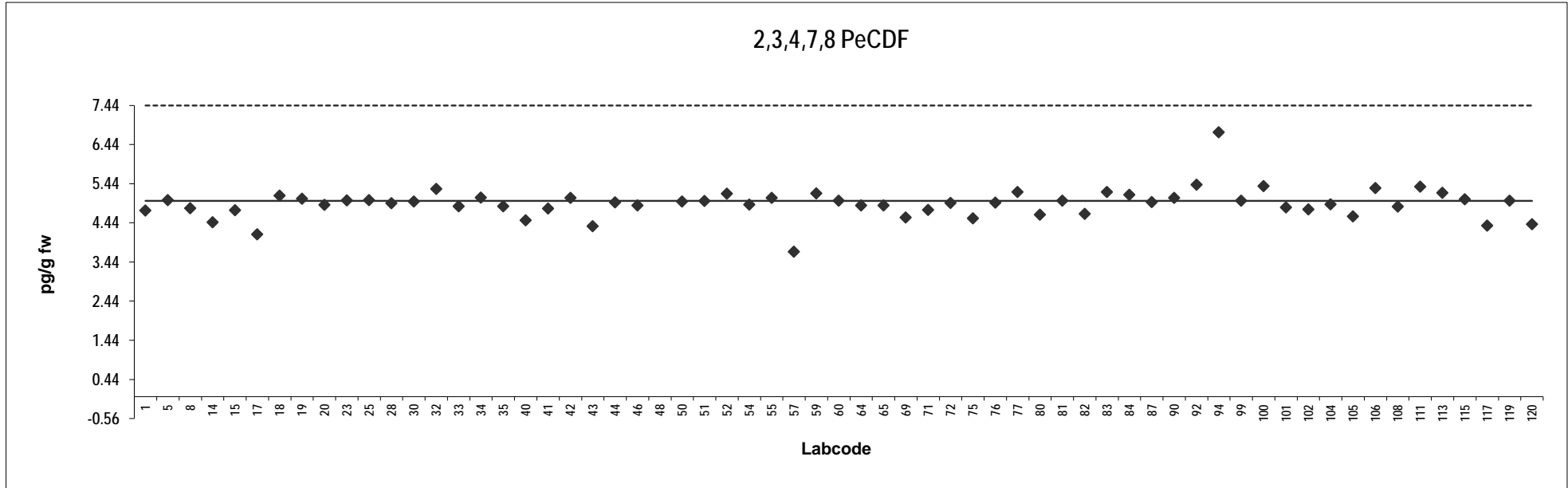


Analyte solution
Congener: 2,3,4,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	4.8	-0.21		87	5.0	0.0094	
5	5.0	0.058		90	5.1	0.12	
8	4.8	-0.15		92	5.4	0.46	
14	4.5	-0.51		94	6.8	1.8	
15	4.8	-0.20		99	5.0	0.047	
17	4.1	-0.82		100	5.4	0.42	
18	5.1	0.18		101	4.8	-0.13	
19	5.1	0.096		102	4.8	-0.18	
20	4.9	-0.067		104	4.9	-0.049	
23	5.0	0.054		105	4.6	-0.36	
25	5.0	0.056		106	5.3	0.37	
28	4.9	-0.020		108	4.9	-0.11	
30	5.0	0.024		111	5.4	0.41	
32	5.3	0.35		113	5.2	0.25	
33	4.9	-0.097		115	5.0	0.079	
34	5.1	0.13		117	4.4	-0.60	
35	4.9	-0.10		119	5.0	0.044	
40	4.5	-0.46		120	4.4	-0.56	
41	4.8	-0.16					
42	5.1	0.12					
43	4.4	-0.61					
44	5.0	0.0040					
46	4.9	-0.077					
48	103	99	Outlier				
50	5.0	0.024					
51	5.0	0.038					
52	5.2	0.23					
54	4.9	-0.056					
55	5.1	0.12					
57	3.7	-1.3					
59	5.2	0.24					
60	5.0	0.046					
64	4.9	-0.077					
65	4.9	-0.077					
69	4.6	-0.39					
71	4.8	-0.20					
72	4.9	-0.016					
75	4.5	-0.41					
76	5.0	-0.0040					
77	5.2	0.27					
80	4.6	-0.31					
81	5.0	0.044					
82	4.7	-0.30					
83	5.2	0.27					
84	5.1	0.19					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	4.9
Standard deviation, pg/g	0.39
Relative standard deviation, %	7.8
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

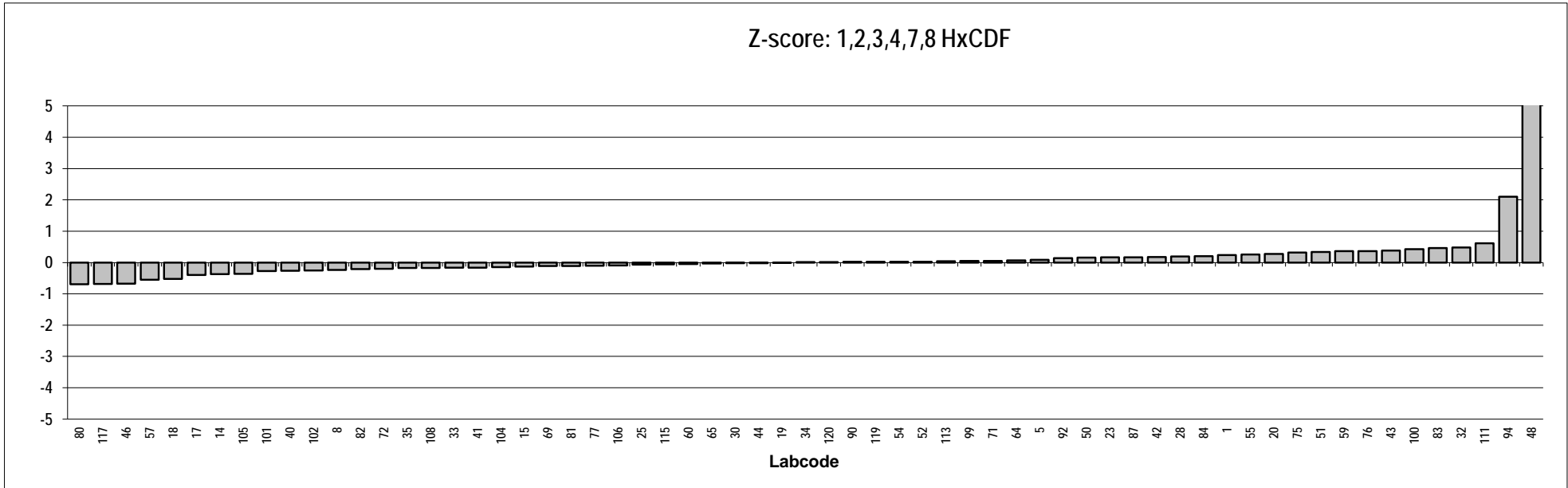
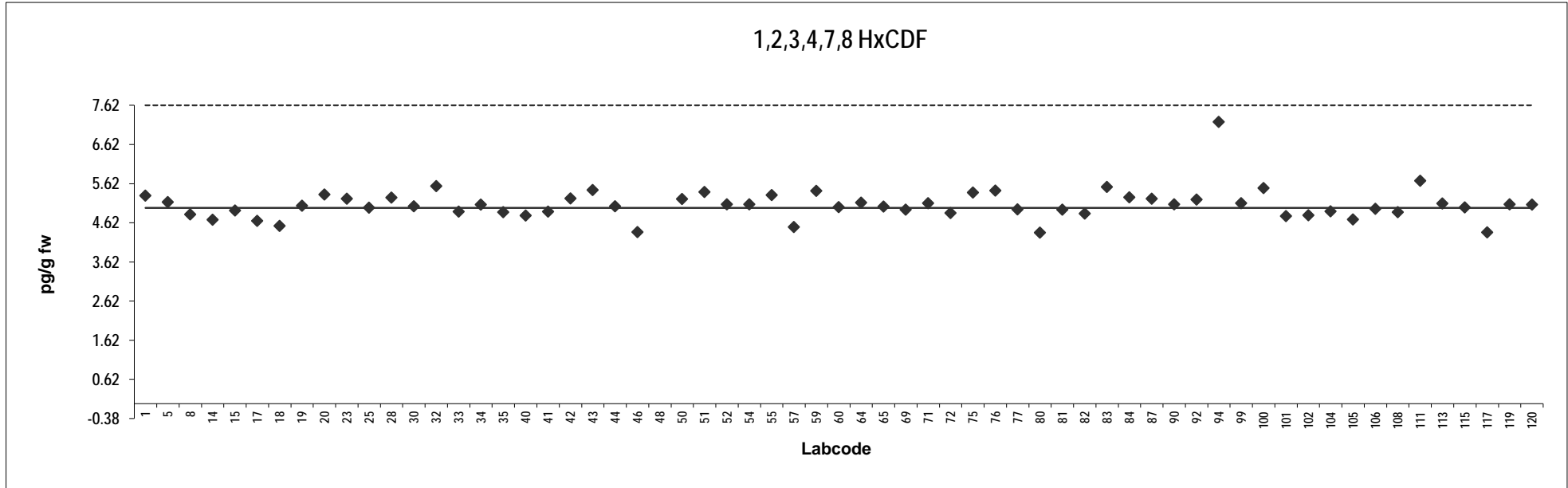


Analyte solution
Congener: 1,2,3,4,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.3	0.24		87	5.2	0.17	
5	5.1	0.082		90	5.1	0.020	
8	4.8	-0.23		92	5.2	0.14	
14	4.7	-0.37		94	7.2	2.1	
15	4.9	-0.13		99	5.1	0.049	
17	4.7	-0.40		100	5.5	0.43	
18	4.5	-0.52		101	4.8	-0.27	
19	5.0	-0.016		102	4.8	-0.25	
20	5.3	0.27		104	4.9	-0.15	
23	5.2	0.16		105	4.7	-0.36	
25	5.0	-0.065		106	5.0	-0.093	
28	5.3	0.19		108	4.9	-0.17	
30	5.0	-0.024		111	5.7	0.62	
32	5.6	0.48		113	5.1	0.045	
33	4.9	-0.16		115	5.0	-0.053	
34	5.1	0.016		117	4.4	-0.69	
35	4.9	-0.18		119	5.1	0.022	
40	4.8	-0.26		120	5.1	0.016	
41	4.9	-0.16					
42	5.2	0.17					
43	5.5	0.38					
44	5.0	-0.024					
46	4.4	-0.68					
48	98	92	Outlier				
50	5.2	0.15					
51	5.4	0.33					
52	5.1	0.026					
54	5.1	0.025					
55	5.3	0.25					
57	4.5	-0.55					
59	5.4	0.36					
60	5.0	-0.050					
64	5.1	0.065					
65	5.0	-0.034					
69	5.0	-0.11					
71	5.1	0.051					
72	4.9	-0.20					
75	5.4	0.32					
76	5.4	0.37					
77	5.0	-0.10					
80	4.4	-0.69					
81	5.0	-0.11					
82	4.8	-0.21					
83	5.5	0.46					
84	5.3	0.20					

Consensus statistics

Consensus median, pg/g	5.1
Median all values pg/g	5.1
Consensus mean, pg/g	5.1
Standard deviation, pg/g	0.40
Relative standard deviation, %	7.8
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

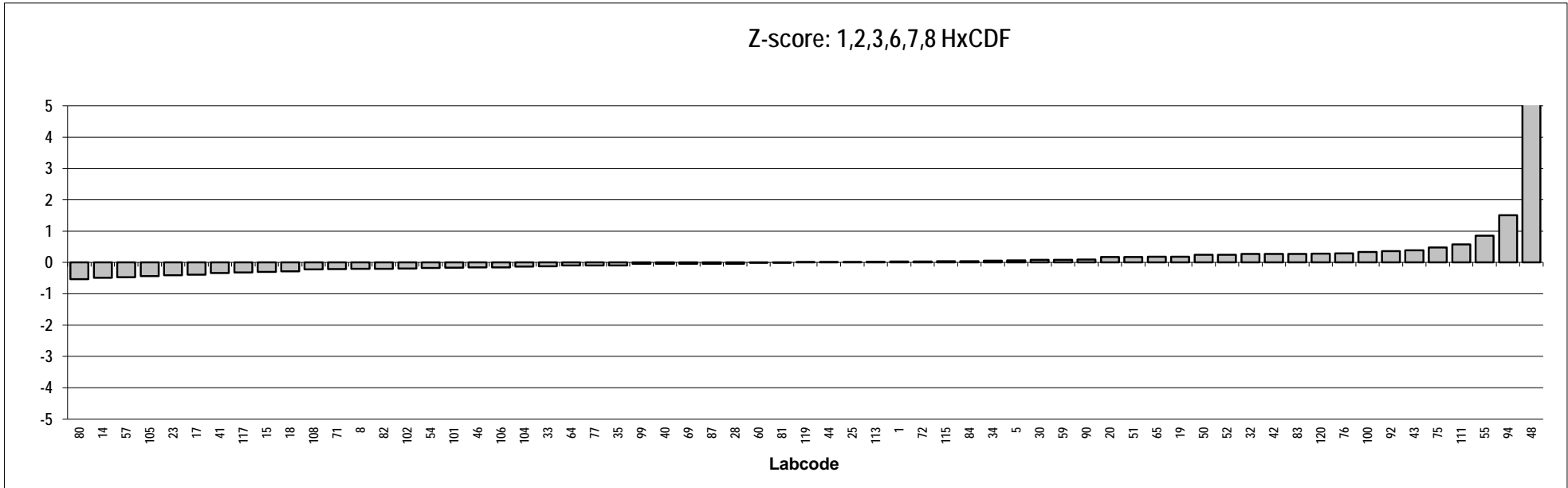
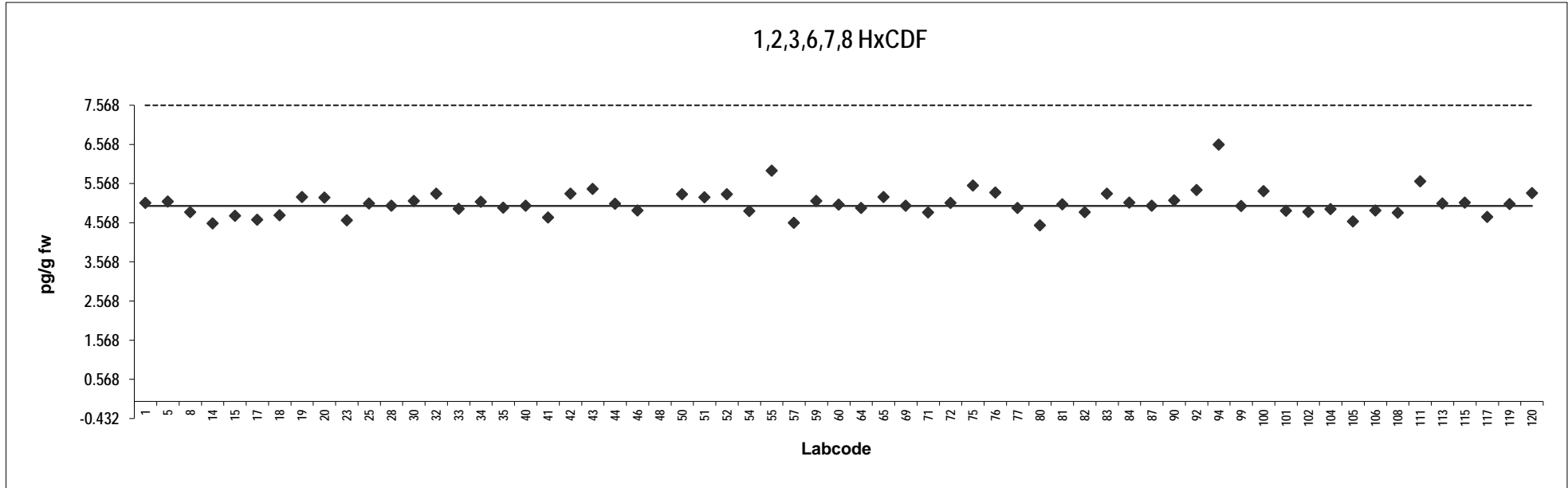


Analyte solution
Congener: 1,2,3,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.1	0.029		87	5.0	-0.039	
5	5.1	0.064		90	5.1	0.094	
8	4.8	-0.20		92	5.4	0.36	
14	4.6	-0.49		94	6.6	1.5	
15	4.7	-0.30		99	5.0	-0.044	
17	4.6	-0.39		100	5.4	0.33	
18	4.8	-0.28		101	4.9	-0.17	
19	5.2	0.18		102	4.8	-0.20	
20	5.2	0.17		104	4.9	-0.13	
23	4.6	-0.41		105	4.6	-0.44	
25	5.1	0.015		106	4.9	-0.16	
28	5.0	-0.038		108	4.8	-0.22	
30	5.1	0.080		111	5.6	0.58	
32	5.3	0.27		113	5.1	0.021	
33	4.9	-0.12		115	5.1	0.041	
34	5.1	0.060		117	4.7	-0.32	
35	4.9	-0.092		119	5.0	0.0061	
40	5.0	-0.039		120	5.3	0.28	
41	4.7	-0.34					
42	5.3	0.27					
43	5.4	0.39					
44	5.1	0.011					
46	4.9	-0.16					
48	102	96	Outlier				
50	5.3	0.25					
51	5.2	0.17					
52	5.3	0.25					
54	4.9	-0.17					
55	5.9	0.85					
57	4.6	-0.48					
59	5.1	0.080					
60	5.0	-0.0086					
64	4.9	-0.098					
65	5.2	0.18					
69	5.0	-0.039					
71	4.8	-0.21					
72	5.1	0.033					
75	5.5	0.47					
76	5.3	0.29					
77	4.9	-0.094					
80	4.5	-0.53					
81	5.0	-0.0061					
82	4.8	-0.20					
83	5.3	0.27					
84	5.1	0.042					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.1
Standard deviation, pg/g	0.33
Relative standard deviation, %	6.6
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

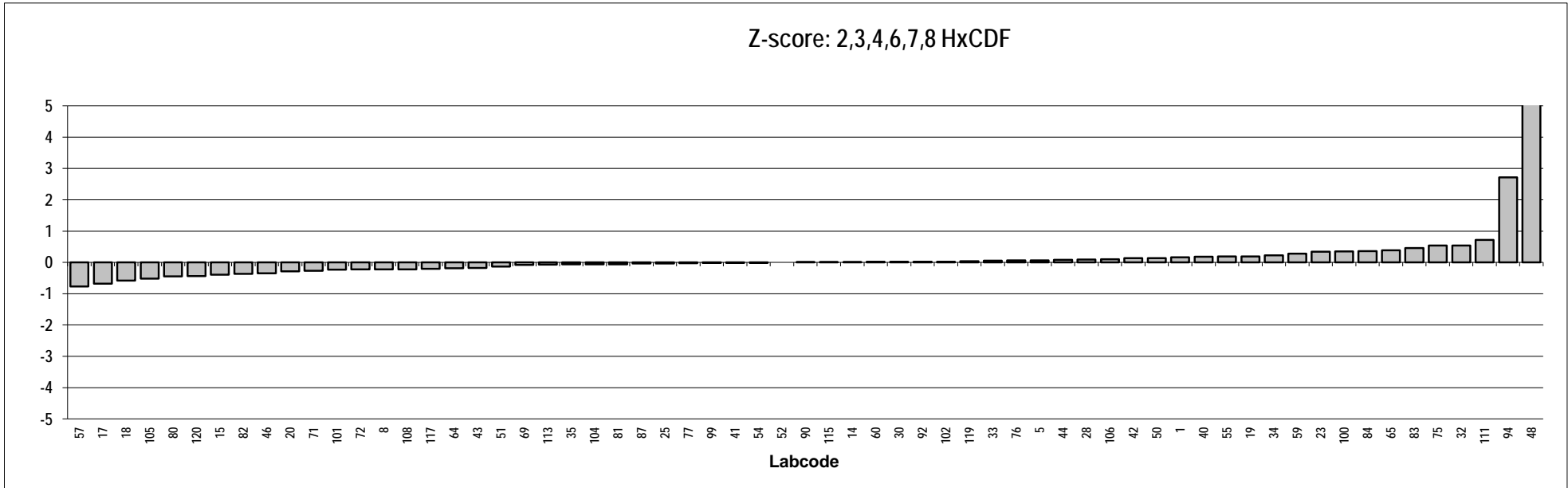
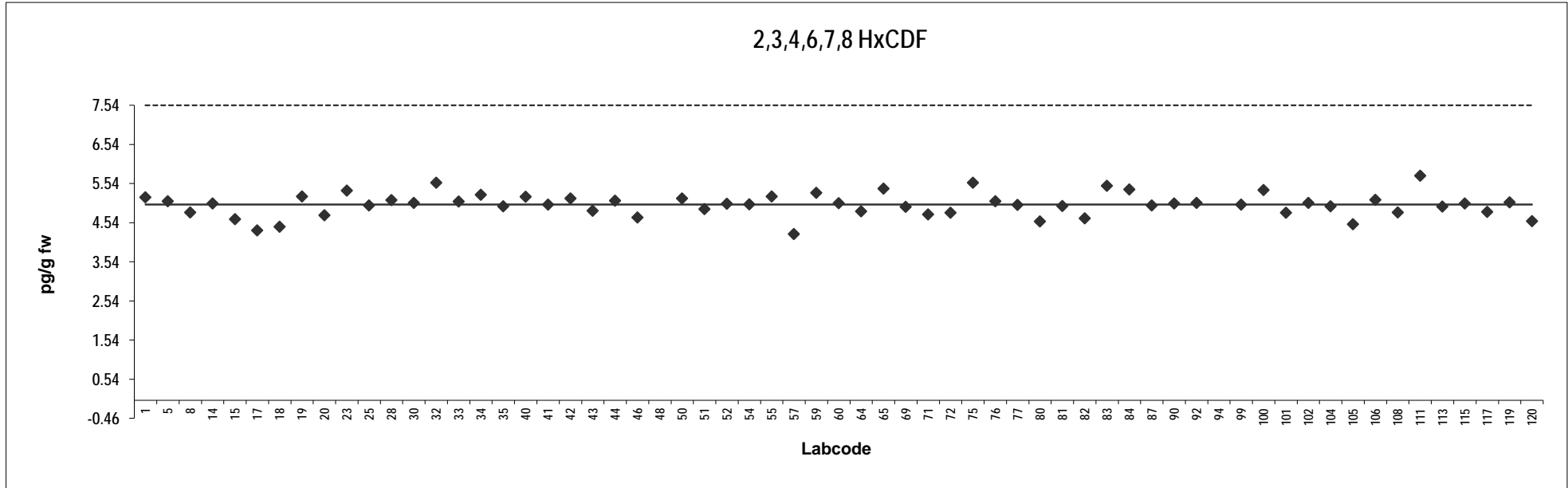


Analyte solution
Congener: 2,3,4,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.2	0.16		87	5.0	-0.038	
5	5.1	0.069		90	5.0	0.0068	
8	4.8	-0.22		92	5.0	0.020	
14	5.0	0.010		94	7.8	2.7	Outlier
15	4.6	-0.39		99	5.0	-0.021	
17	4.3	-0.68		100	5.4	0.35	
18	4.4	-0.58		101	4.8	-0.23	
19	5.2	0.19		102	5.0	0.020	
20	4.7	-0.29		104	5.0	-0.061	
23	5.4	0.34		105	4.5	-0.52	
25	5.0	-0.038		106	5.1	0.10	
28	5.1	0.094		108	4.8	-0.22	
30	5.0	0.020		111	5.7	0.72	
32	5.6	0.54		113	5.0	-0.070	
33	5.1	0.060		115	5.0	0.0090	
34	5.3	0.23		117	4.8	-0.20	
35	5.0	-0.064		119	5.1	0.039	
40	5.2	0.18		120	4.6	-0.44	
41	5.0	-0.020					
42	5.2	0.14					
43	4.8	-0.18					
44	5.1	0.080					
46	4.7	-0.35					
48	99	94	Outlier				
50	5.2	0.14					
51	4.9	-0.13					
52	5.0	0.00					
54	5.0	-0.013					
55	5.2	0.19					
57	4.3	-0.77					
59	5.3	0.28					
60	5.0	0.016					
64	4.8	-0.19					
65	5.4	0.39					
69	4.9	-0.080					
71	4.7	-0.27					
72	4.8	-0.23					
75	5.6	0.54					
76	5.1	0.068					
77	5.0	-0.028					
80	4.6	-0.45					
81	5.0	-0.059					
82	4.7	-0.37					
83	5.5	0.46					
84	5.4	0.36					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	0.29
Relative standard deviation, %	5.9
No. of values reported	63
No. of values removed	2
No. of reported non-detects	0



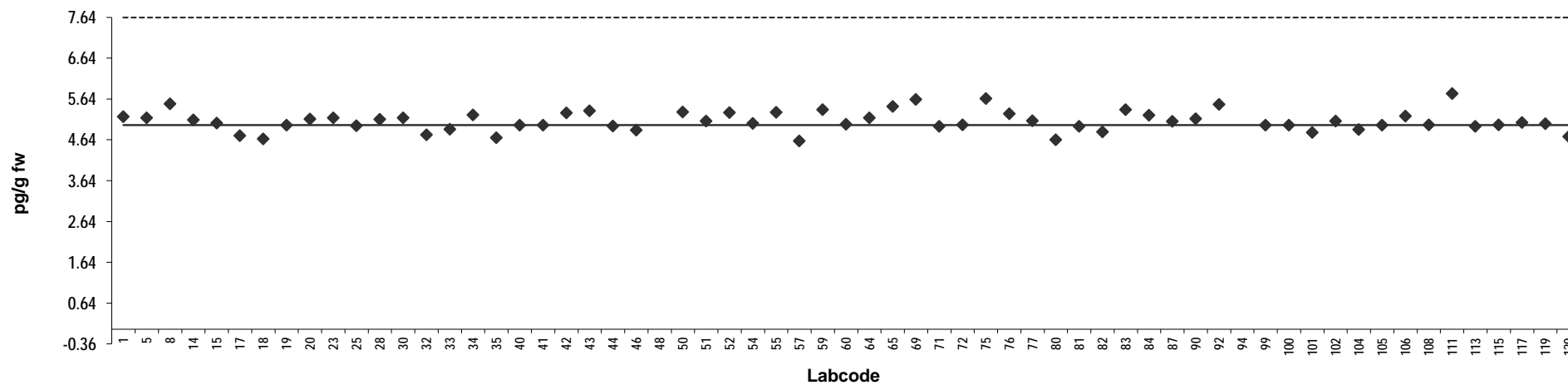
Analyte solution
Congener: 1,2,3,7,8,9 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.2	0.14		87	5.1	0.027	
5	5.2	0.11		90	5.2	0.089	
8	5.5	0.45		92	5.5	0.44	
14	5.1	0.063		94	9.0	3.9	Outlier
15	5.1	-0.016		99	5.0	-0.066	
17	4.7	-0.32		100	5.0	-0.065	
18	4.7	-0.40		101	4.8	-0.24	
19	5.0	-0.065		102	5.1	0.033	
20	5.2	0.083		104	4.9	-0.17	
23	5.2	0.11		105	5.0	-0.065	
25	5.0	-0.081		106	5.2	0.15	
28	5.1	0.074		108	5.0	-0.055	
30	5.2	0.11		111	5.8	0.69	
32	4.8	-0.30		113	5.0	-0.095	
33	4.9	-0.16		115	5.0	-0.058	
34	5.3	0.18		117	5.1	0.00	
35	4.7	-0.37		119	5.0	-0.027	
40	5.0	-0.065		120	4.7	-0.34	
41	5.0	-0.065					
42	5.3	0.23					
43	5.4	0.28					
44	5.0	-0.085					
46	4.9	-0.18					
48	96	89	Outlier				
50	5.3	0.25					
51	5.1	0.033					
52	5.3	0.24					
54	5.0	-0.020					
55	5.3	0.24					
57	4.6	-0.45					
59	5.4	0.31					
60	5.0	-0.045					
64	5.2	0.11					
65	5.5	0.39					
69	5.6	0.56					
71	5.0	-0.096					
72	5.0	-0.058					
75	5.6	0.58					
76	5.3	0.21					
77	5.1	0.039					
80	4.6	-0.42					
81	5.0	-0.097					
82	4.8	-0.23					
83	5.4	0.31					
84	5.2	0.17					

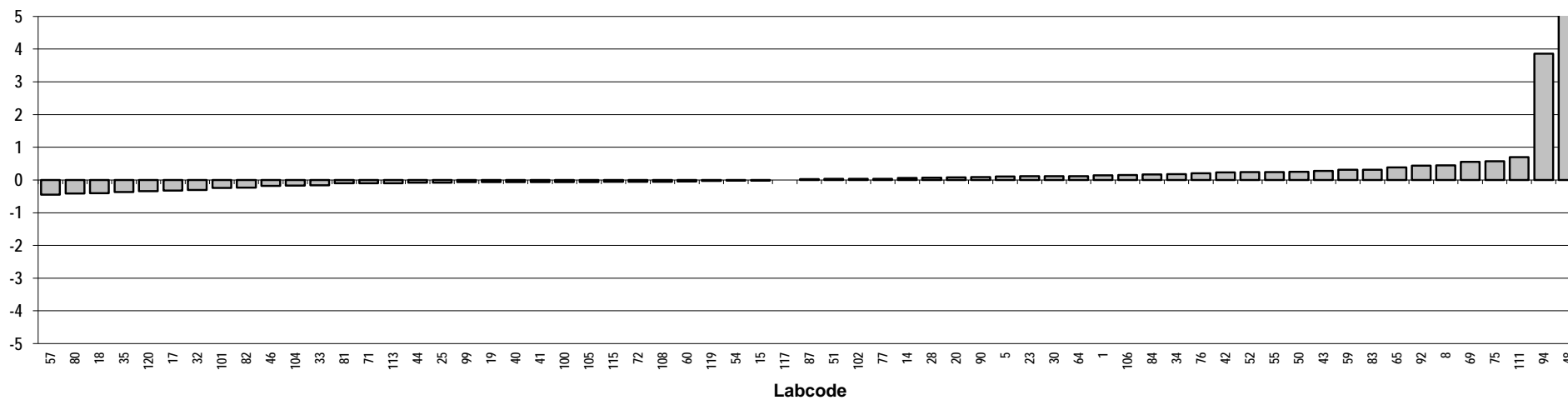
Consensus statistics

Consensus median, pg/g	5.1
Median all values pg/g	5.1
Consensus mean, pg/g	5.1
Standard deviation, pg/g	0.25
Relative standard deviation, %	4.9
No. of values reported	63
No. of values removed	2
No. of reported non-detects	0

1,2,3,7,8,9 HxCDF



Z-score: 1,2,3,7,8,9 HxCDF

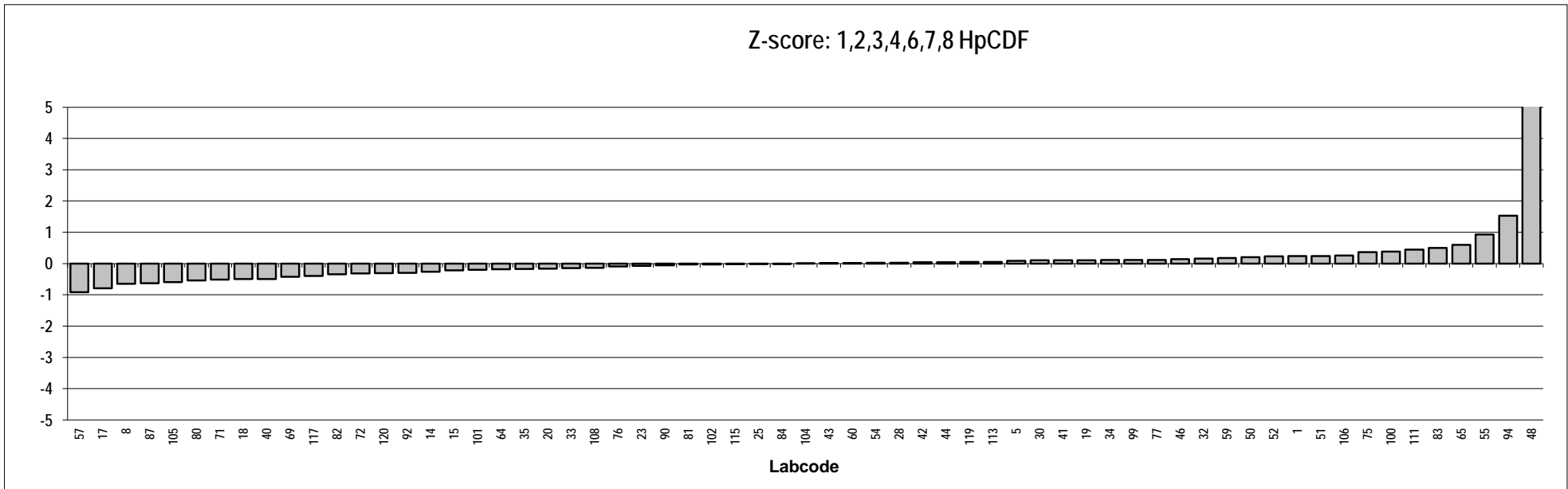
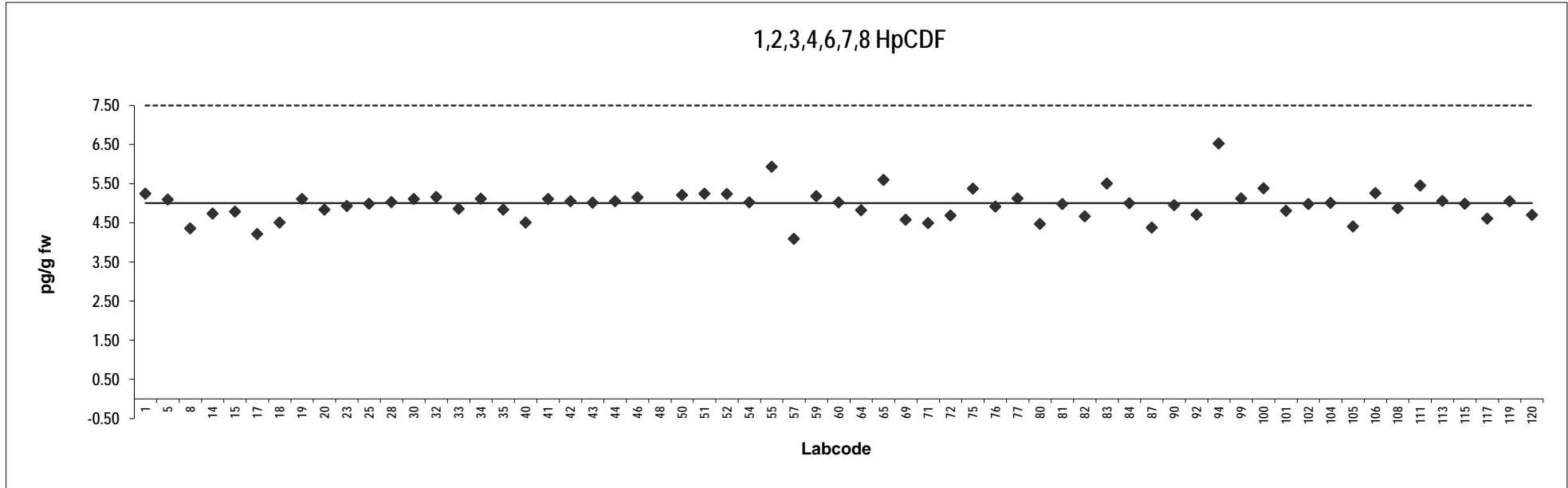


Analyte solution
Congener: 1,2,3,4,6,7,8 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.2	0.24		87	4.4	-0.63	
5	5.1	0.088		90	4.9	-0.052	
8	4.3	-0.65		92	4.7	-0.30	
14	4.7	-0.27		94	6.5	1.5	
15	4.8	-0.22		99	5.1	0.12	
17	4.2	-0.79		100	5.4	0.38	
18	4.5	-0.50		101	4.8	-0.20	
19	5.1	0.11		102	5.0	-0.025	
20	4.8	-0.17		104	5.0	0.0022	
23	4.9	-0.075		105	4.4	-0.60	
25	5.0	-0.015		106	5.3	0.26	
28	5.0	0.023		108	4.9	-0.14	
30	5.1	0.10		111	5.4	0.45	
32	5.2	0.15		113	5.1	0.055	
33	4.9	-0.15		115	5.0	-0.018	
34	5.1	0.11		117	4.6	-0.39	
35	4.8	-0.17		119	5.0	0.048	
40	4.5	-0.50		120	4.7	-0.31	
41	5.1	0.10					
42	5.0	0.045					
43	5.0	0.015					
44	5.0	0.045					
46	5.1	0.14					
48	97	92	Outlier				
50	5.2	0.20					
51	5.2	0.24					
52	5.2	0.23					
54	5.0	0.021					
55	5.9	0.93					
57	4.1	-0.92					
59	5.2	0.17					
60	5.0	0.017					
64	4.8	-0.19					
65	5.6	0.60					
69	4.6	-0.43					
71	4.5	-0.51					
72	4.7	-0.32					
75	5.4	0.37					
76	4.9	-0.090					
77	5.1	0.12					
80	4.5	-0.54					
81	5.0	-0.026					
82	4.7	-0.34					
83	5.5	0.50					
84	5.0	-0.0022					

Consensus statistics

Consensus median, pg/g	5.0
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	0.39
Relative standard deviation, %	7.9
No. of values reported	63
No. of values removed	1
No. of reported non-detects	0

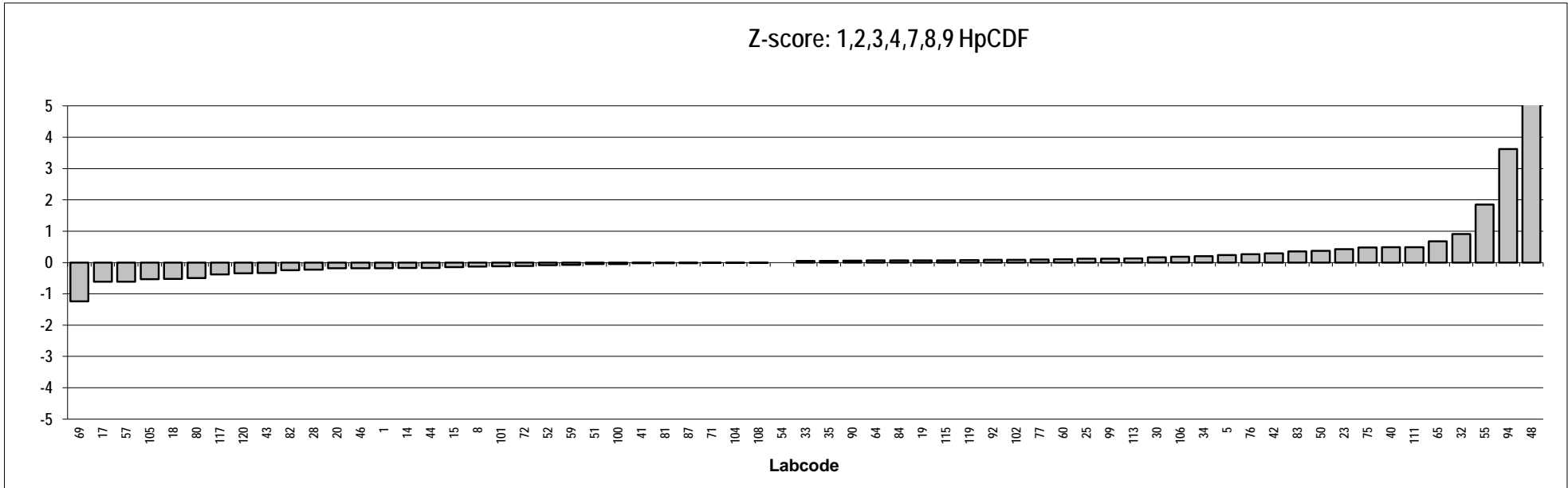
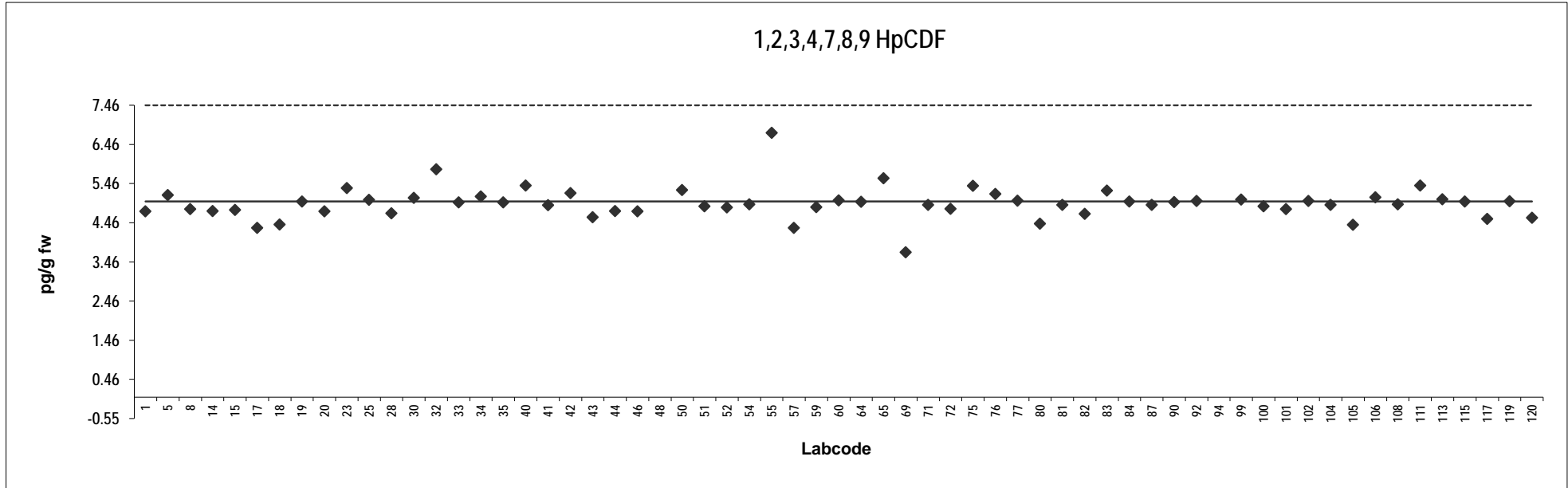


Analyte solution
Congener: 1,2,3,4,7,8,9 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	4.7	-0.18		87	4.9	-0.018	
5	5.2	0.24		90	5.0	0.058	
8	4.8	-0.13		92	5.0	0.088	
14	4.8	-0.18		94	8.5	3.6	Outlier
15	4.8	-0.15		99	5.0	0.12	
17	4.3	-0.62		100	4.9	-0.049	
18	4.4	-0.53		101	4.8	-0.12	
19	5.0	0.069		102	5.0	0.088	
20	4.7	-0.19		104	4.9	-0.012	
23	5.3	0.42		105	4.4	-0.53	
25	5.0	0.12		106	5.1	0.18	
28	4.7	-0.23		108	4.9	-0.0030	
30	5.1	0.17		111	5.4	0.48	
32	5.8	0.91		113	5.1	0.13	
33	5.0	0.048		115	5.0	0.070	
34	5.1	0.20		117	4.6	-0.38	
35	5.0	0.053		119	5.0	0.077	
40	5.4	0.48		120	4.6	-0.35	
41	4.9	-0.023					
42	5.2	0.29					
43	4.6	-0.34					
44	4.8	-0.18					
46	4.7	-0.19					
48	97	93	Outlier				
50	5.3	0.37					
51	4.9	-0.053					
52	4.8	-0.084					
54	4.9	0.00					
55	6.7	1.9					
57	4.3	-0.61					
59	4.9	-0.074					
60	5.0	0.10					
64	5.0	0.068					
65	5.6	0.68					
69	3.7	-1.2					
71	4.9	-0.016					
72	4.8	-0.11					
75	5.4	0.48					
76	5.2	0.27					
77	5.0	0.096					
80	4.4	-0.50					
81	4.9	-0.018					
82	4.7	-0.25					
83	5.3	0.35					
84	5.0	0.069					

Consensus statistics

Consensus median, pg/g	4.9
Median all values pg/g	5.0
Consensus mean, pg/g	4.9
Standard deviation, pg/g	0.40
Relative standard deviation, %	8.2
No. of values reported	63
No. of values removed	2
No. of reported non-detects	0



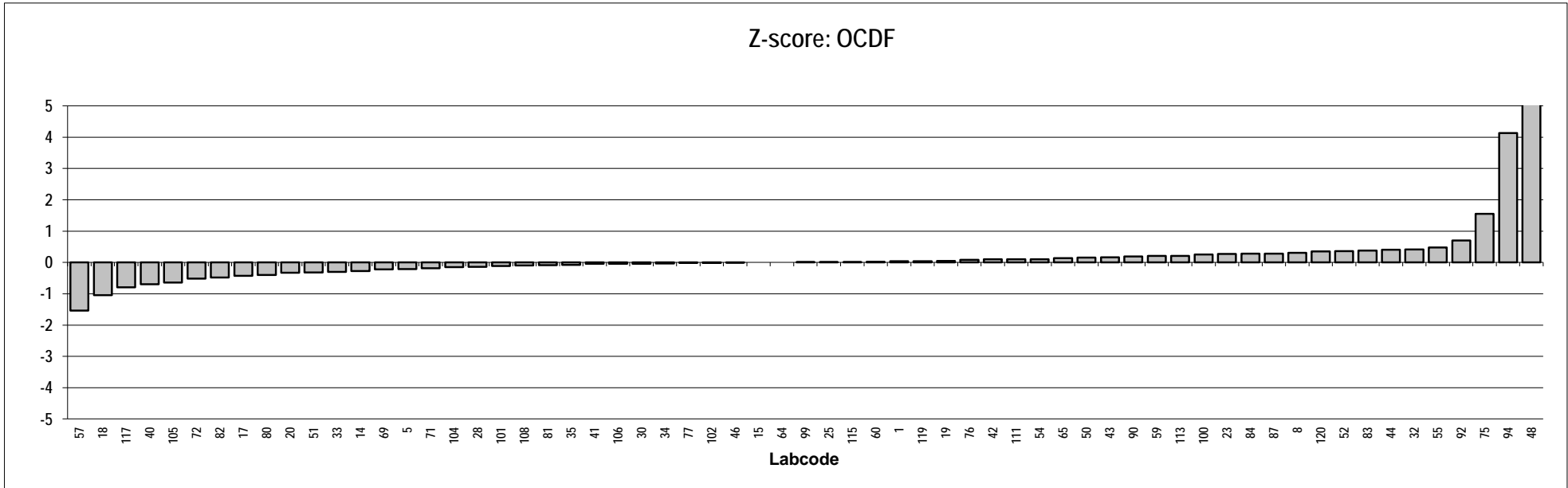
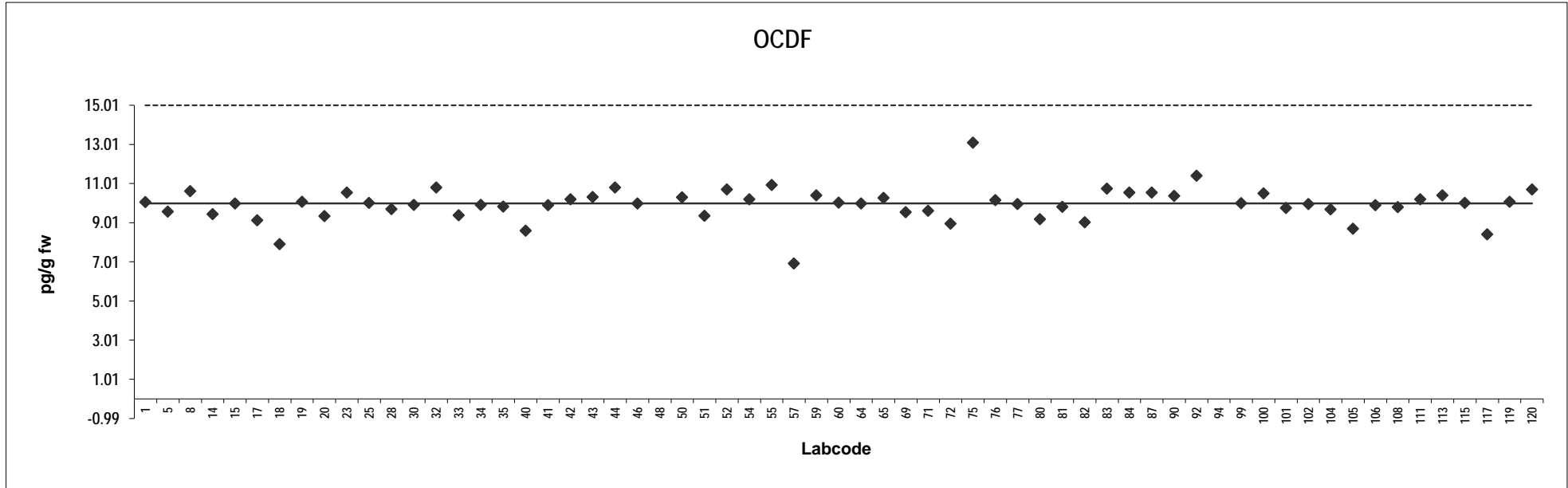
Analyte solution

Congener: OCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	10	0.035		87	11	0.28	
5	9.6	-0.21		90	10	0.19	
8	11	0.31		92	11	0.71	
14	9.4	-0.28		94	18	4.1	Outlier
15	10	0.00		99	10	0.0081	
17	9.1	-0.43		100	11	0.26	
18	7.9	-1.0		101	9.8	-0.12	
19	10	0.044		102	10	-0.015	
20	9.3	-0.33		104	9.7	-0.15	
23	11	0.28		105	8.7	-0.65	
25	10	0.012		106	9.9	-0.045	
28	9.7	-0.14		108	9.8	-0.095	
30	9.9	-0.040		111	10	0.11	
32	11	0.41		113	10	0.21	
33	9.4	-0.31		115	10	0.014	
34	9.9	-0.035		117	8.4	-0.79	
35	9.8	-0.077		119	10	0.042	
40	8.6	-0.70		120	11	0.36	
41	9.9	-0.045					
42	10	0.11					
43	10	0.16					
44	11	0.41					
46	10	-0.0050					
48	193	92	Outlier				
50	10	0.16					
51	9.4	-0.32					
52	11	0.36					
54	10	0.11					
55	11	0.47					
57	6.9	-1.5					
59	10	0.21					
60	10	0.022					
64	10	0.00					
65	10	0.14					
69	9.5	-0.23					
71	9.6	-0.19					
72	9.0	-0.52					
75	13	1.6					
76	10	0.084					
77	10	-0.016					
80	9.2	-0.40					
81	9.8	-0.086					
82	9.0	-0.48					
83	11	0.38					
84	11	0.28					

Consensus statistics

Consensus median, pg/g	10
Median all values pg/g	10
Consensus mean, pg/g	9.9
Standard deviation, pg/g	0.85
Relative standard deviation, %	8.6
No. of values reported	63
No. of values removed	2
No. of reported non-detects	0



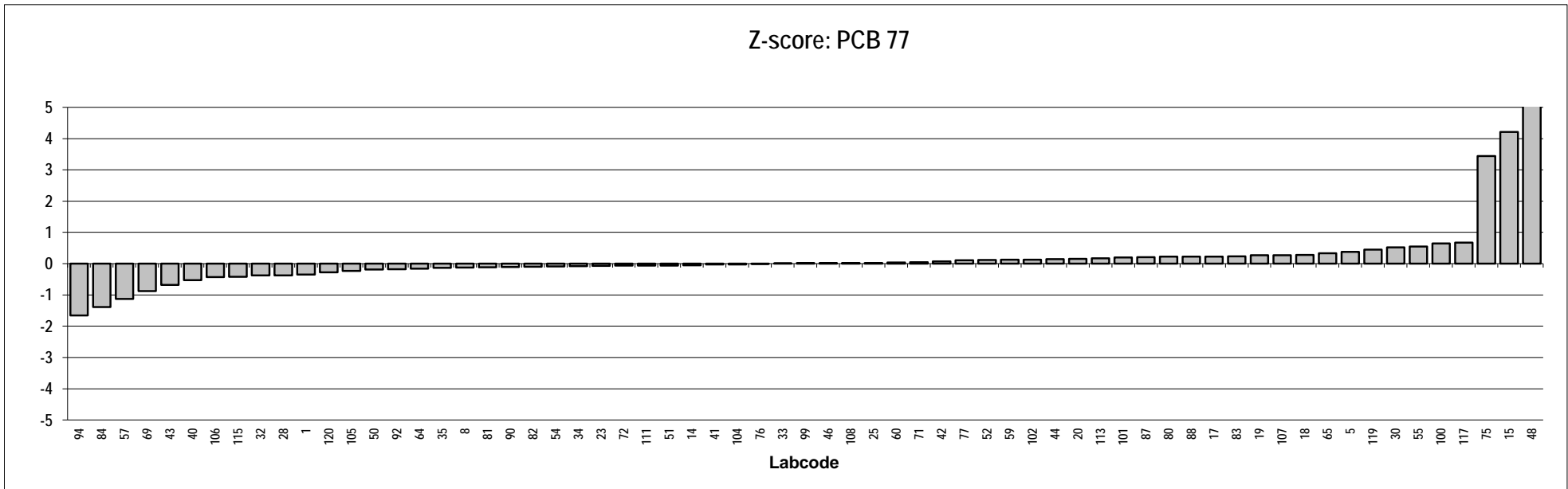
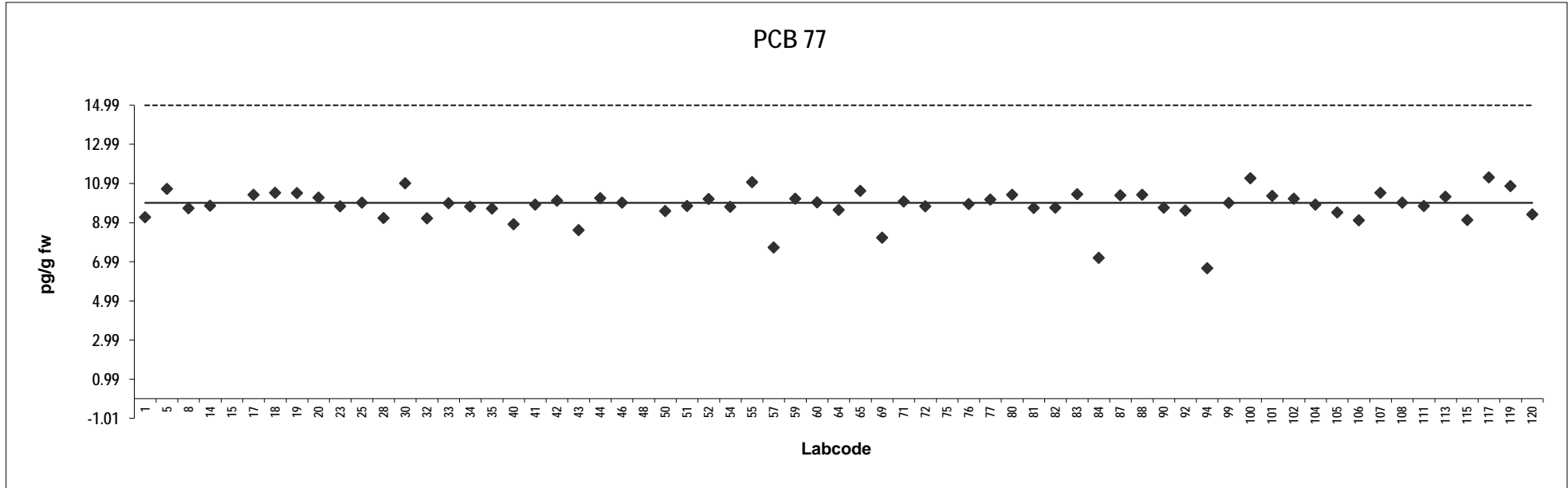
Analyte solution

Congener: PCB 77

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	9.3	-0.35		87	10	0.21	
5	11	0.38		88	10	0.22	
8	9.7	-0.12		90	9.7	-0.11	
14	9.9	-0.054		92	9.6	-0.18	
15	18	4.2	Outlier	94	6.7	-1.7	
17	10	0.23		99	10	0.017	
18	11	0.28		100	11	0.65	
19	10	0.27		101	10	0.20	
20	10	0.16		102	10	0.12	
23	9.8	-0.069		104	9.9	-0.026	
25	10	0.022		105	9.5	-0.23	
28	9.2	-0.37		106	9.1	-0.43	
30	11	0.52		107	11	0.27	
32	9.2	-0.38		108	10	0.022	
33	10.0	0.012		111	9.8	-0.064	
34	9.8	-0.079		113	10	0.17	
35	9.7	-0.13		115	9.1	-0.42	
40	8.9	-0.53		117	11	0.67	
41	9.9	-0.029		119	11	0.45	
42	10	0.072		120	9.4	-0.28	
43	8.6	-0.68					
44	10	0.14					
46	10	0.022					
48	170	80	Outlier				
50	9.6	-0.19					
51	9.8	-0.059					
52	10	0.12					
54	9.8	-0.087					
55	11	0.55					
57	7.7	-1.1					
59	10	0.12					
60	10	0.033					
64	9.6	-0.16					
65	11	0.33					
69	8.2	-0.88					
71	10	0.050					
72	9.8	-0.066					
75	17	3.4	Outlier				
76	9.9	-0.012					
77	10	0.11					
80	10	0.22					
81	9.7	-0.11					
82	9.8	-0.10					
83	10	0.24					
84	7.2	-1.4					

Consensus statistics

Consensus median, pg/g	10
Median all values pg/g	10
Consensus mean, pg/g	9.8
Standard deviation, pg/g	0.84
Relative standard deviation, %	8.6
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



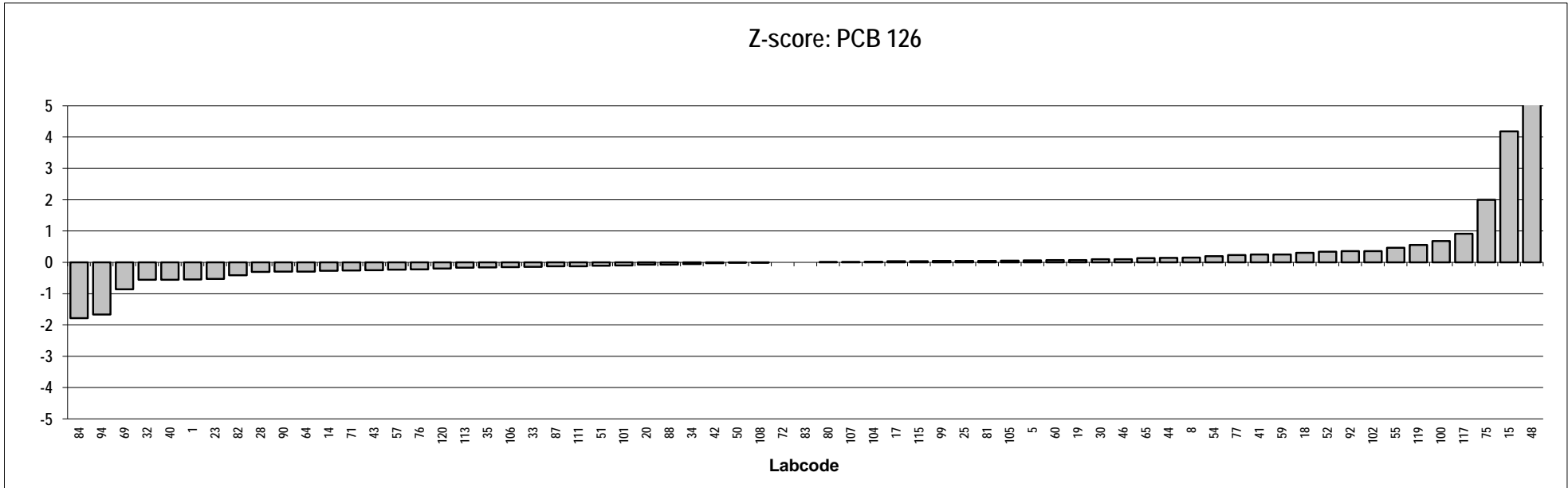
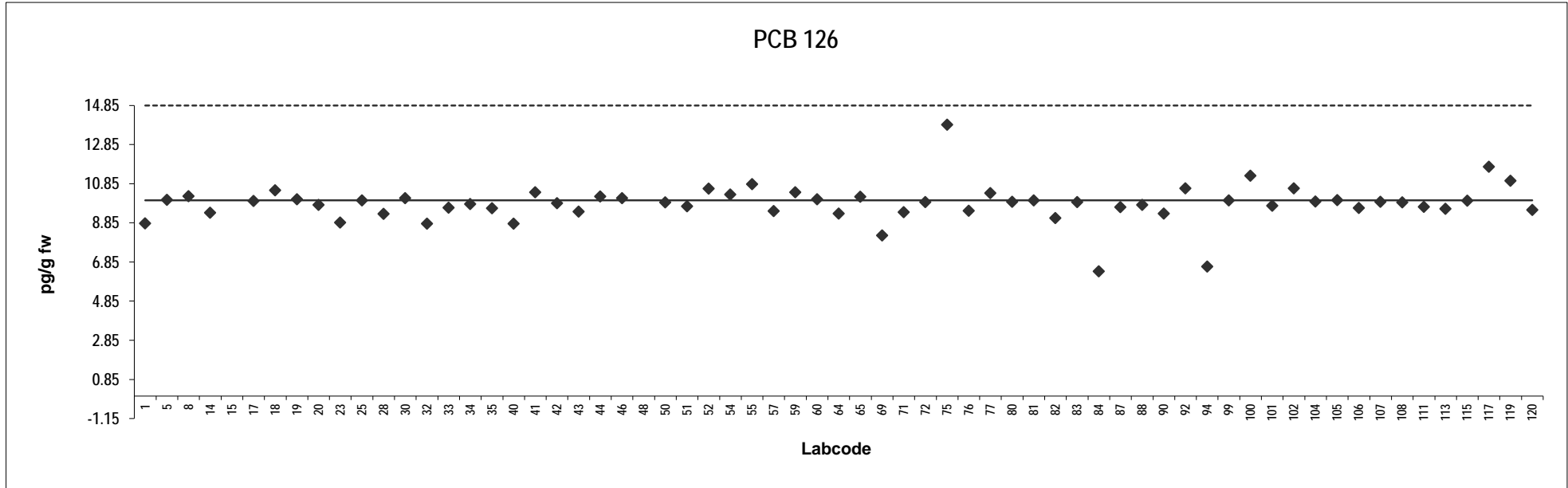
Analyte solution

Congener: PCB 126

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	8.8	-0.55		87	9.6	-0.13	
5	10	0.058		88	9.8	-0.071	
8	10	0.15		90	9.3	-0.30	
14	9.4	-0.27		92	11	0.35	
15	18	4.2	Outlier	94	6.6	-1.7	
17	10	0.032		99	10	0.040	
18	11	0.30		100	11	0.68	
19	10	0.075		101	9.7	-0.096	
20	9.8	-0.071		102	11	0.35	
23	8.9	-0.53		104	9.9	0.013	
25	10	0.044		105	10	0.051	
28	9.3	-0.30		106	9.6	-0.15	
30	10	0.10		107	9.9	0.0051	
32	8.8	-0.56		108	9.9	-0.0051	
33	9.6	-0.15		111	9.7	-0.13	
34	9.8	-0.051		113	9.6	-0.17	
35	9.6	-0.16		115	10	0.036	
40	8.8	-0.56		117	12	0.91	
41	10	0.25		119	11	0.55	
42	9.8	-0.030		120	9.5	-0.20	
43	9.4	-0.25					
44	10	0.15					
46	10	0.10					
48	244	118	Outlier				
50	9.9	-0.010					
51	9.7	-0.11					
52	11	0.34					
54	10	0.19					
55	11	0.47					
57	9.4	-0.23					
59	10	0.25					
60	10	0.071					
64	9.3	-0.30					
65	10	0.14					
69	8.2	-0.86					
71	9.4	-0.26					
72	9.9	0.00					
75	14	2.0					
76	9.4	-0.23					
77	10	0.23					
80	9.9	0.0051					
81	10	0.045					
82	9.1	-0.41					
83	9.9	0.00					
84	6.4	-1.8					

Consensus statistics

Consensus median, pg/g	9.9
Median all values pg/g	9.9
Consensus mean, pg/g	9.8
Standard deviation, pg/g	0.99
Relative standard deviation, %	10
No. of values reported	65
No. of values removed	2
No. of reported non-detects	0



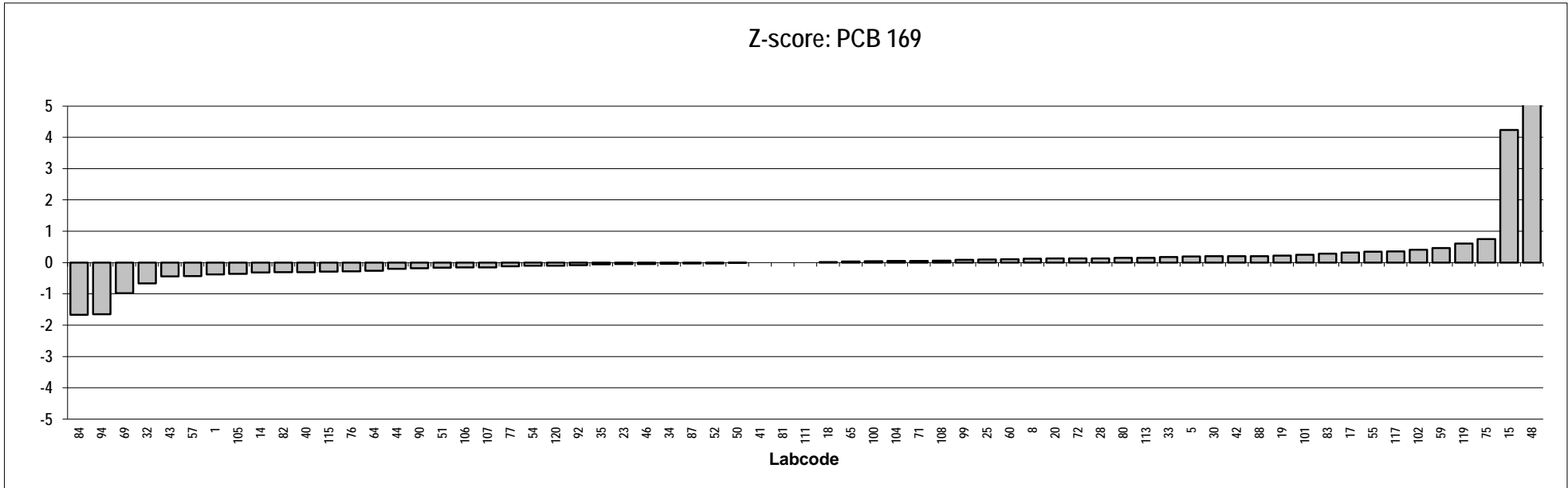
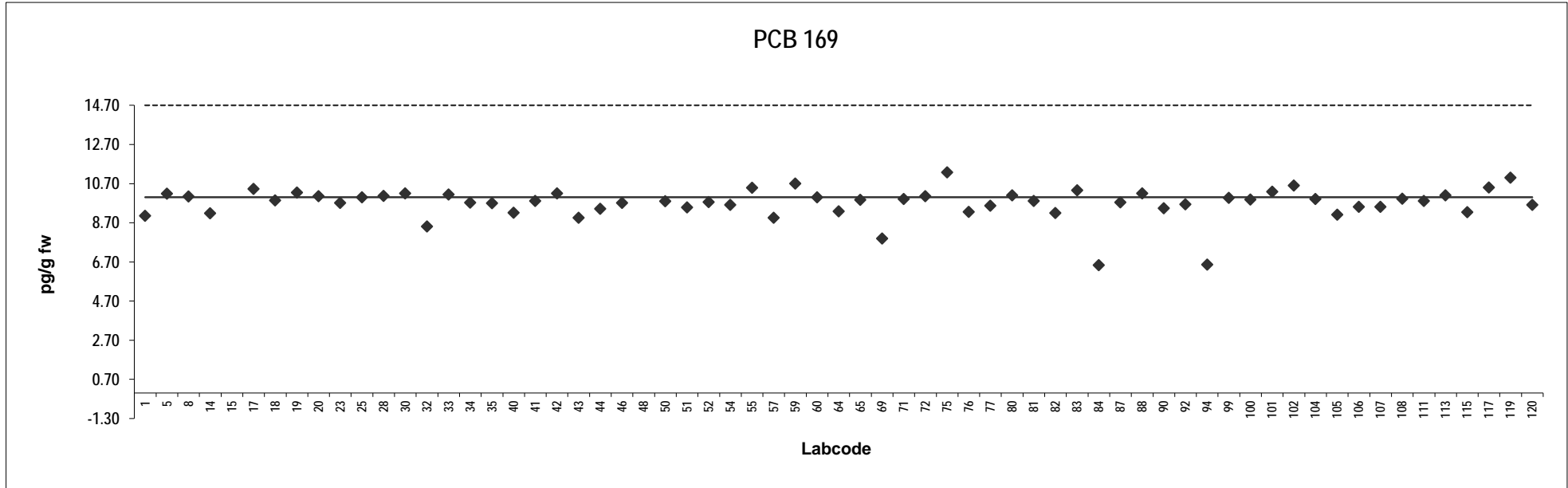
Analyte solution

Congener: PCB 169

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	9.1	-0.38		87	9.7	-0.032	
5	10	0.20		88	10	0.20	
8	10	0.12		90	9.4	-0.19	
14	9.2	-0.32		92	9.6	-0.082	
15	18	4.2	Outlier	94	6.6	-1.7	
17	10	0.32		99	10	0.086	
18	9.8	0.019		100	9.9	0.038	
19	10	0.23		101	10	0.24	
20	10	0.13		102	11	0.41	
23	9.7	-0.051		104	9.9	0.051	
25	10	0.096		105	9.1	-0.36	
28	10	0.13		106	9.5	-0.15	
30	10	0.20		107	9.5	-0.15	
32	8.5	-0.66		108	9.9	0.061	
33	10	0.17		111	9.8	0.00	
34	9.7	-0.041		113	10	0.15	
35	9.7	-0.059		115	9.2	-0.29	
40	9.2	-0.31		117	11	0.36	
41	9.8	0.00		119	11	0.61	
42	10	0.20		120	9.6	-0.10	
43	8.9	-0.44					
44	9.4	-0.20					
46	9.7	-0.051					
48	225	110	Outlier				
50	9.8	-0.0051					
51	9.5	-0.17					
52	9.8	-0.026					
54	9.6	-0.10					
55	10	0.35					
57	9.0	-0.43					
59	11	0.46					
60	10	0.10					
64	9.3	-0.26					
65	9.9	0.036					
69	7.9	-0.98					
71	9.9	0.052					
72	10	0.13					
75	11	0.75					
76	9.2	-0.28					
77	9.6	-0.12					
80	10	0.15					
81	9.8	0.00					
82	9.2	-0.31					
83	10	0.28					
84	6.5	-1.7					

Consensus statistics

Consensus median, pg/g	9.8
Median all values pg/g	9.8
Consensus mean, pg/g	9.7
Standard deviation, pg/g	0.80
Relative standard deviation, %	8.2
No. of values reported	65
No. of values removed	2
No. of reported non-detects	0



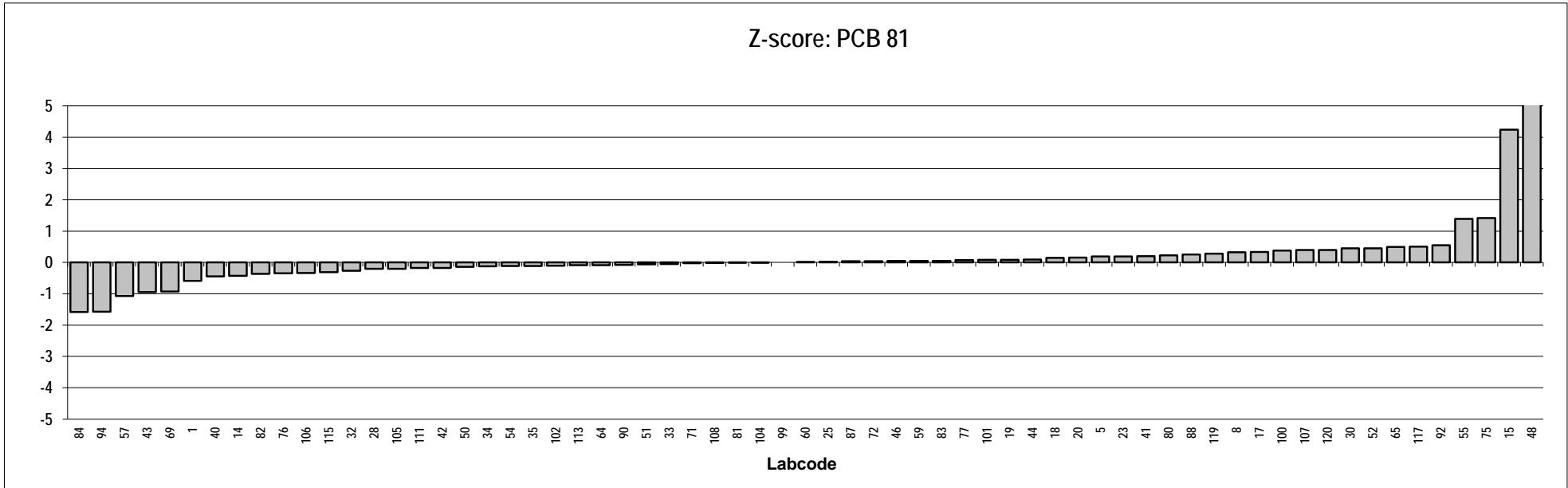
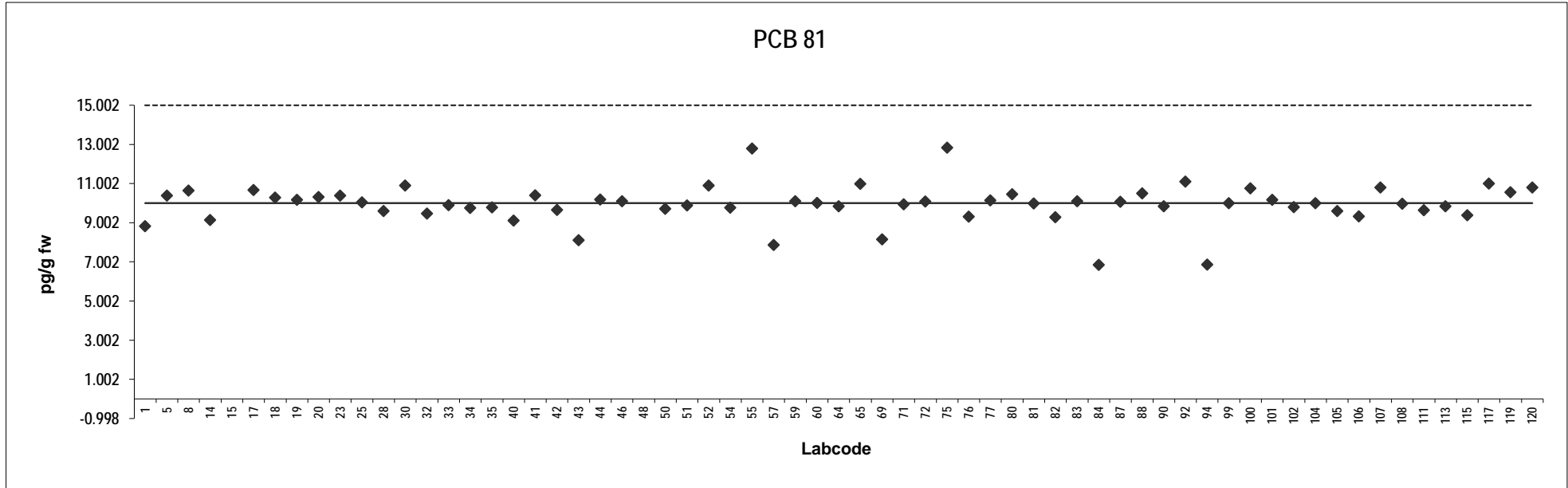
Analyte solution

Congener: PCB 81

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	8.8	-0.59		87	10	0.037	
5	10	0.19		88	11	0.25	
8	11	0.32		90	9.8	-0.078	
14	9.1	-0.43		92	11	0.55	
15	18	4.2	Outlier	94	6.9	-1.6	
17	11	0.33		99	10	0.00	
18	10	0.15		100	11	0.38	
19	10	0.089		101	10	0.082	
20	10	0.16		102	9.8	-0.10	
23	10	0.19		104	10	-0.0033	
25	10	0.022		105	9.6	-0.20	
28	9.6	-0.20		106	9.3	-0.34	
30	11	0.45		107	11	0.40	
32	9.5	-0.27		108	10	-0.018	
33	9.9	-0.048		111	9.6	-0.18	
34	9.8	-0.12		113	9.8	-0.083	
35	9.8	-0.11		115	9.4	-0.31	
40	9.1	-0.45		117	11	0.50	
41	10	0.20		119	11	0.28	
42	9.7	-0.17		120	11	0.40	
43	8.1	-0.95					
44	10	0.092					
46	10	0.052					
48	175	82	Outlier				
50	9.7	-0.14					
51	9.9	-0.055					
52	11	0.45					
54	9.8	-0.12					
55	13	1.4					
57	7.9	-1.1					
59	10	0.052					
60	10	0.0030					
64	9.8	-0.082					
65	11	0.49					
69	8.1	-0.93					
71	9.9	-0.026					
72	10	0.040					
75	13	1.4					
76	9.3	-0.35					
77	10	0.072					
80	10	0.23					
81	10	-0.0078					
82	9.3	-0.36					
83	10	0.052					
84	6.8	-1.6					

Consensus statistics

Consensus median, pg/g	10
Median all values pg/g	10
Consensus mean, pg/g	9.9
Standard deviation, pg/g	1.0
Relative standard deviation, %	10
No. of values reported	65
No. of values removed	2
No. of reported non-detects	0



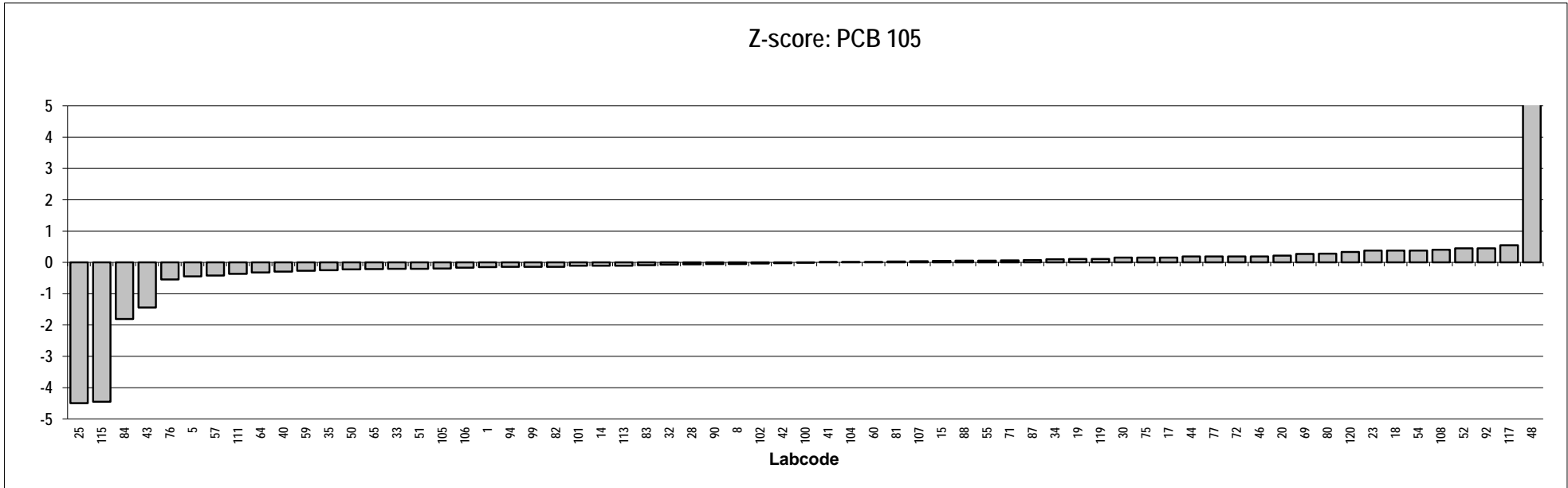
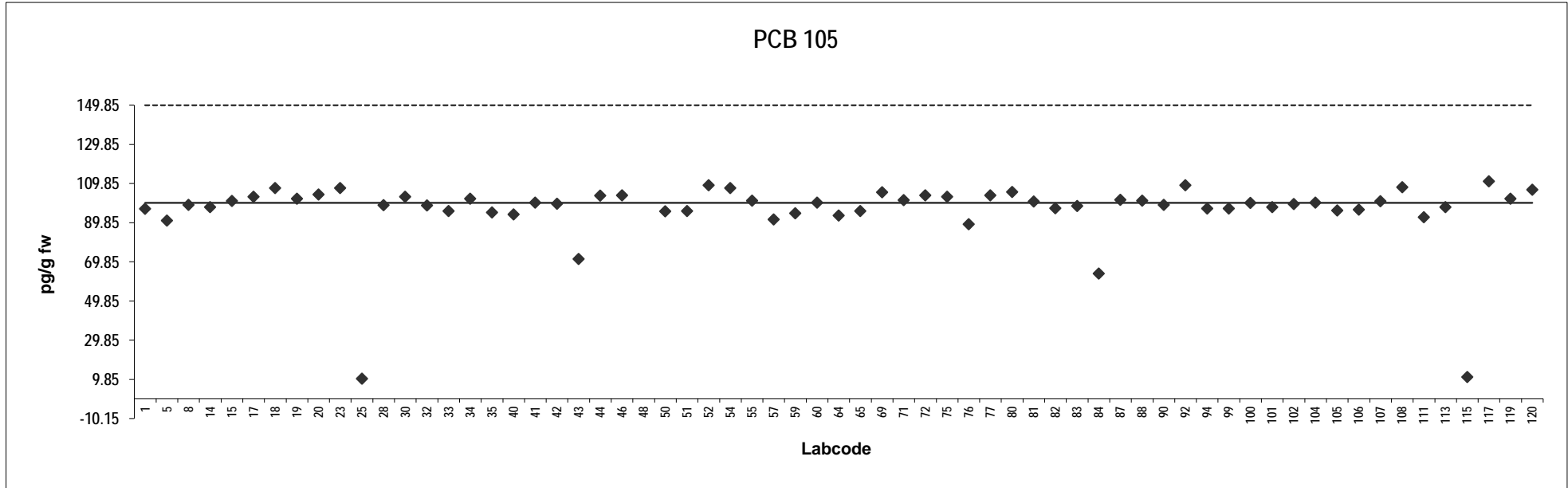
Analyte solution

Congener: PCB 105

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	97	-0.15		87	101	0.074	
5	91	-0.45		88	101	0.053	
8	99	-0.051		90	99	-0.053	
14	98	-0.11		92	109	0.45	
15	101	0.048		94	97	-0.14	
17	103	0.16		99	97	-0.14	
18	108	0.38		100	100	-0.0025	
19	102	0.11		101	98	-0.11	
20	104	0.21		102	99	-0.033	
23	108	0.38		104	100	0.0041	
25	10	-4.5	Outlier	105	96	-0.20	
28	99	-0.059		106	97	-0.17	
30	103	0.15		107	101	0.038	
32	99	-0.068		108	108	0.40	
33	96	-0.21		111	93	-0.37	
34	102	0.10		113	98	-0.11	
35	95	-0.25		115	11	-4.4	Outlier
40	94	-0.30		117	111	0.55	
41	100	0.0025		119	102	0.11	
42	100	-0.023		120	107	0.34	
43	71	-1.4					
44	104	0.19					
46	104	0.19					
48	2150	103	Outlier				
50	96	-0.22					
51	96	-0.21					
52	109	0.45					
54	108	0.38					
55	101	0.058					
57	92	-0.42					
59	95	-0.27					
60	100	0.0042					
64	94	-0.32					
65	96	-0.21					
69	105	0.27					
71	101	0.067					
72	104	0.19					
75	103	0.16					
76	89	-0.55					
77	104	0.19					
80	106	0.28					
81	101	0.031					
82	97	-0.14					
83	98	-0.084					
84	64	-1.8					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	7.5
Relative standard deviation, %	7.6
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



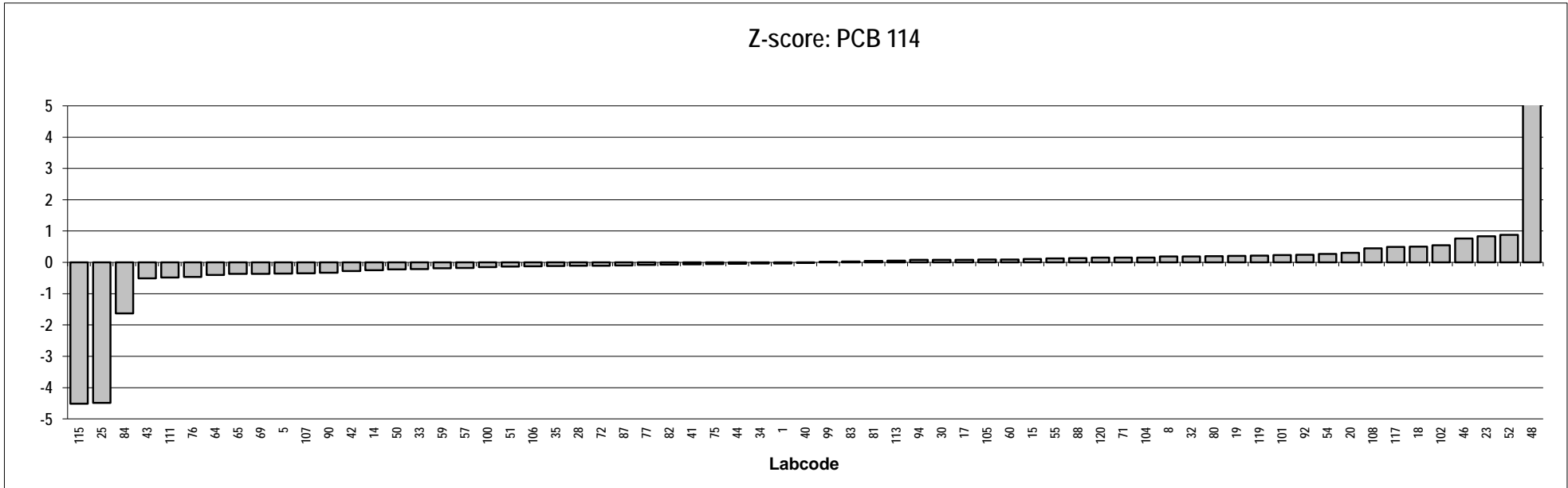
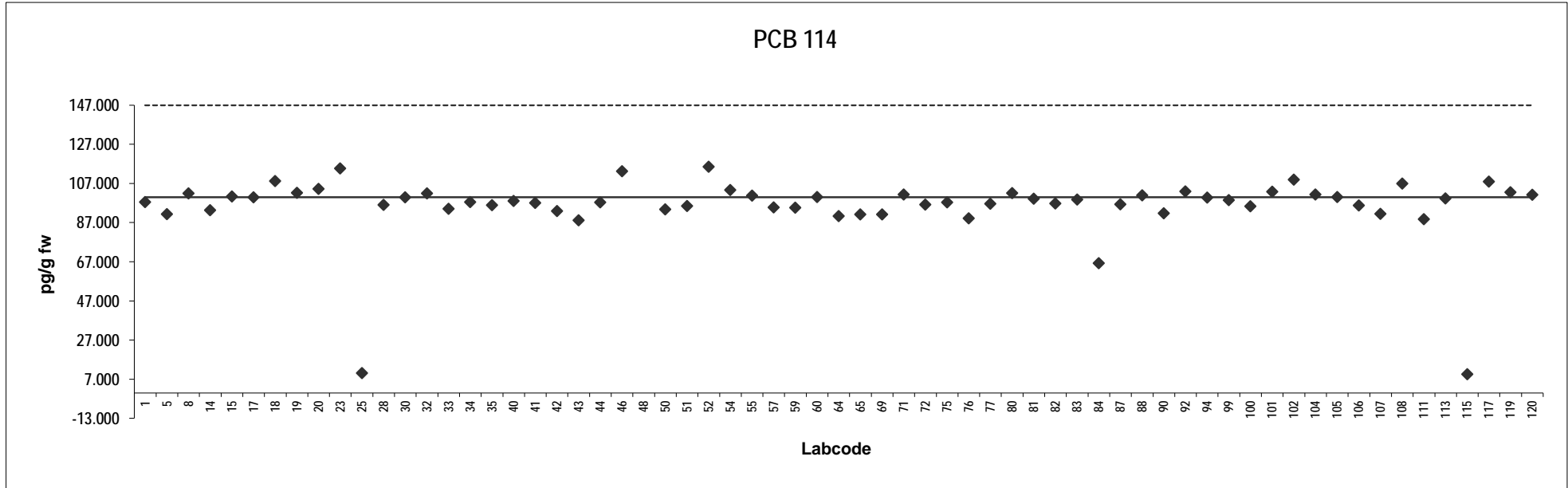
Analyte solution

Congener: PCB 114

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	98	-0.039		87	96	-0.097	
5	91	-0.35		88	101	0.14	
8	102	0.18		90	92	-0.33	
14	93	-0.25		92	103	0.24	
15	100	0.10		94	100	0.079	
17	100	0.085		99	99	0.014	
18	108	0.51		100	95	-0.15	
19	102	0.20		101	103	0.23	
20	104	0.30		102	109	0.55	
23	115	0.84		104	101	0.16	
25	10	-4.5	Outlier	105	100	0.088	
28	96	-0.11		106	96	-0.13	
30	100	0.083		107	92	-0.34	
32	102	0.19		108	107	0.44	
33	94	-0.22		111	89	-0.49	
34	98	-0.040		113	99	0.057	
35	96	-0.12		115	9.6	-4.5	Outlier
40	98	-0.014		117	108	0.49	
41	97	-0.065		119	103	0.22	
42	93	-0.27		120	101	0.15	
43	88	-0.51					
44	97	-0.047					
46	113	0.76					
48	2106	102	Outlier				
50	94	-0.23					
51	96	-0.14					
52	116	0.88					
54	104	0.27					
55	101	0.12					
57	95	-0.18					
59	95	-0.19					
60	100	0.090					
64	90	-0.40					
65	91	-0.36					
69	91	-0.36					
71	101	0.15					
72	96	-0.10					
75	97	-0.050					
76	89	-0.47					
77	97	-0.084					
80	102	0.19					
81	99	0.048					
82	97	-0.074					
83	99	0.029					
84	66	-1.6					

Consensus statistics

Consensus median, pg/g	98
Median all values pg/g	98
Consensus mean, pg/g	98
Standard deviation, pg/g	7.2
Relative standard deviation, %	7.4
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



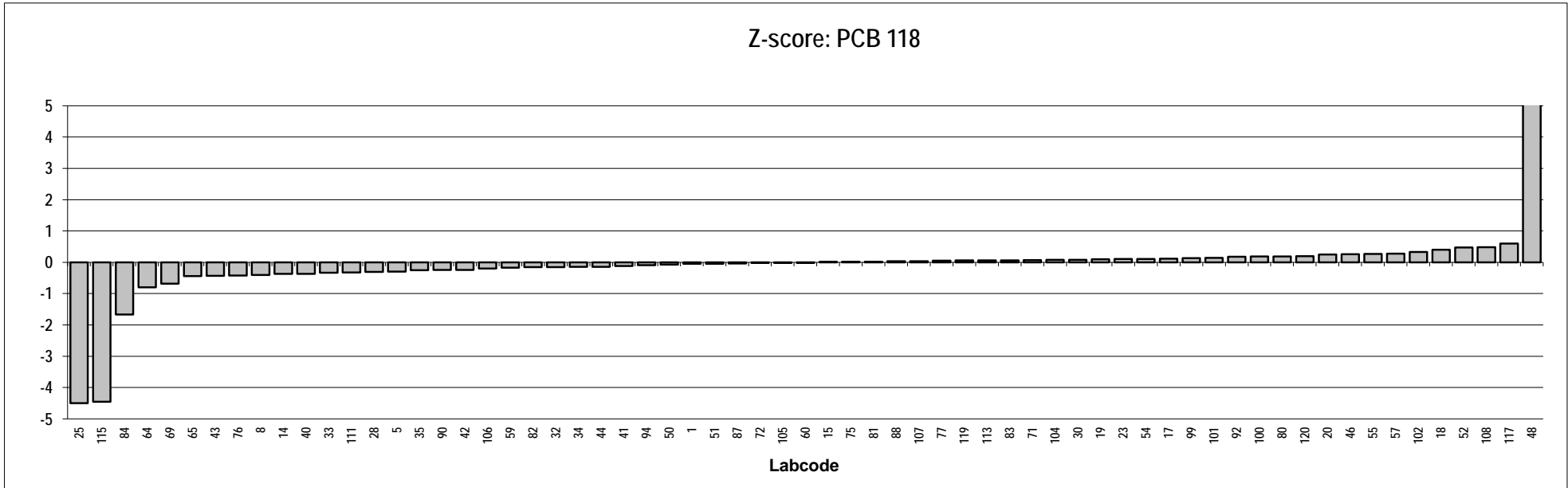
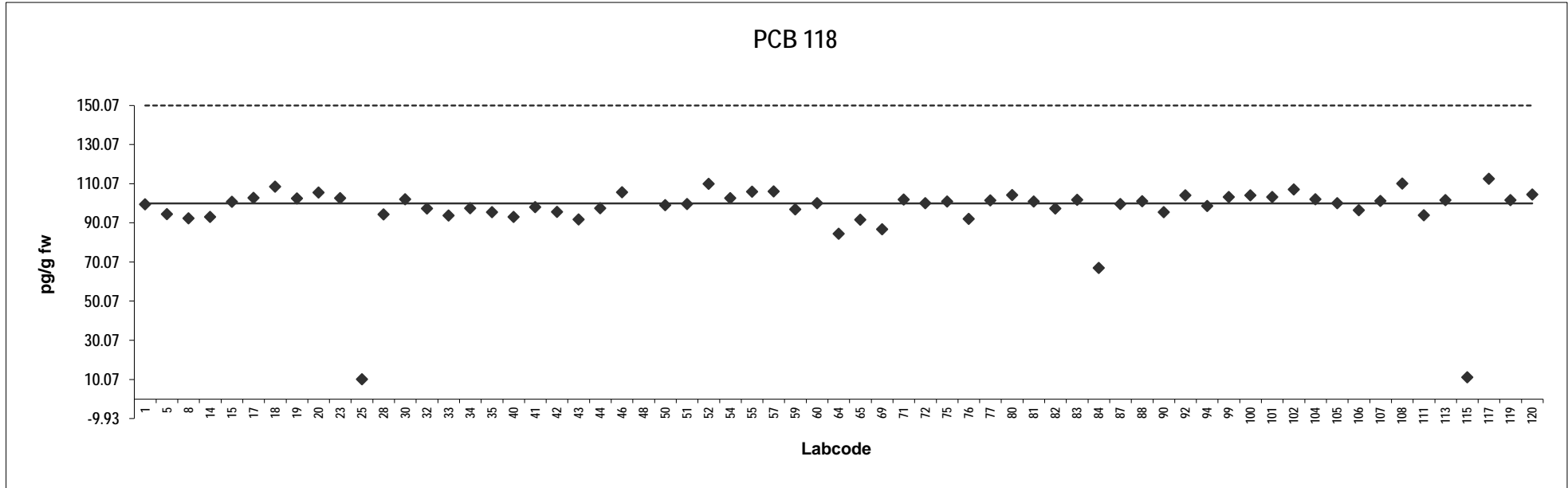
Analyte solution

Congener: PCB 118

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	99	-0.045		87	100	-0.041	
5	94	-0.30		88	101	0.030	
8	92	-0.41		90	95	-0.25	
14	93	-0.37		92	104	0.18	
15	101	0.017		94	99	-0.093	
17	103	0.11		99	103	0.13	
18	108	0.40		100	104	0.18	
19	102	0.098		101	103	0.14	
20	105	0.25		102	107	0.33	
23	103	0.10		104	102	0.078	
25	10	-4.5	Outlier	105	100	-0.020	
28	94	-0.30		106	96	-0.20	
30	102	0.080		107	101	0.035	
32	97	-0.15		108	110	0.48	
33	94	-0.34		111	94	-0.32	
34	97	-0.15		113	102	0.060	
35	95	-0.25		115	11	-4.5	Outlier
40	93	-0.37		117	112	0.60	
41	98	-0.12		119	102	0.057	
42	96	-0.24		120	104	0.20	
43	92	-0.43					
44	97	-0.15					
46	106	0.26					
48	2250	107	Outlier				
50	99	-0.069					
51	100	-0.044					
52	110	0.47					
54	103	0.11					
55	106	0.27					
57	106	0.28					
59	97	-0.17					
60	100	-0.017					
64	84	-0.80					
65	92	-0.44					
69	87	-0.68					
71	102	0.070					
72	100	-0.020					
75	101	0.019					
76	92	-0.42					
77	101	0.055					
80	104	0.19					
81	101	0.020					
82	97	-0.16					
83	102	0.064					
84	67	-1.7					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	6.8
Relative standard deviation, %	6.9
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



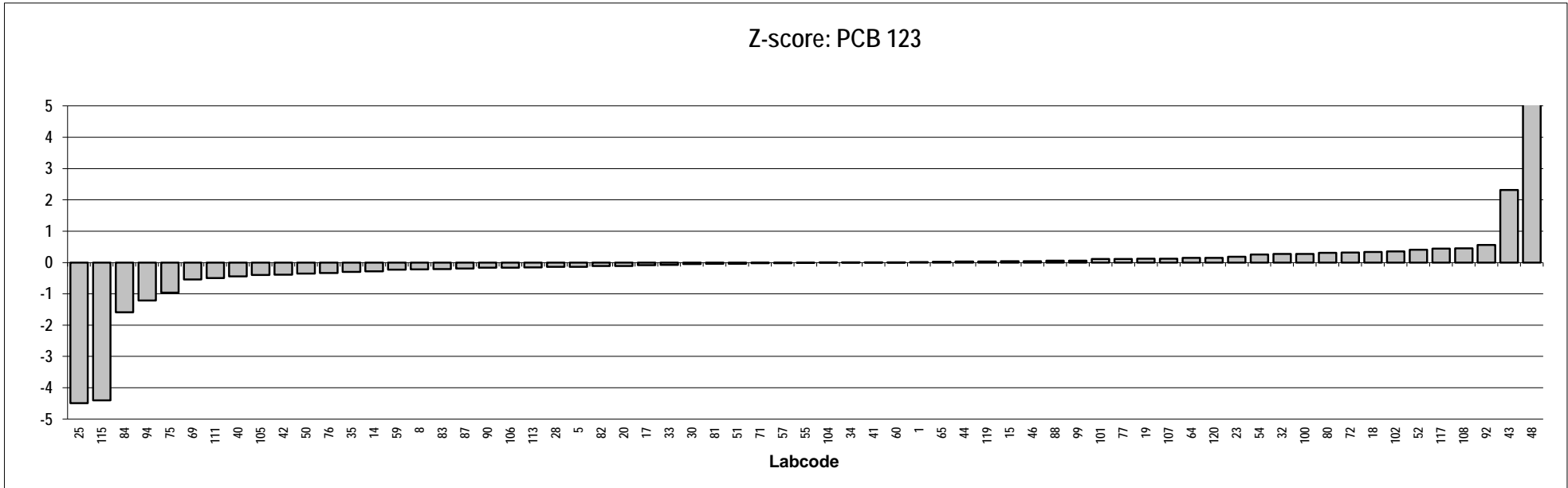
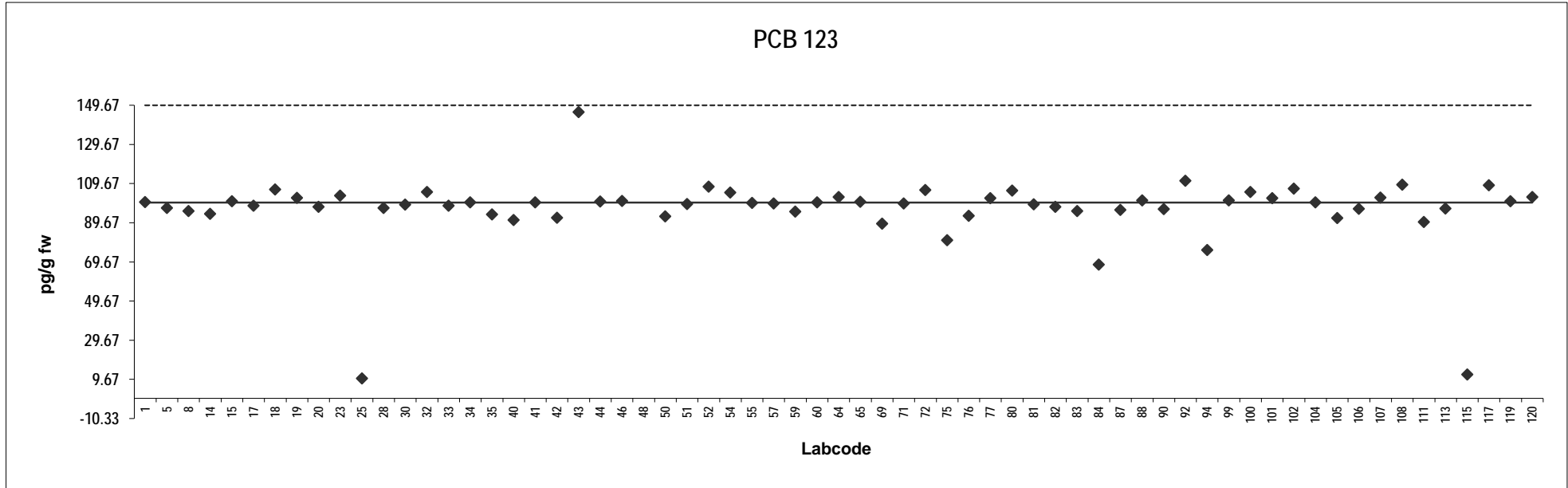
Analyte solution

Congener: PCB 123

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	100	0.012		87	96	-0.19	
5	97	-0.13		88	101	0.056	
8	96	-0.22		90	97	-0.17	
14	94	-0.28		92	111	0.56	
15	101	0.038		94	76	-1.2	
17	98	-0.080		99	101	0.056	
18	107	0.33		100	105	0.27	
19	102	0.12		101	102	0.11	
20	98	-0.11		102	107	0.36	
23	104	0.18		104	100	0.0053	
25	10	-4.5	Outlier	105	92	-0.39	
28	97	-0.14		106	97	-0.16	
30	99	-0.049		107	102	0.13	
32	105	0.27		108	109	0.46	
33	98	-0.080		111	90	-0.49	
34	100	0.0059		113	97	-0.15	Outlier
35	94	-0.30		115	12	-4.4	
40	91	-0.44		117	109	0.45	
41	100	0.0059		119	101	0.036	
42	92	-0.39		120	103	0.15	
43	146	2.3					
44	100	0.028					
46	101	0.041					
48	2257	108	Outlier				
50	93	-0.35					
51	99	-0.038					
52	108	0.41					
54	105	0.26					
55	100	-0.0053					
57	100	-0.019					
59	95	-0.23					
60	100	0.0064					
64	103	0.15					
65	100	0.022					
69	89	-0.54					
71	99	-0.020					
72	106	0.32					
75	81	-0.96					
76	93	-0.33					
77	102	0.12					
80	106	0.31					
81	99	-0.042					
82	98	-0.11					
83	96	-0.21					
84	68	-1.6					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	9.5
Relative standard deviation, %	10
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



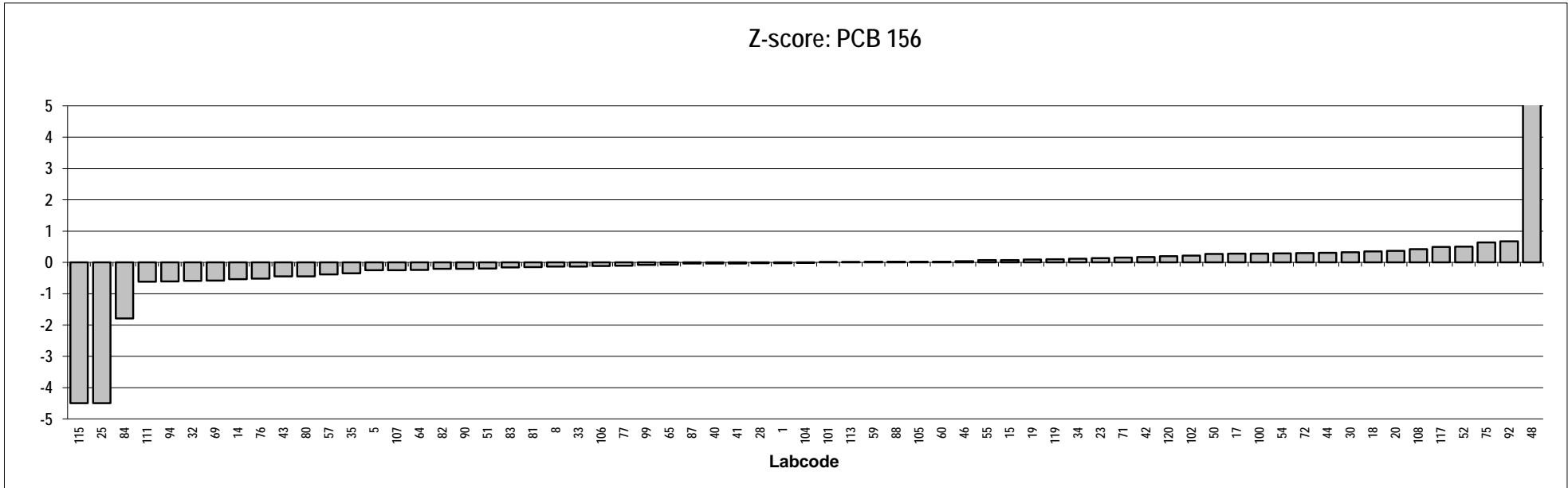
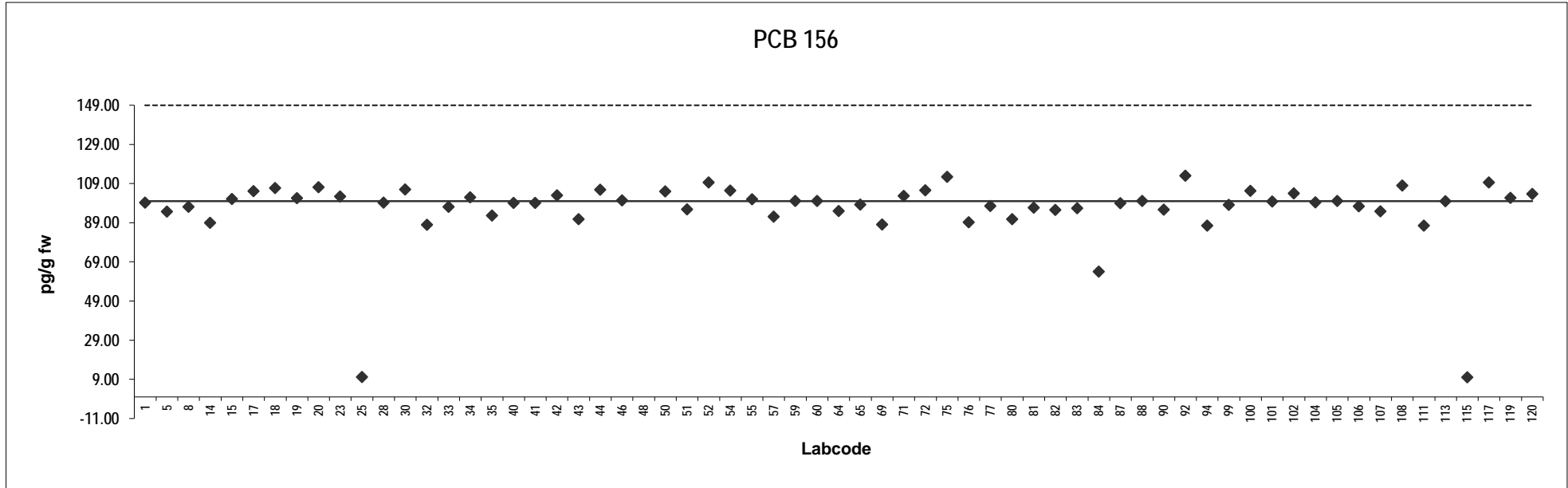
Analyte solution

Congener: PCB 156

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	99	-0.020		87	99	-0.035	
5	95	-0.25		88	100	0.021	
8	97	-0.13		90	96	-0.20	
14	89	-0.54		92	113	0.67	
15	101	0.073		94	88	-0.61	
17	105	0.28		99	98	-0.079	
18	107	0.35		100	105	0.28	
19	101	0.093		101	100	0.013	
20	107	0.37		102	104	0.22	
23	102	0.14		104	99	-0.013	
25	10	-4.5	Outlier	105	100	0.021	
28	99	-0.020		106	97	-0.11	
30	106	0.32		107	95	-0.24	
32	88	-0.58		108	108	0.42	
33	97	-0.13		111	87	-0.61	
34	102	0.12		113	100	0.016	
35	93	-0.35		115	10	-4.5	Outlier
40	99	-0.030		117	110	0.50	
41	99	-0.030		119	102	0.10	
42	103	0.17		120	104	0.20	
43	91	-0.45					
44	106	0.31					
46	100	0.041					
48	2113	101	Outlier				
50	105	0.27					
51	96	-0.19					
52	110	0.50					
54	105	0.29					
55	101	0.071					
57	92	-0.38					
59	100	0.021					
60	100	0.022					
64	95	-0.24					
65	98	-0.072					
69	88	-0.58					
71	103	0.16					
72	106	0.30					
75	112	0.64					
76	89	-0.52					
77	97	-0.11					
80	91	-0.44					
81	97	-0.14					
82	95	-0.21					
83	96	-0.16					
84	64	-1.8					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	99
Consensus mean, pg/g	99
Standard deviation, pg/g	7.6
Relative standard deviation, %	7.7
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



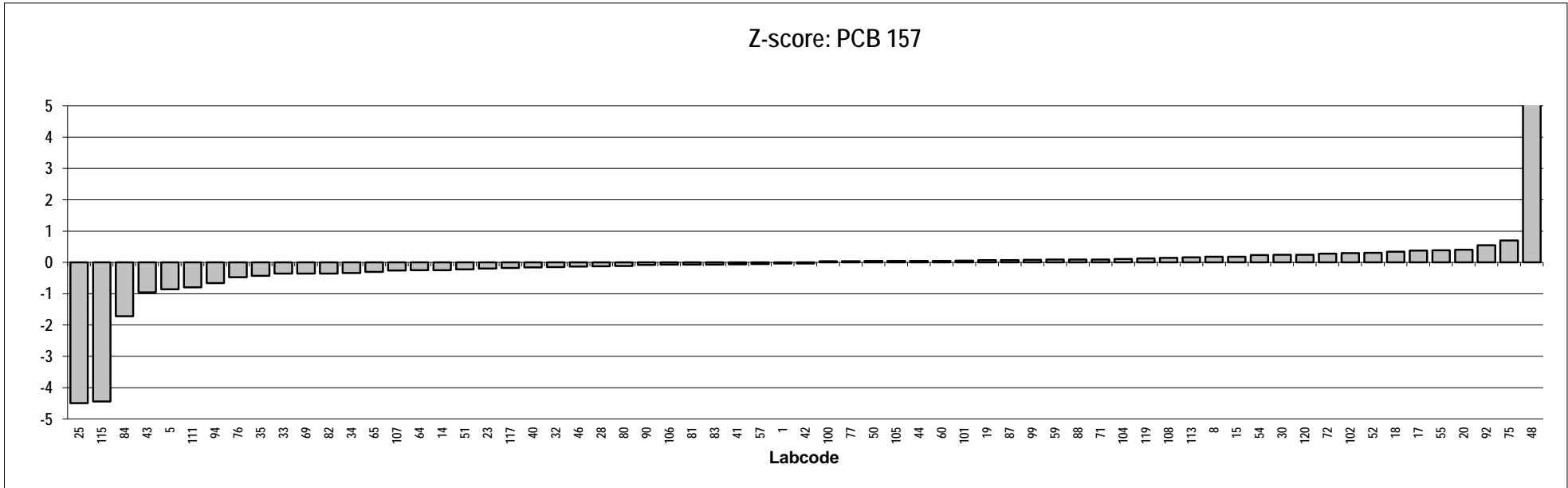
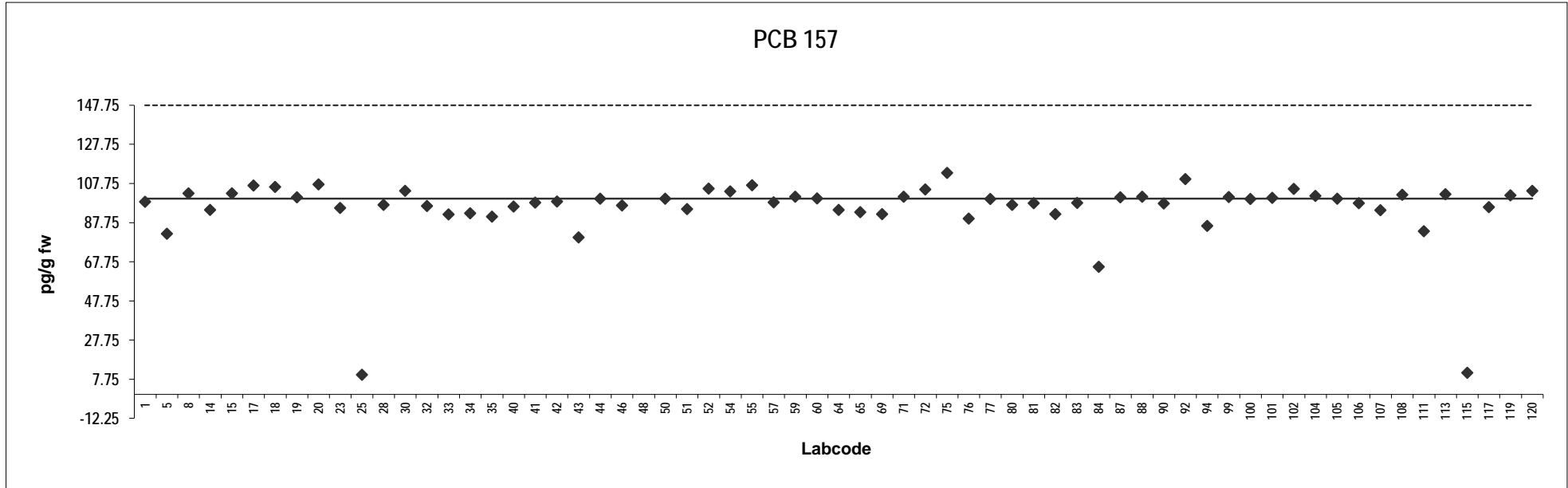
Analyte solution

Congener: PCB 157

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	98	-0.038		87	101	0.075	
5	82	-0.86		88	101	0.093	
8	103	0.18		90	98	-0.084	
14	94	-0.25		92	110	0.55	
15	103	0.18		94	86	-0.66	
17	107	0.38		99	101	0.081	
18	106	0.34		100	100	0.033	
19	101	0.073		101	100	0.059	
20	107	0.41		102	105	0.29	
23	95	-0.19		104	101	0.11	
25	10	-4.5	Outlier	105	100	0.042	
28	97	-0.12		106	98	-0.074	
30	104	0.24		107	94	-0.26	
32	96	-0.15		108	102	0.14	
33	92	-0.36		111	83	-0.80	
34	93	-0.34		113	102	0.16	
35	91	-0.42		115	11	-4.4	Outlier
40	96	-0.16		117	96	-0.18	
41	98	-0.058		119	102	0.13	
42	99	-0.033		120	104	0.24	
43	80	-0.96					
44	100	0.044					
46	97	-0.13					
48	2027	97	Outlier				
50	100	0.042					
51	95	-0.22					
52	105	0.30					
54	104	0.23					
55	107	0.39					
57	98	-0.053					
59	101	0.093					
60	100	0.044					
64	94	-0.25					
65	93	-0.31					
69	92	-0.36					
71	101	0.093					
72	105	0.28					
75	113	0.70					
76	90	-0.47					
77	100	0.034					
80	97	-0.12					
81	98	-0.073					
82	92	-0.36					
83	98	-0.070					
84	65	-1.7					

Consensus statistics

Consensus median, pg/g	99
Median all values pg/g	99
Consensus mean, pg/g	98
Standard deviation, pg/g	7.6
Relative standard deviation, %	7.7
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



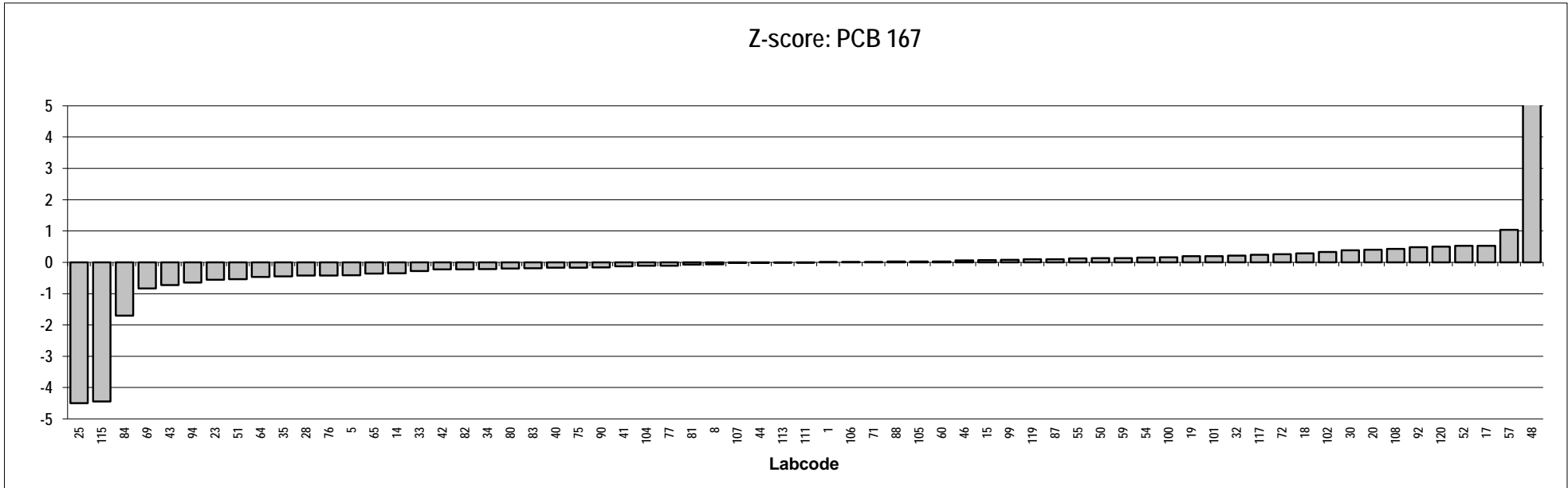
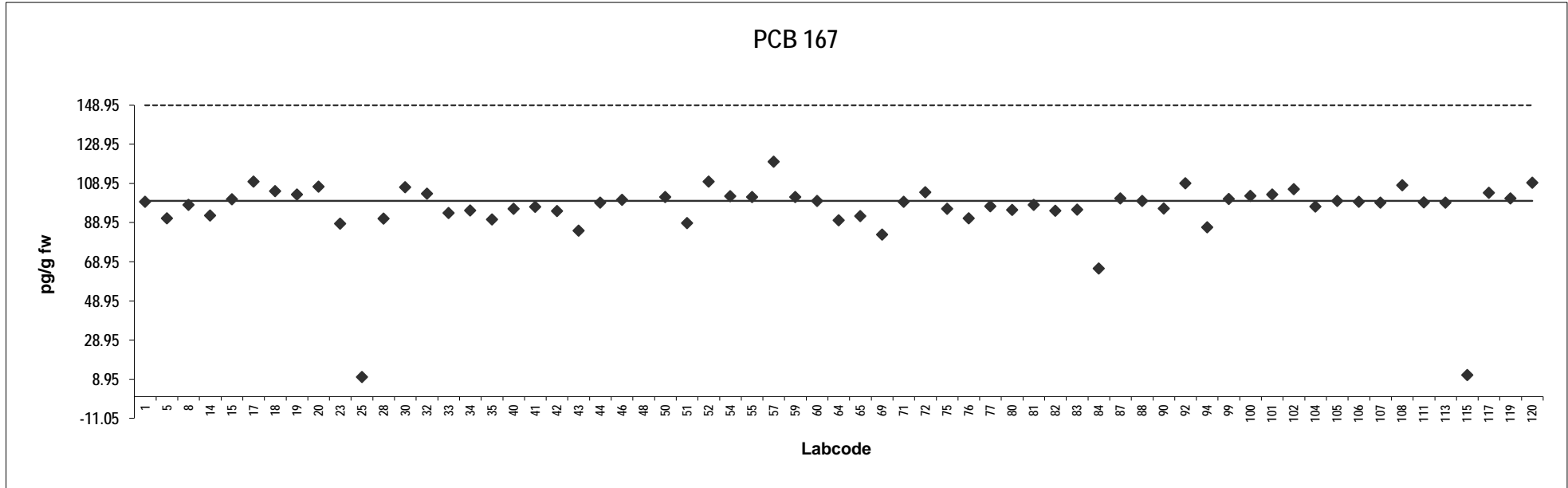
Analyte solution

Congener: PCB 167

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	100	0.0060		87	101	0.096	
5	91	-0.41		88	100	0.029	
8	98	-0.067		90	96	-0.16	
14	93	-0.35		92	109	0.48	
15	101	0.074		94	87	-0.64	
17	110	0.53		99	101	0.080	
18	105	0.28		100	103	0.16	
19	103	0.19		101	103	0.20	
20	107	0.40		102	106	0.33	
23	88	-0.55		104	97	-0.11	
25	10	-4.5	Outlier	105	100	0.029	
28	91	-0.42		106	100	0.0071	
30	107	0.38		107	99	-0.017	
32	104	0.22		108	108	0.43	
33	94	-0.28		111	99	-0.0060	
34	95	-0.21		113	99	-0.011	
35	91	-0.45		115	11	-4.4	Outlier
40	96	-0.17		117	104	0.24	
41	97	-0.12		119	101	0.094	
42	95	-0.23		120	109	0.50	
43	85	-0.73					
44	99	-0.014					
46	101	0.059					
48	2080	100	Outlier				
50	102	0.13					
51	89	-0.54					
52	110	0.52					
54	102	0.15					
55	102	0.13					
57	120	1.0					
59	102	0.13					
60	100	0.031					
64	90	-0.47					
65	92	-0.36					
69	83	-0.83					
71	100	0.011					
72	105	0.26					
75	96	-0.17					
76	91	-0.42					
77	97	-0.11					
80	95	-0.20					
81	98	-0.071					
82	95	-0.22					
83	96	-0.19					
84	66	-1.7					

Consensus statistics

Consensus median, pg/g	99
Median all values pg/g	99
Consensus mean, pg/g	98
Standard deviation, pg/g	8.0
Relative standard deviation, %	8.1
No. of values reported	65
No. of values removed	3
No. of reported non-detects	0



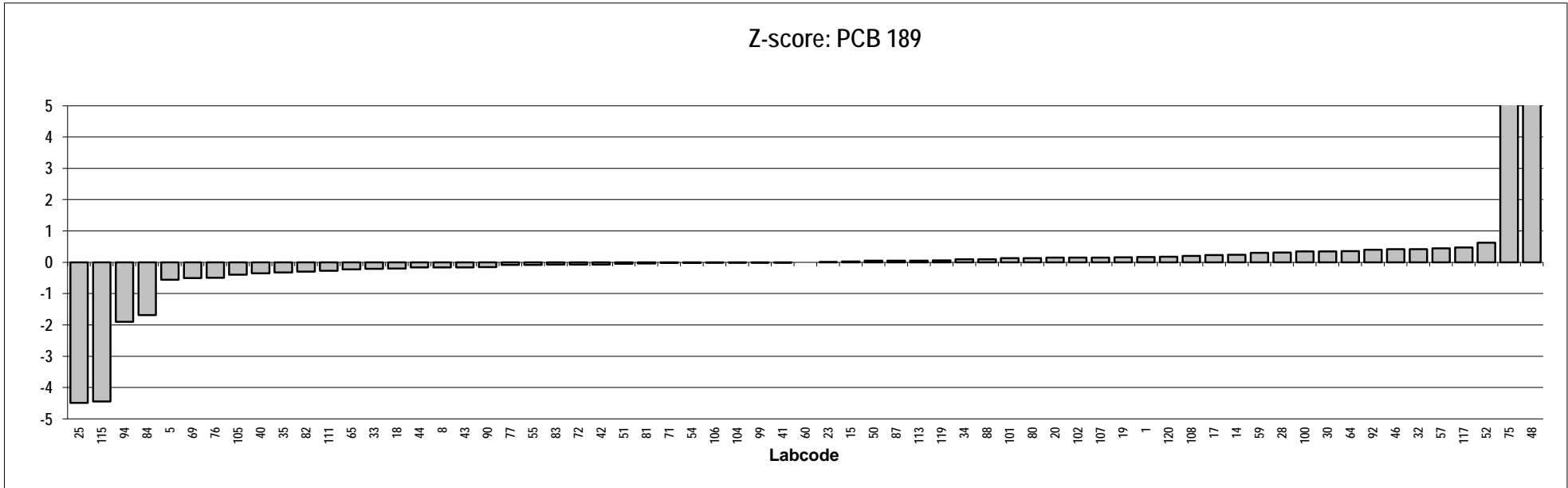
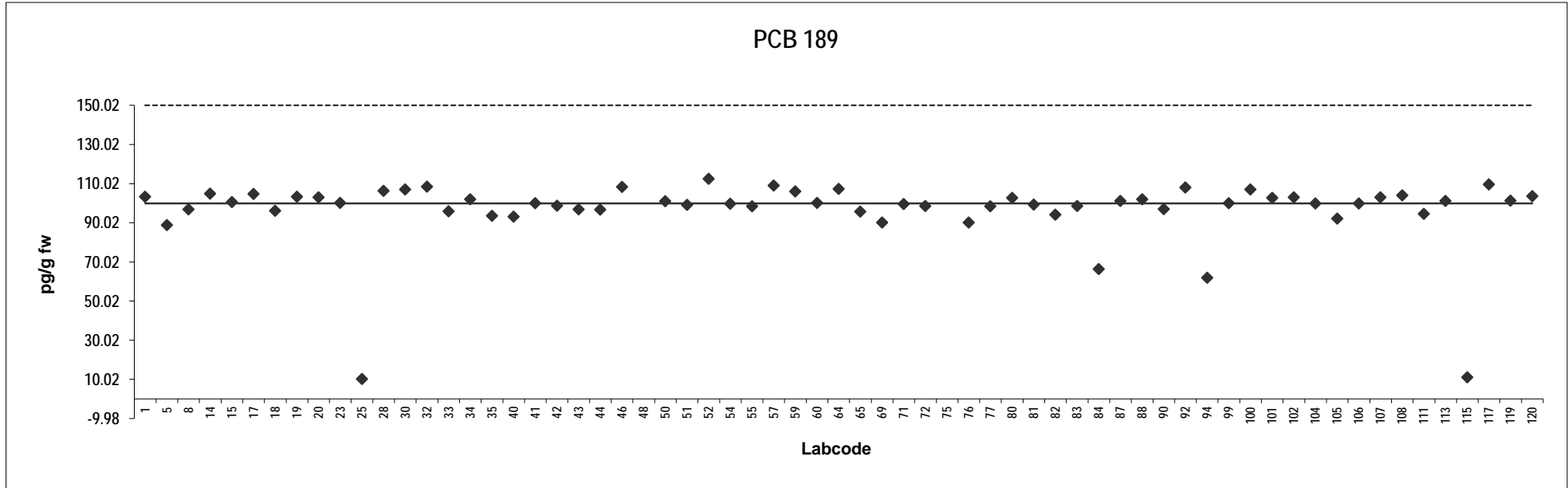
Analyte solution

Congener: PCB 189

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	103	0.16		87	101	0.052	
5	89	-0.56		88	102	0.099	
8	97	-0.16		90	97	-0.16	
14	105	0.24		92	108	0.40	
15	101	0.025		94	62	-1.9	
17	105	0.23		99	100	-0.0031	
18	96	-0.20		100	107	0.34	
19	103	0.16		101	103	0.13	
20	103	0.15		102	103	0.15	
23	100	0.0044		104	100	-0.0076	
25	10	-4.5	Outlier	105	92	-0.40	
28	106	0.31		106	100	-0.012	
30	107	0.35		107	103	0.15	
32	108	0.42		108	104	0.20	
33	96	-0.21		111	95	-0.28	
34	102	0.099		113	101	0.054	
35	93	-0.33		115	11	-4.5	Outlier
40	93	-0.35		117	110	0.47	
41	100	-0.00061		119	101	0.058	
42	99	-0.071		120	104	0.17	
43	97	-0.16					
44	97	-0.17					
46	108	0.41					
48	2232	107	Outlier				
50	101	0.049					
51	99	-0.046					
52	112	0.62					
54	100	-0.018					
55	98	-0.080					
57	109	0.45					
59	106	0.30					
60	100	0.00					
64	107	0.36					
65	96	-0.22					
69	90	-0.50					
71	100	-0.023					
72	99	-0.076					
75	212	5.6	Outlier				
76	90	-0.50					
77	98	-0.085					
80	103	0.13					
81	99	-0.036					
82	94	-0.30					
83	98	-0.077					
84	66	-1.7					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	8.3
Relative standard deviation, %	8.3
No. of values reported	65
No. of values removed	4
No. of reported non-detects	0



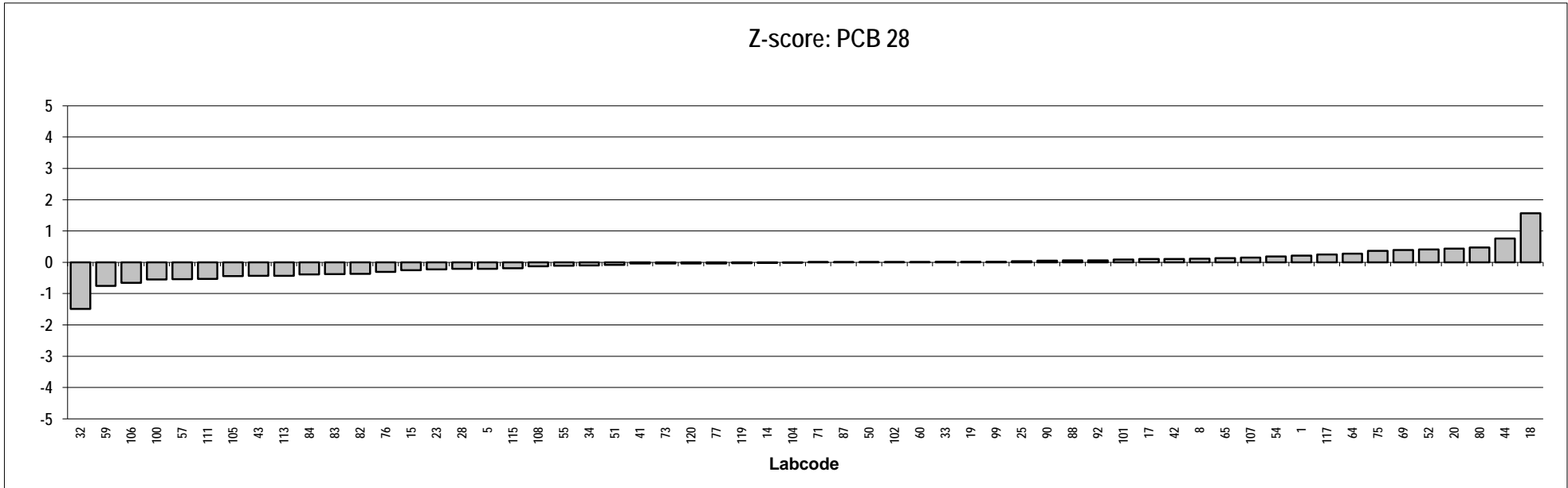
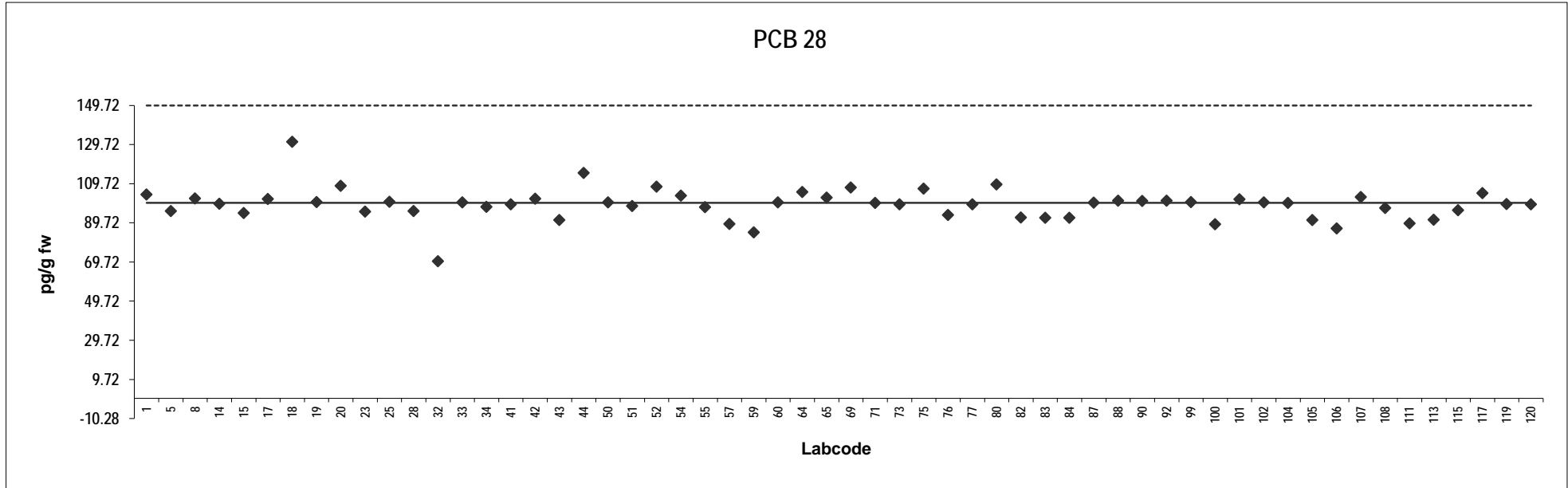
Analyte solution

Congener: PCB 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	104	0.22		101	102	0.091	
5	96	-0.21		102	100	0.0093	
8	102	0.11		104	100	-0.0013	
14	99	-0.021		105	91	-0.44	
15	95	-0.26		106	87	-0.65	
17	102	0.10		107	103	0.15	
18	131	1.6		108	97	-0.13	
19	100	0.018		111	89	-0.53	
20	108	0.43		113	91	-0.43	
23	95	-0.23		115	96	-0.19	
25	100	0.030		117	105	0.25	
28	96	-0.21		119	99	-0.029	
32	70	-1.5		120	99	-0.041	
33	100	0.012					
34	98	-0.10					
41	99	-0.041					
42	102	0.11					
43	91	-0.44					
44	115	0.76					
50	100	0.0093					
51	98	-0.079					
52	108	0.41					
54	104	0.19					
55	98	-0.11					
57	89	-0.54					
59	85	-0.76					
60	100	0.011					
64	105	0.28					
65	103	0.14					
69	108	0.39					
71	100	0.0013					
73	99	-0.041					
75	107	0.36					
76	94	-0.31					
77	99	-0.038					
80	109	0.48					
82	92	-0.37					
83	92	-0.38					
84	92	-0.38					
87	100	0.0080					
88	101	0.059					
90	101	0.048					
92	101	0.059					
99	100	0.020					
100	89	-0.54					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	8.2
Relative standard deviation, %	8.3
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0



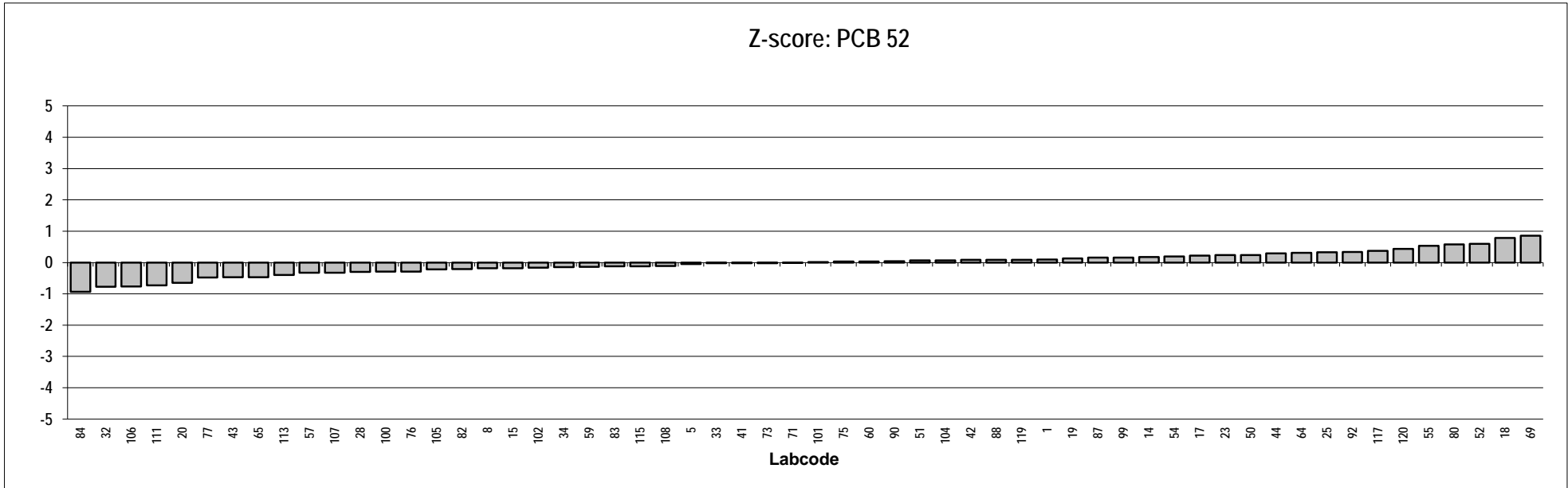
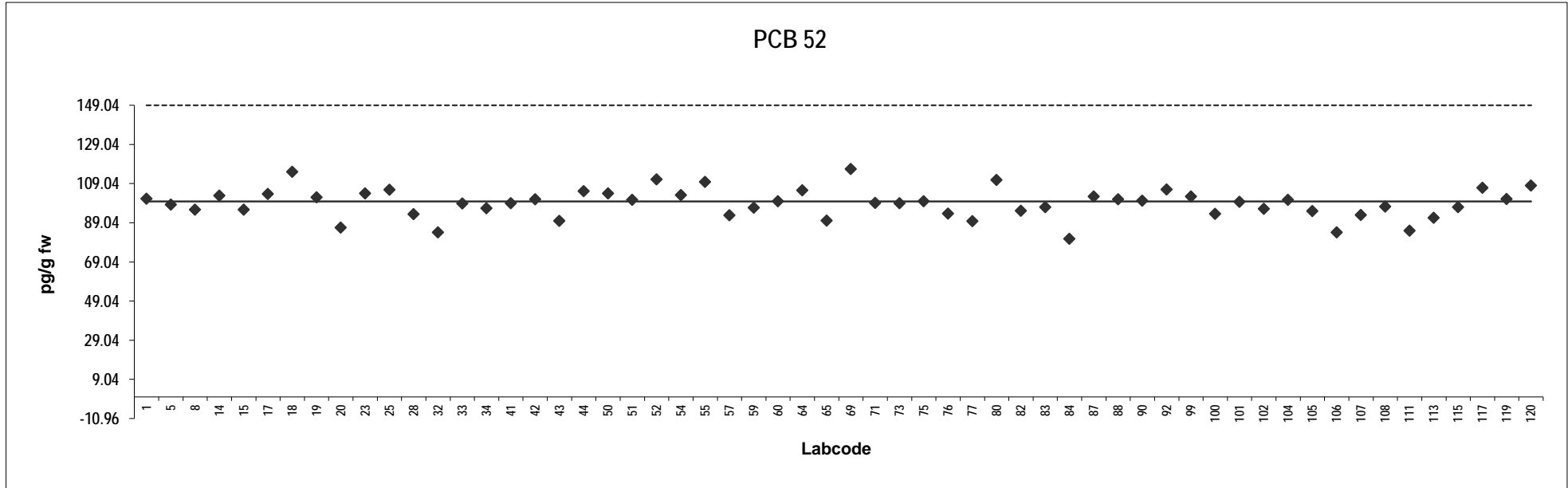
Analyte solution

Congener: PCB 52

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	101	0.094		101	100	0.012	
5	98	-0.053		102	96	-0.16	
8	96	-0.19		104	101	0.067	
14	103	0.17		105	95	-0.22	
15	96	-0.19		106	84	-0.77	
17	104	0.22		107	93	-0.32	
18	115	0.79		108	97	-0.11	
19	102	0.13		111	85	-0.73	
20	86	-0.65		113	92	-0.40	
23	104	0.23		115	97	-0.12	
25	106	0.32		117	107	0.38	
28	93	-0.30		119	101	0.089	
32	84	-0.77		120	108	0.43	
33	99	-0.024					
34	96	-0.15					
41	99	-0.018					
42	101	0.083					
43	90	-0.47					
44	105	0.29					
50	104	0.23					
51	101	0.063					
52	111	0.59					
54	103	0.19					
55	110	0.53					
57	93	-0.33					
59	97	-0.14					
60	100	0.034					
64	106	0.31					
65	90	-0.47					
69	116	0.86					
71	99	-0.012					
73	99	-0.018					
75	100	0.028					
76	94	-0.29					
77	90	-0.48					
80	111	0.58					
82	95	-0.21					
83	97	-0.12					
84	81	-0.94					
87	102	0.15					
88	101	0.083					
90	100	0.045					
92	106	0.33					
99	102	0.16					
100	94	-0.29					

Consensus statistics

Consensus median, pg/g	99
Median all values pg/g	99
Consensus mean, pg/g	99
Standard deviation, pg/g	7.4
Relative standard deviation, %	7.5
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0



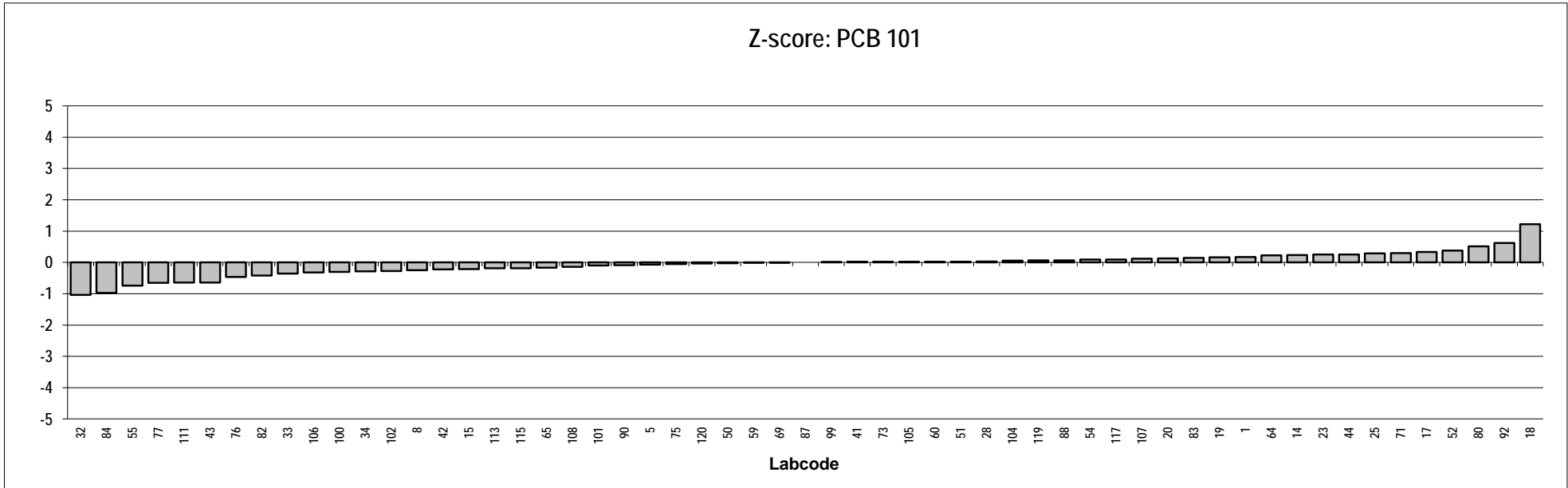
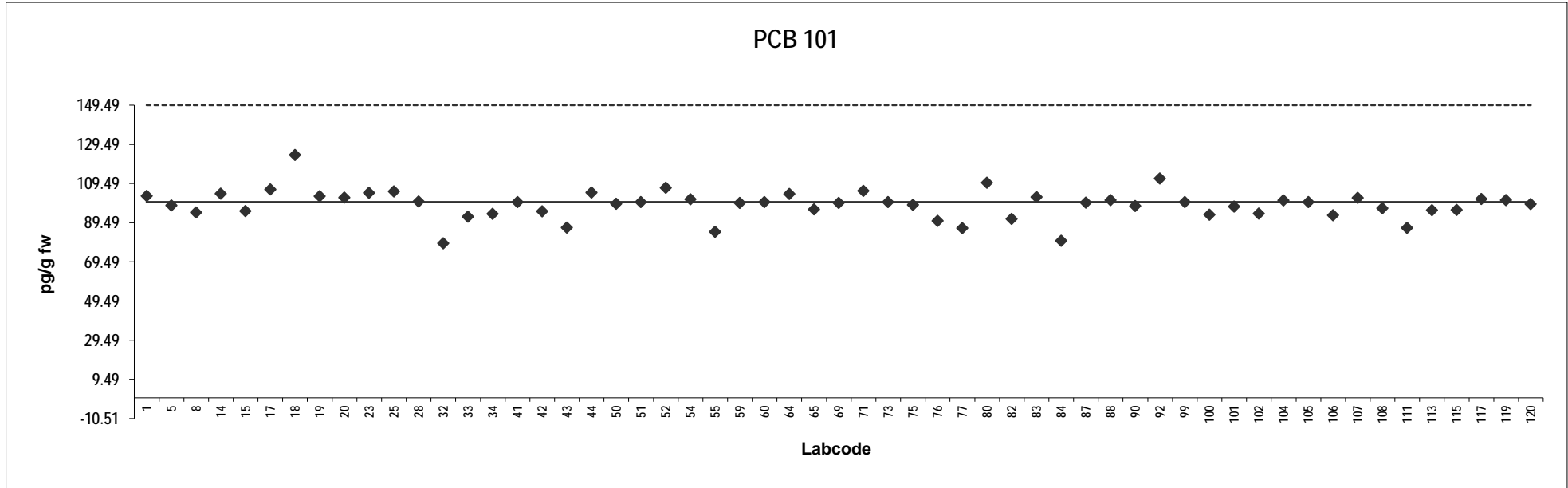
Analyte solution

Congener: PCB 101

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	103	0.17		102	94	-0.28	
5	98	-0.068		104	101	0.057	
8	95	-0.25		105	100	0.017	
14	104	0.23		106	93	-0.32	
15	95	-0.22		107	102	0.12	
17	106	0.34		108	97	-0.14	
18	124	1.2		111	87	-0.65	
19	103	0.16		113	96	-0.19	
20	102	0.13		115	96	-0.18	
23	105	0.25		117	102	0.095	
25	105	0.29		119	101	0.063	
28	100	0.031		120	99	-0.033	
32	79	-1.0					
33	93	-0.36					
34	94	-0.28					
41	100	0.017					
42	95	-0.22					
43	87	-0.64					
44	105	0.26					
50	99	-0.028					
51	100	0.019					
52	107	0.38					
54	101	0.089					
55	85	-0.74					
59	100	-0.0032					
60	100	0.017					
64	104	0.22					
65	96	-0.17					
69	100	-0.0022					
71	106	0.30					
73	100	0.017					
75	99	-0.054					
76	90	-0.46					
77	87	-0.65					
80	110	0.51					
82	91	-0.41					
83	103	0.14					
84	80	-0.97					
87	100	0.00					
88	101	0.067					
90	98	-0.087					
92	112	0.62					
99	100	0.016					
100	94	-0.31					
101	98	-0.10					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	7.4
Relative standard deviation, %	7.5
No. of values reported	57
No. of values removed	0
No. of reported non-detects	0



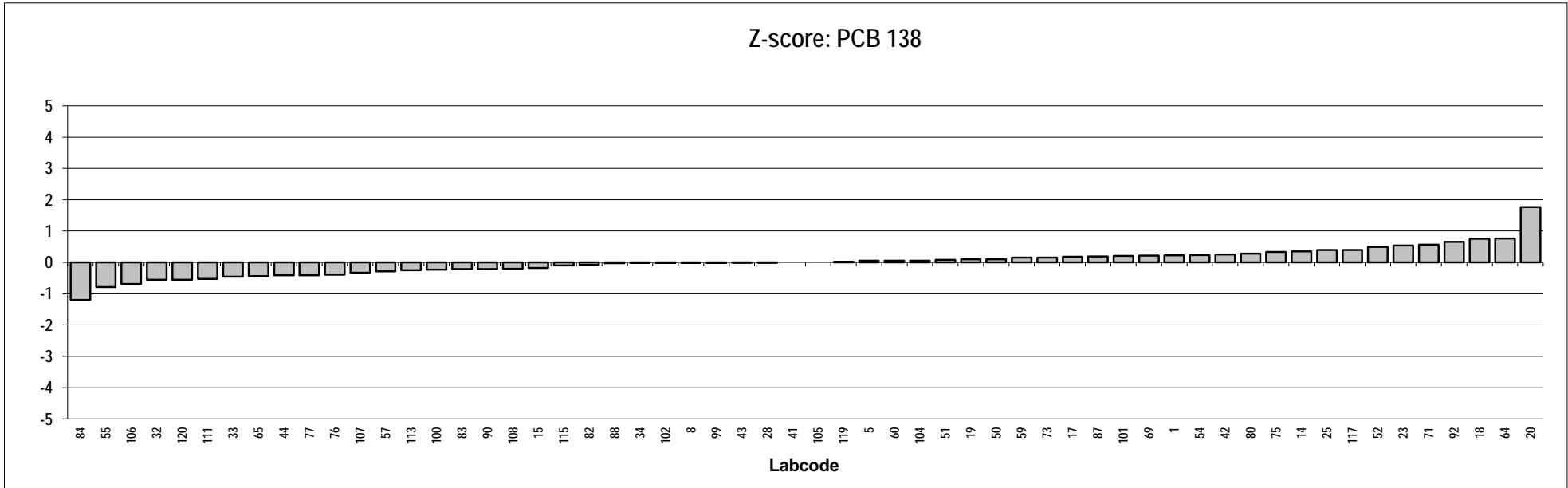
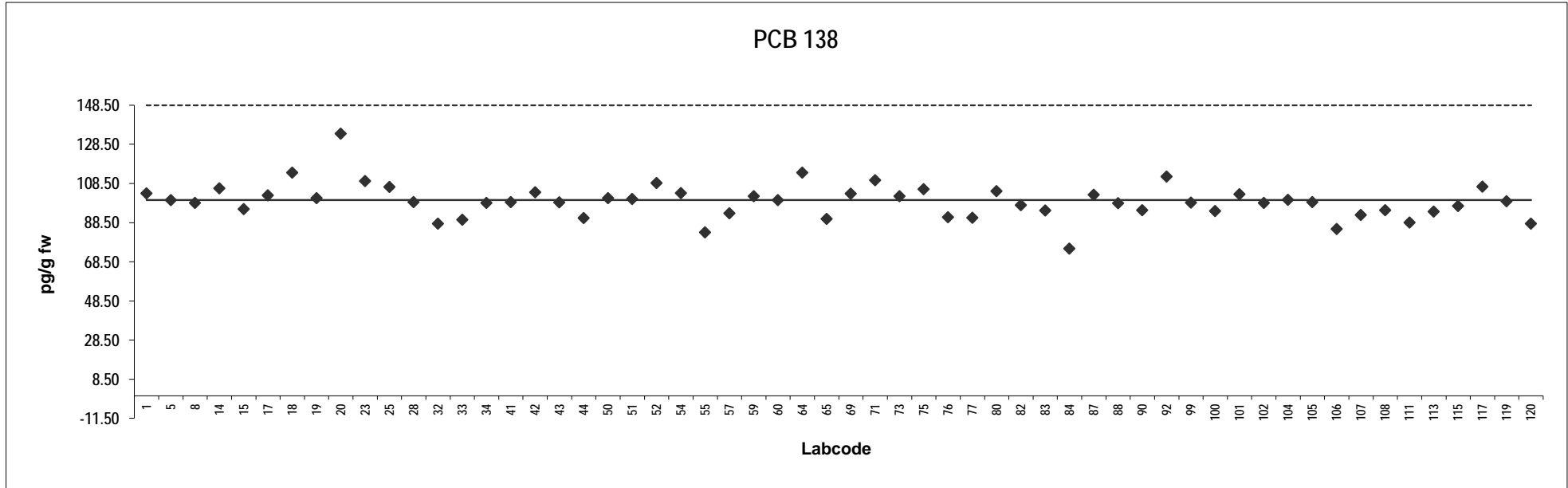
Analyte solution

Congener: PCB 138

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	103	0.22		101	103	0.20	
5	100	0.051		102	99	-0.020	
8	99	-0.019		104	100	0.054	
14	106	0.35		105	99	0.00	
15	95	-0.18		106	85	-0.69	
17	103	0.18		107	92	-0.33	
18	114	0.76		108	95	-0.21	
19	101	0.098		111	89	-0.53	
20	134	1.8		113	94	-0.25	
23	110	0.54		115	97	-0.10	
25	107	0.39		117	107	0.39	
28	99	-0.0036		119	99	0.021	
32	88	-0.56		120	88	-0.56	
33	90	-0.45					
34	99	-0.020					
41	99	0.00					
42	104	0.25					
43	99	-0.010					
44	91	-0.41					
50	101	0.10					
51	101	0.081					
52	109	0.49					
54	104	0.23					
55	83	-0.78					
57	93	-0.29					
59	102	0.15					
60	100	0.051					
64	114	0.76					
65	90	-0.43					
69	103	0.21					
71	110	0.57					
73	102	0.15					
75	106	0.34					
76	91	-0.39					
77	91	-0.41					
80	105	0.28					
82	97	-0.079					
83	95	-0.22					
84	75	-1.2					
87	103	0.19					
88	98	-0.030					
90	95	-0.21					
92	112	0.66					
99	99	-0.014					
100	94	-0.23					

Consensus statistics

Consensus median, pg/g	99
Median all values pg/g	99
Consensus mean, pg/g	99
Standard deviation, pg/g	8.8
Relative standard deviation, %	8.9
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0



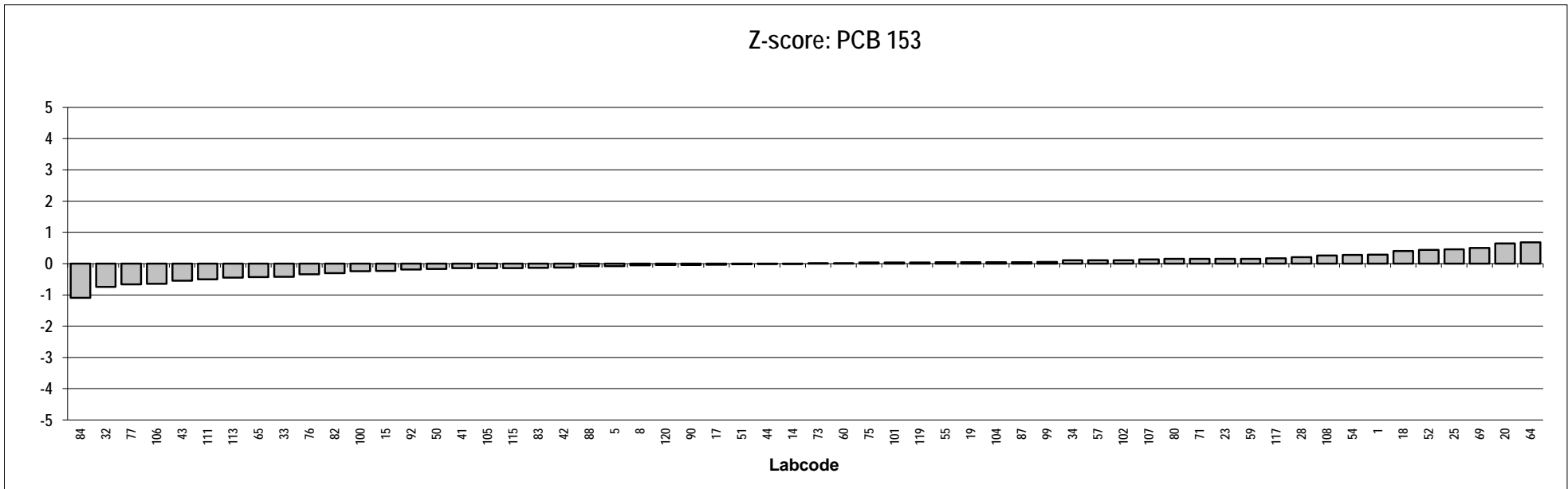
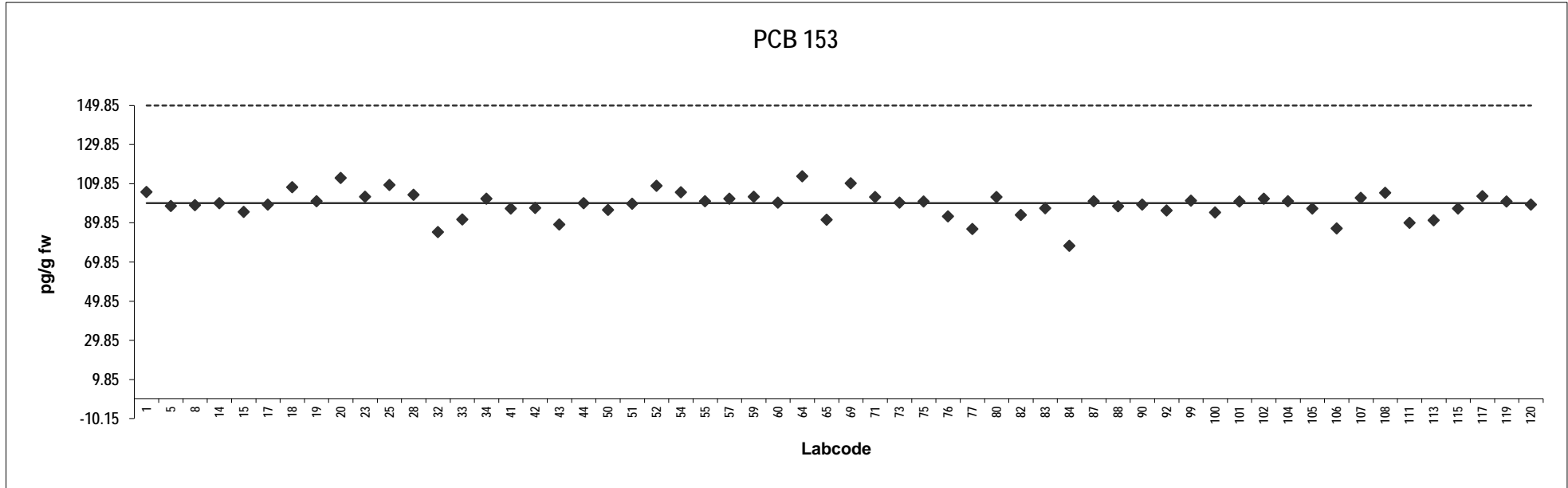
Analyte solution

Congener: PCB 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	106	0.28		101	101	0.037	
5	98	-0.080		102	102	0.11	
8	99	-0.054		104	101	0.046	
14	100	-0.0050		105	97	-0.15	
15	95	-0.23		106	87	-0.65	
17	99	-0.041		107	103	0.13	
18	108	0.41		108	105	0.26	
19	101	0.045		111	90	-0.51	
20	113	0.64		113	91	-0.45	
23	103	0.16		115	97	-0.15	
25	109	0.46		117	103	0.17	
28	104	0.21		119	101	0.038	
32	85	-0.75		120	99	-0.045	
33	91	-0.42					
34	102	0.11					
41	97	-0.15					
42	97	-0.13					
43	89	-0.55					
44	100	-0.0085					
50	96	-0.18					
51	99	-0.020					
52	109	0.44					
54	105	0.27					
55	101	0.040					
57	102	0.11					
59	103	0.16					
60	100	0.0053					
64	114	0.68					
65	91	-0.43					
69	110	0.50					
71	103	0.15					
73	100	0.0050					
75	101	0.034					
76	93	-0.34					
77	87	-0.67					
80	103	0.15					
82	94	-0.31					
83	97	-0.14					
84	78	-1.1					
87	101	0.047					
88	98	-0.085					
90	99	-0.045					
92	96	-0.19					
99	101	0.056					
100	95	-0.24					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	99
Standard deviation, pg/g	6.6
Relative standard deviation, %	6.7
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0



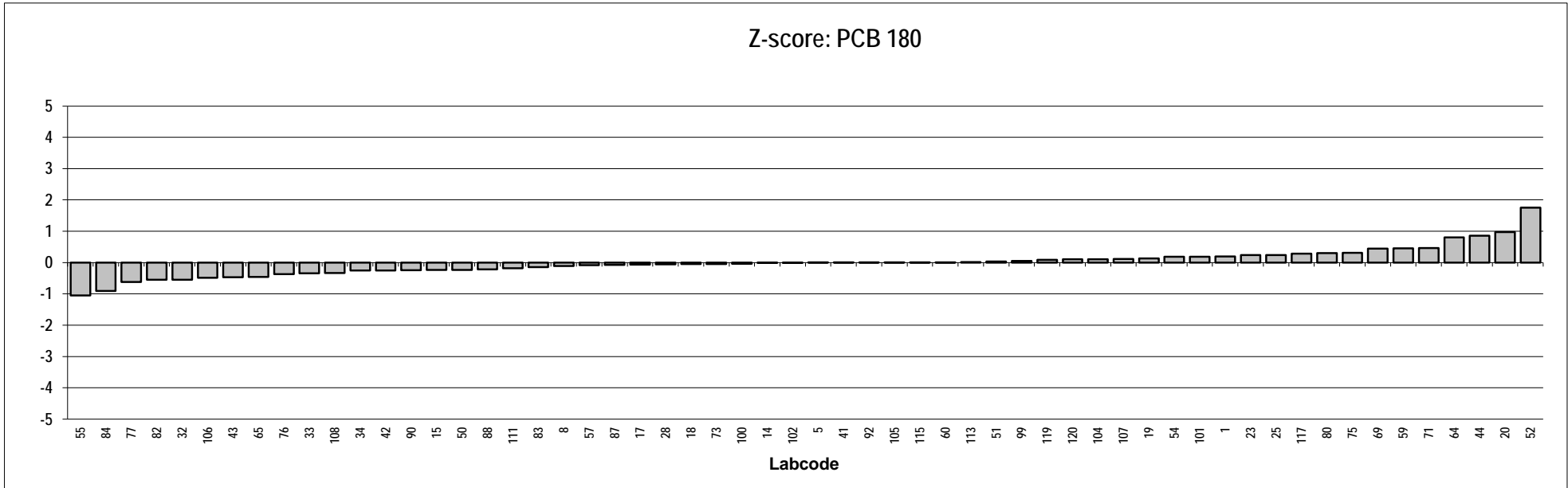
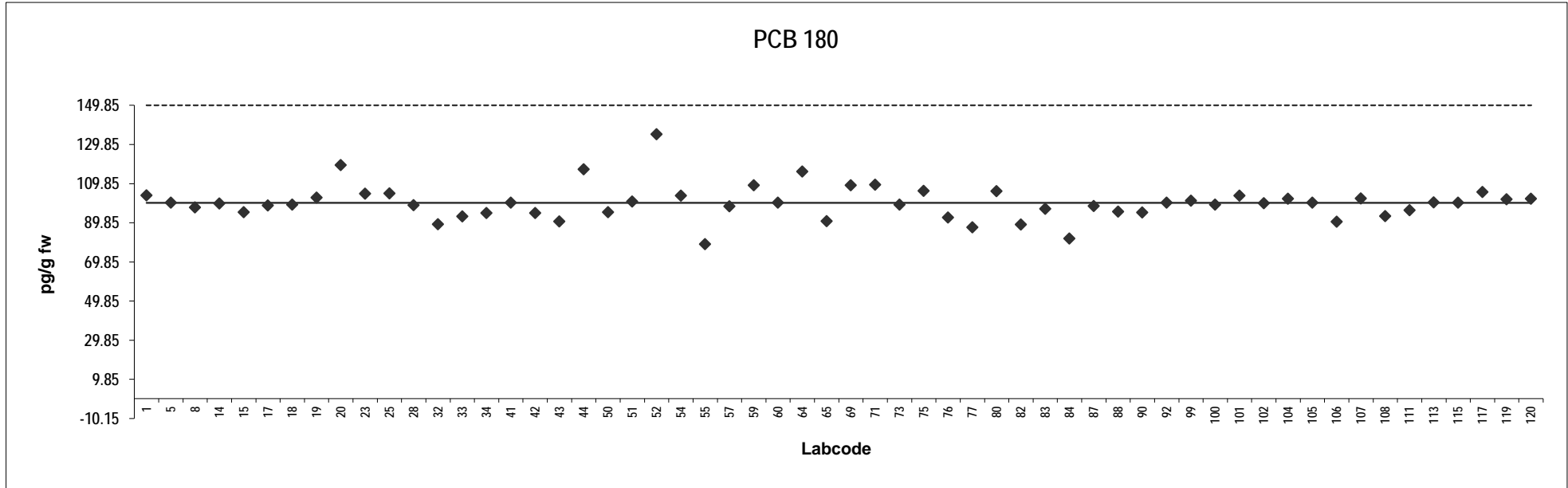
Analyte solution

Congener: PCB 180

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	104	0.19		101	104	0.18	
5	100	0.0050		102	100	-0.0050	
8	98	-0.11		104	102	0.11	
14	100	-0.015		105	100	0.0050	
15	95	-0.24		106	90	-0.48	
17	99	-0.066		107	102	0.12	
18	99	-0.045		108	93	-0.34	
19	103	0.13		111	96	-0.19	
20	119	0.97		113	100	0.015	
23	105	0.24		115	100	0.0050	
25	105	0.24		117	106	0.28	
28	99	-0.054		119	102	0.091	
32	89	-0.55		120	102	0.11	
33	93	-0.35					
34	95	-0.26					
41	100	0.0050					
42	95	-0.26					
43	91	-0.47					
44	117	0.86					
50	95	-0.24					
51	101	0.037					
52	135	1.8					
54	104	0.18					
55	79	-1.1					
57	98	-0.085					
59	109	0.46					
60	100	0.0068					
64	116	0.80					
65	91	-0.46					
69	109	0.45					
71	109	0.47					
73	99	-0.045					
75	106	0.31					
76	92	-0.37					
77	87	-0.62					
80	106	0.30					
82	89	-0.55					
83	97	-0.15					
84	82	-0.91					
87	98	-0.078					
88	96	-0.22					
90	95	-0.25					
92	100	0.0050					
99	101	0.055					
100	99	-0.040					

Consensus statistics

Consensus median, pg/g	100
Median all values pg/g	100
Consensus mean, pg/g	100
Standard deviation, pg/g	8.8
Relative standard deviation, %	8.8
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0



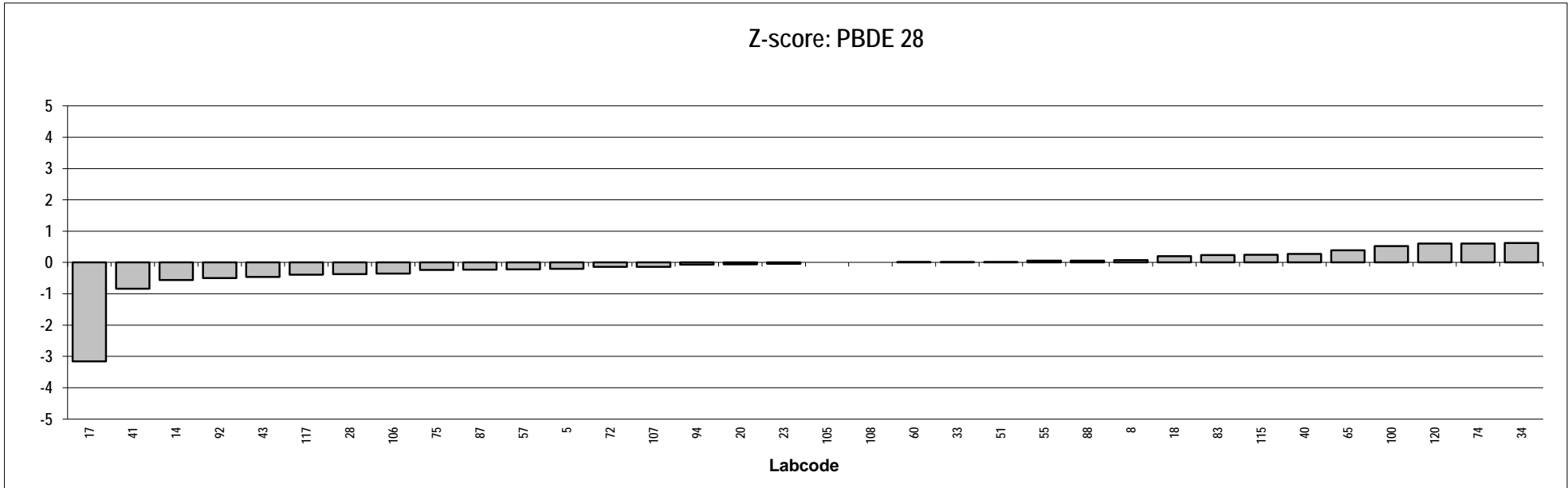
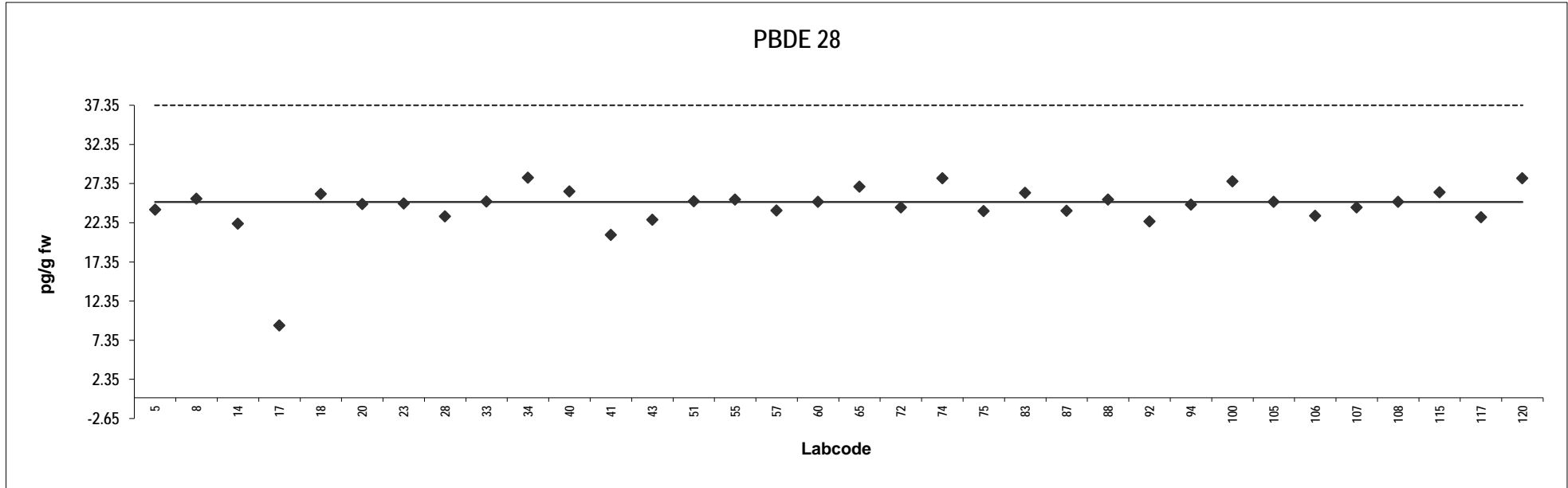
Analyte solution

Congener: PBDE 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	24	-0.20					
8	25	0.080					
14	22	-0.56					
17	9.2	-3.2	Outlier				
18	26	0.20					
20	25	-0.056					
23	25	-0.040					
28	23	-0.37					
33	25	0.0060					
34	28	0.62					
40	26	0.27					
41	21	-0.84					
43	23	-0.46					
51	25	0.016					
55	25	0.060					
57	24	-0.22					
60	25	0.0047					
65	27	0.39					
72	24	-0.14					
74	28	0.61					
75	24	-0.23					
83	26	0.23					
87	24	-0.23					
88	25	0.060					
92	23	-0.50					
94	25	-0.069					
100	28	0.52					
105	25	0.00					
106	23	-0.36					
107	24	-0.14					
108	25	0.00					
115	26	0.24					
117	23	-0.39					
120	28	0.60					

Consensus statistics

Consensus median, pg/g	25
Median all values pg/g	25
Consensus mean, pg/g	25
Standard deviation, pg/g	1.7
Relative standard deviation, %	7.0
No. of values reported	34
No. of values removed	1
No. of reported non-detects	0



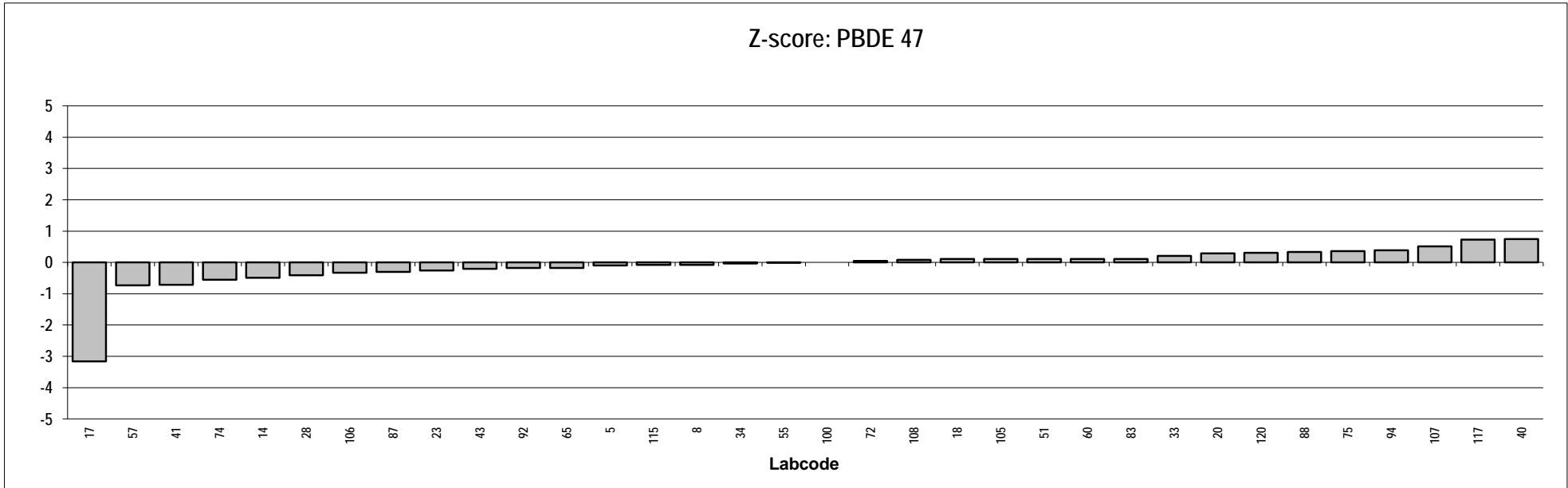
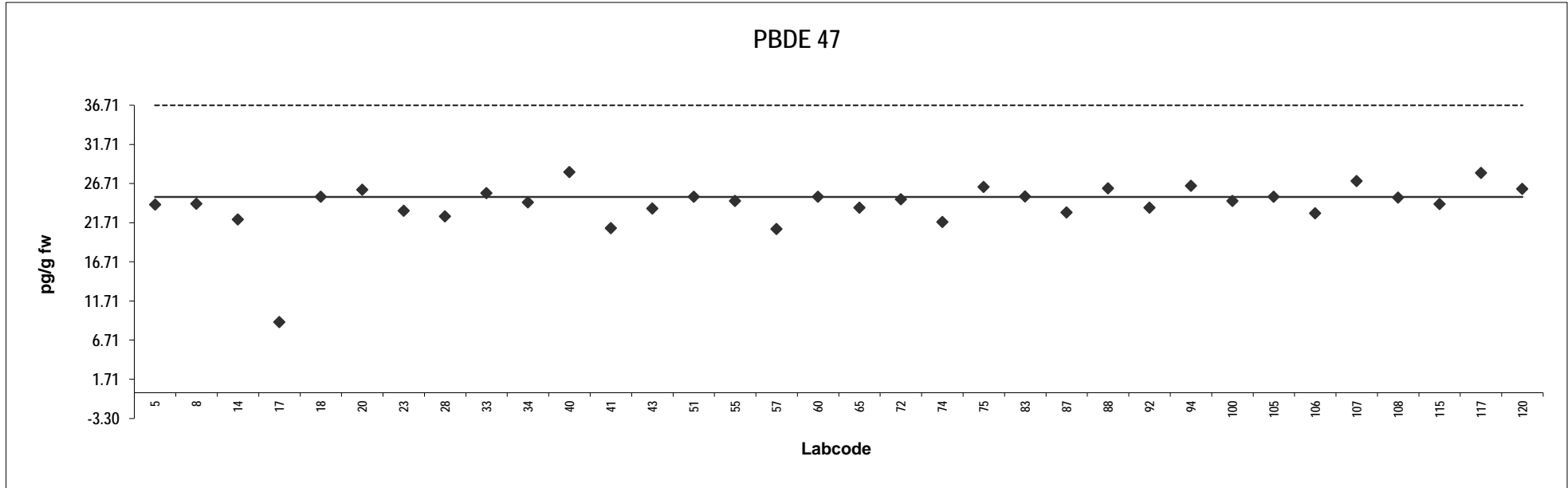
Analyte solution

Congener: PBDE 47

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	24	-0.098					
8	24	-0.078					
14	22	-0.49					
17	9.0	-3.2	Outlier				
18	25	0.11					
20	26	0.29					
23	23	-0.26					
28	22	-0.41					
33	25	0.20					
34	24	-0.037					
40	28	0.75					
41	21	-0.71					
43	24	-0.20					
51	25	0.11					
55	24	-0.0041					
57	21	-0.73					
60	25	0.11					
65	24	-0.18					
72	25	0.045					
74	22	-0.55					
75	26	0.36					
83	25	0.11					
87	23	-0.30					
88	26	0.33					
92	24	-0.18					
94	26	0.39					
100	24	0.00					
105	25	0.11					
106	23	-0.33					
107	27	0.51					
108	25	0.086					
115	24	-0.082					
117	28	0.73					
120	26	0.31					

Consensus statistics

Consensus median, pg/g	24
Median all values pg/g	24
Consensus mean, pg/g	24
Standard deviation, pg/g	1.8
Relative standard deviation, %	7.2
No. of values reported	34
No. of values removed	1
No. of reported non-detects	0



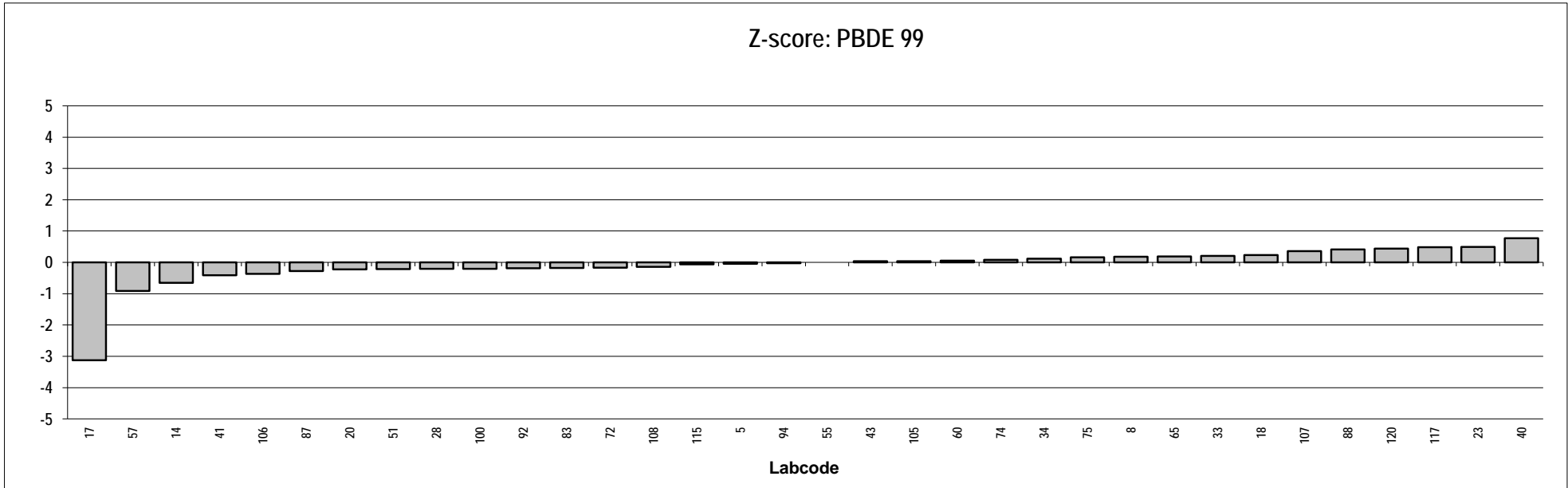
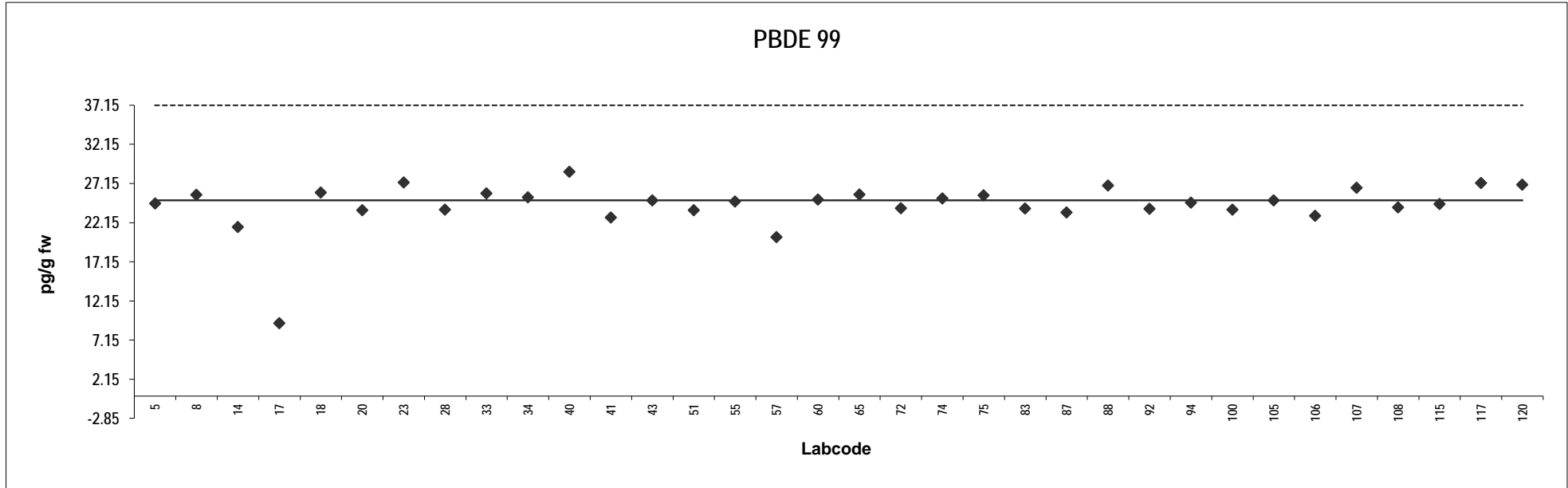
Analyte solution

Congener: PBDE 99

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	25	-0.046					
8	26	0.18					
14	22	-0.65					
17	9.3	-3.1	Outlier				
18	26	0.24					
20	24	-0.22					
23	27	0.50					
28	24	-0.21					
33	26	0.21					
34	25	0.11					
40	29	0.77					
41	23	-0.41					
43	25	0.034					
51	24	-0.22					
55	25	0.00					
57	20	-0.91					
60	25	0.052					
65	26	0.19					
72	24	-0.17					
74	25	0.083					
75	26	0.16					
83	24	-0.18					
87	23	-0.28					
88	27	0.42					
92	24	-0.19					
94	25	-0.025					
100	24	-0.21					
105	25	0.034					
106	23	-0.36					
107	27	0.36					
108	24	-0.15					
115	25	-0.058					
117	27	0.48					
120	27	0.44					

Consensus statistics

Consensus median, pg/g	25
Median all values pg/g	25
Consensus mean, pg/g	25
Standard deviation, pg/g	1.7
Relative standard deviation, %	6.8
No. of values reported	34
No. of values removed	1
No. of reported non-detects	0



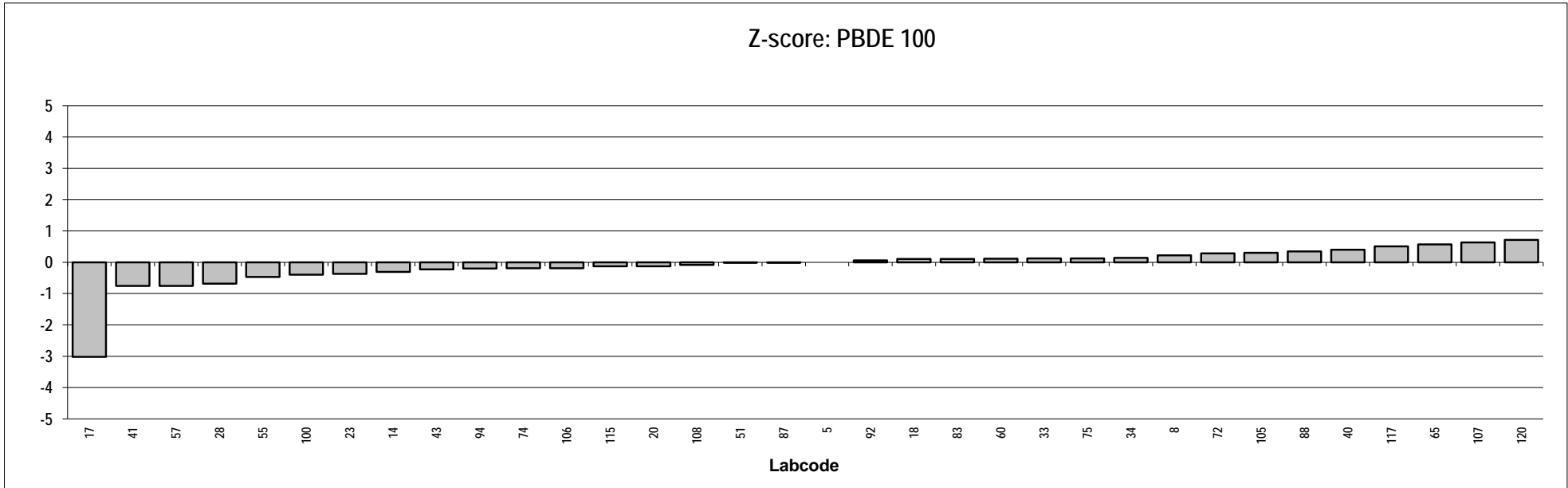
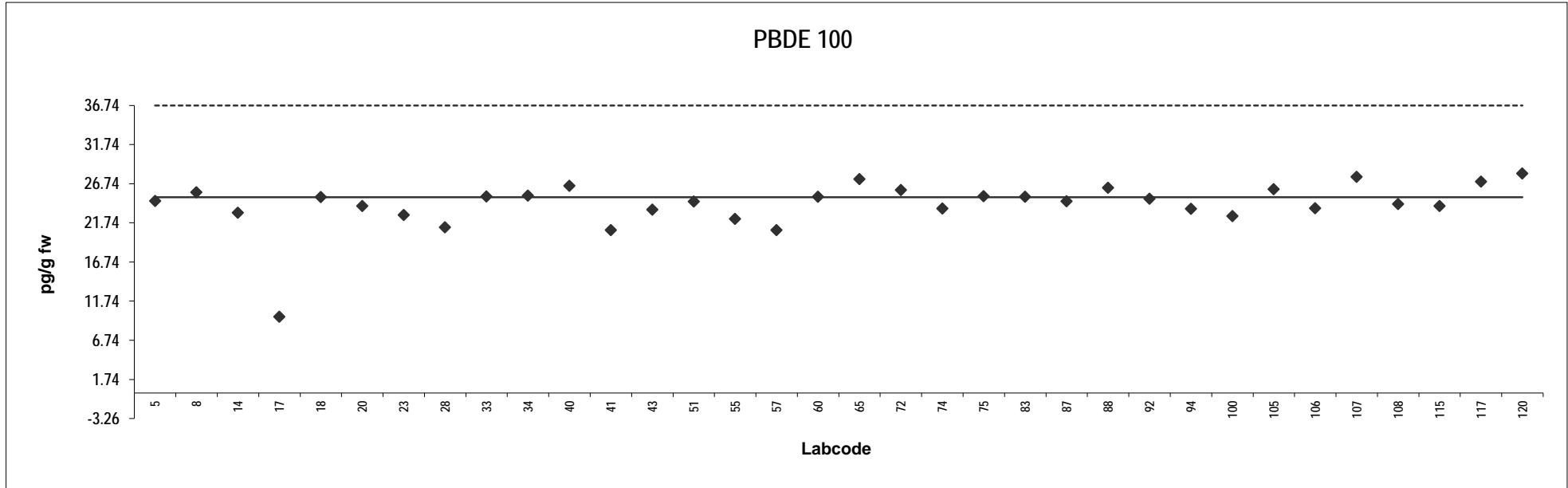
Analyte solution

Congener: PBDE 100

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	25	0.00					
8	26	0.22					
14	23	-0.31					
17	9.7	-3.0	Outlier				
18	25	0.10					
20	24	-0.13					
23	23	-0.37					
28	21	-0.68					
33	25	0.12					
34	25	0.14					
40	26	0.40					
41	21	-0.76					
43	23	-0.22					
51	24	-0.015					
55	22	-0.47					
57	21	-0.76					
60	25	0.11					
65	27	0.57					
72	26	0.29					
74	24	-0.19					
75	25	0.12					
83	25	0.11					
87	24	-0.0024					
88	26	0.35					
92	25	0.061					
94	24	-0.20					
100	23	-0.40					
105	26	0.31					
106	24	-0.19					
107	28	0.63					
108	24	-0.082					
115	24	-0.13					
117	27	0.51					
120	28	0.71					

Consensus statistics

Consensus median, pg/g	25
Median all values pg/g	24
Consensus mean, pg/g	24
Standard deviation, pg/g	1.8
Relative standard deviation, %	7.5
No. of values reported	34
No. of values removed	1
No. of reported non-detects	0



Analyte solution

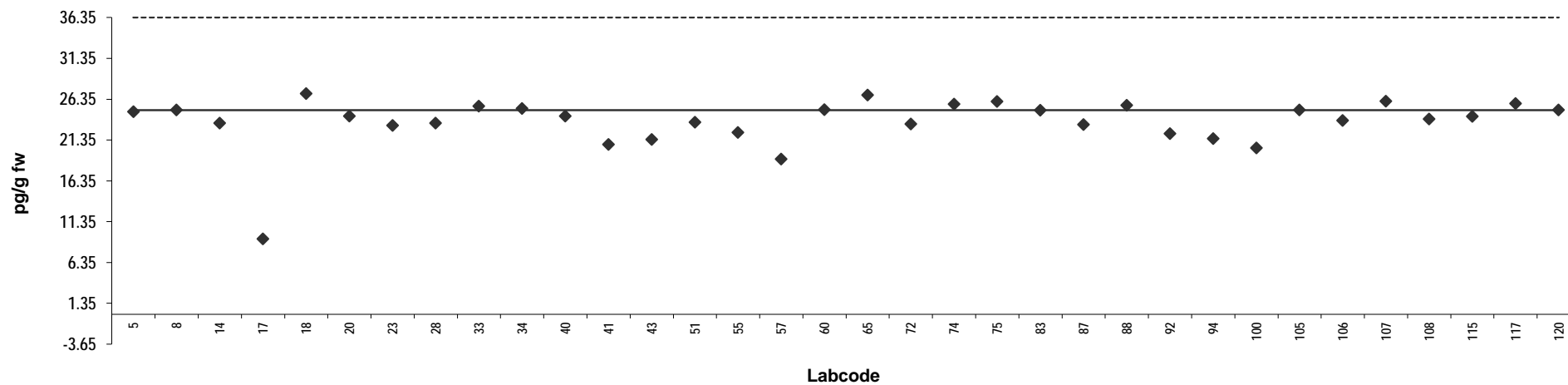
Congener: PBDE 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	25	0.11					
8	25	0.15					
14	23	-0.18					
17	9.2	-3.1	Outlier				
18	27	0.57					
20	24	0.00					
23	23	-0.24					
28	23	-0.18					
33	25	0.25					
34	25	0.20					
40	24	0.00					
41	21	-0.71					
43	21	-0.59					
51	24	-0.15					
55	22	-0.41					
57	19	-1.1					
60	25	0.16					
65	27	0.54					
72	23	-0.20					
74	26	0.30					
75	26	0.37					
83	25	0.15					
87	23	-0.22					
88	26	0.28					
92	22	-0.44					
94	21	-0.57					
100	20	-0.81					
105	25	0.15					
106	24	-0.11					
107	26	0.38					
108	24	-0.072					
115	24	-0.0070					
117	26	0.32					
120	25	0.15					

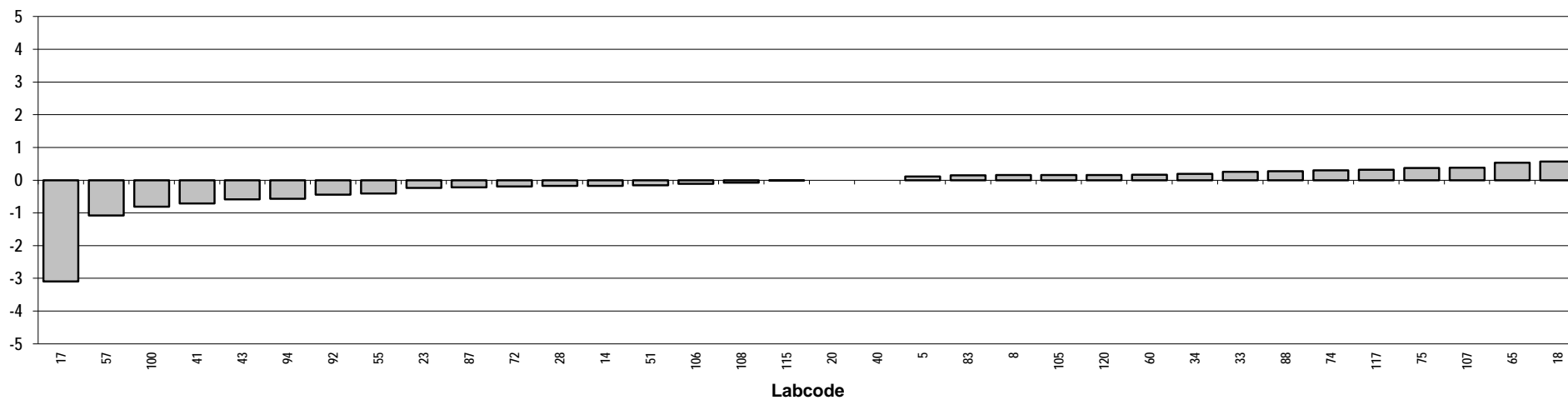
Consensus statistics

Consensus median, pg/g	24
Median all values pg/g	24
Consensus mean, pg/g	24
Standard deviation, pg/g	1.9
Relative standard deviation, %	7.9
No. of values reported	34
No. of values removed	1
No. of reported non-detects	0

PBDE 153



Z-score: PBDE 153



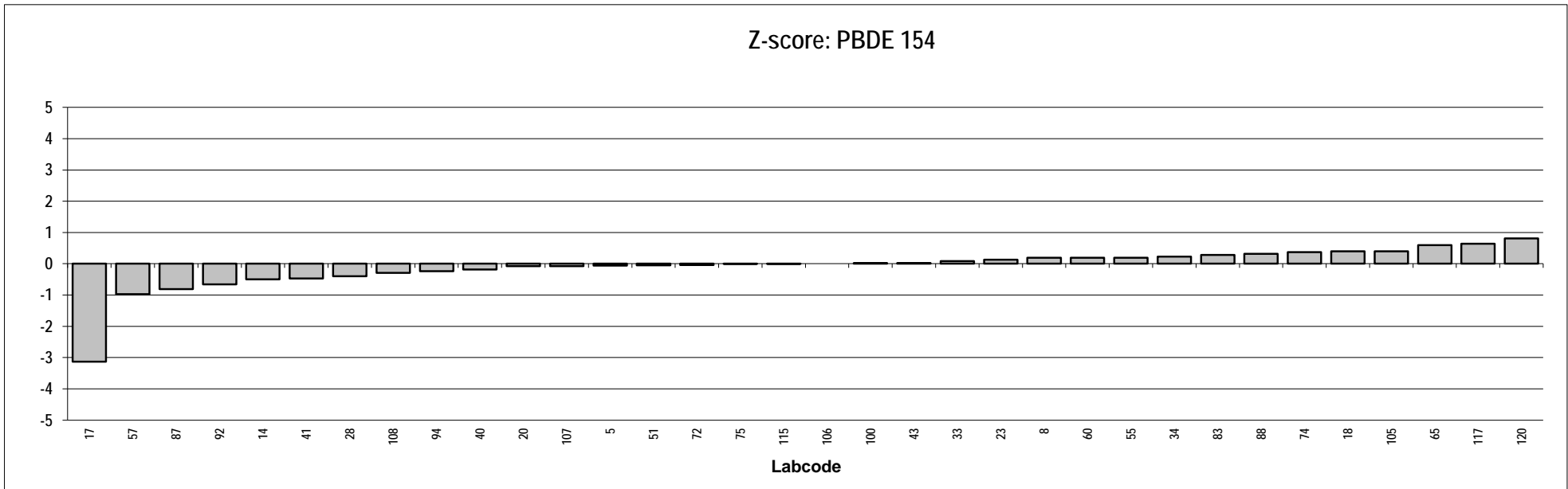
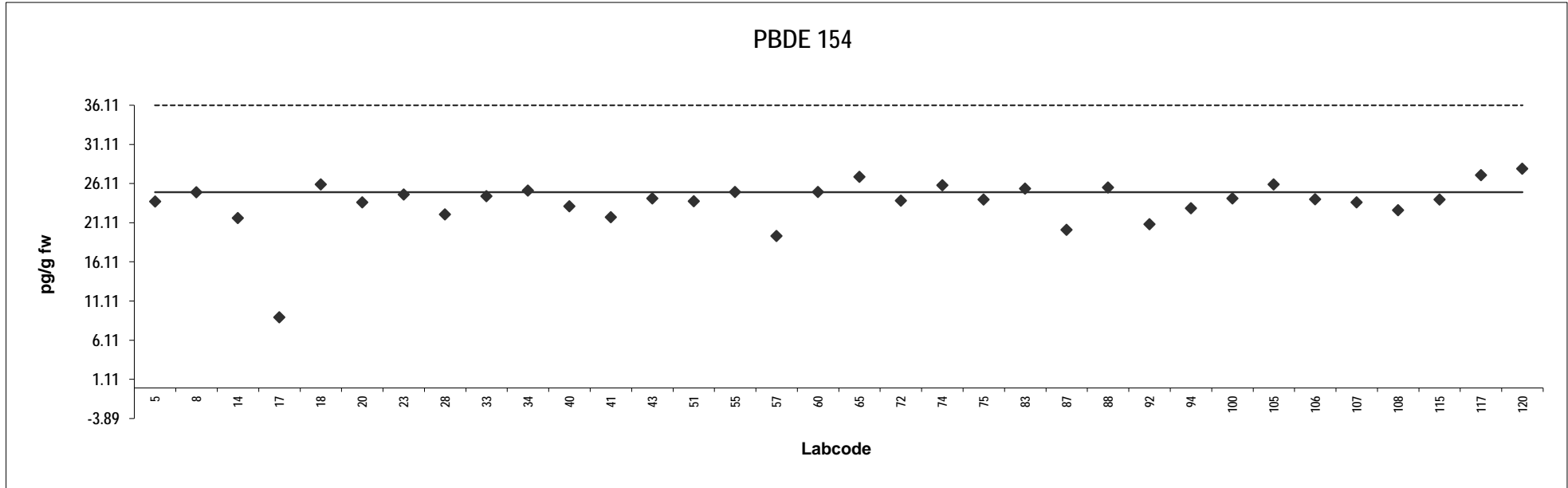
Analyte solution

Congener: PBDE 154

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	24	-0.060					
8	25	0.19					
14	22	-0.50					
17	9.0	-3.1	Outlier				
18	26	0.40					
20	24	-0.081					
23	25	0.13					
28	22	-0.40					
33	25	0.085					
34	25	0.23					
40	23	-0.18					
41	22	-0.48					
43	24	0.023					
51	24	-0.052					
55	25	0.19					
57	19	-0.97					
60	25	0.19					
65	27	0.60					
72	24	-0.039					
74	26	0.37					
75	24	-0.0062					
83	25	0.28					
87	20	-0.81					
88	26	0.31					
92	21	-0.66					
94	23	-0.23					
100	24	0.021					
105	26	0.40					
106	24	0.00					
107	24	-0.081					
108	23	-0.29					
115	24	-0.0062					
117	27	0.64					
120	28	0.81					

Consensus statistics

Consensus median, pg/g	24
Median all values pg/g	24
Consensus mean, pg/g	24
Standard deviation, pg/g	1.9
Relative standard deviation, %	8.0
No. of values reported	34
No. of values removed	1
No. of reported non-detects	0



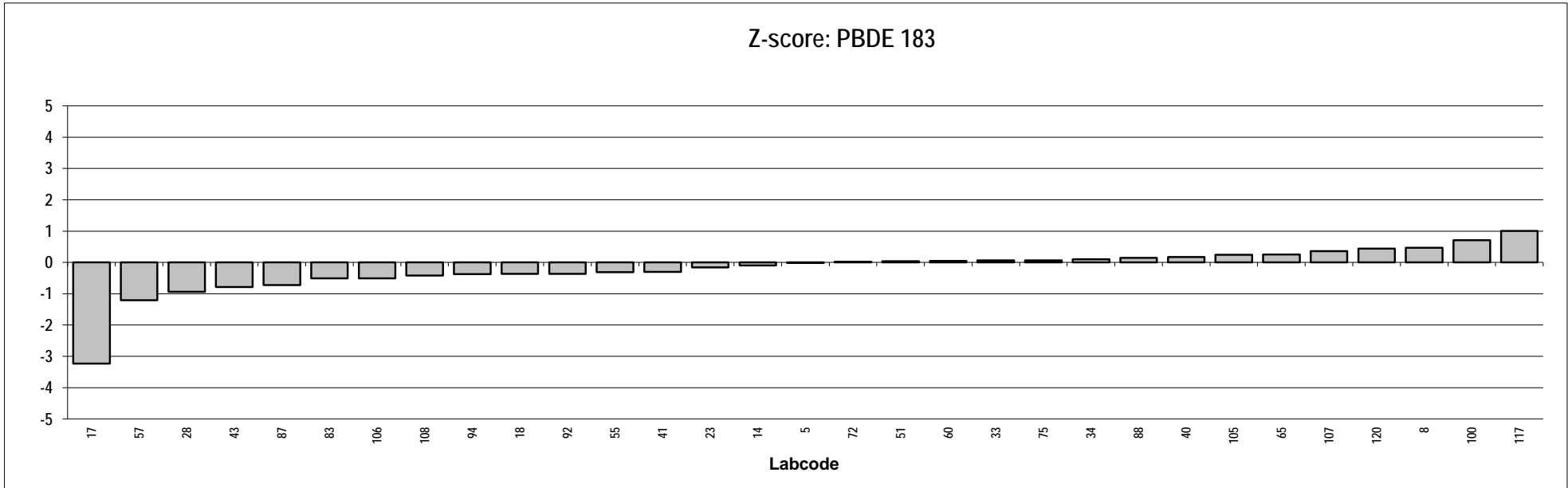
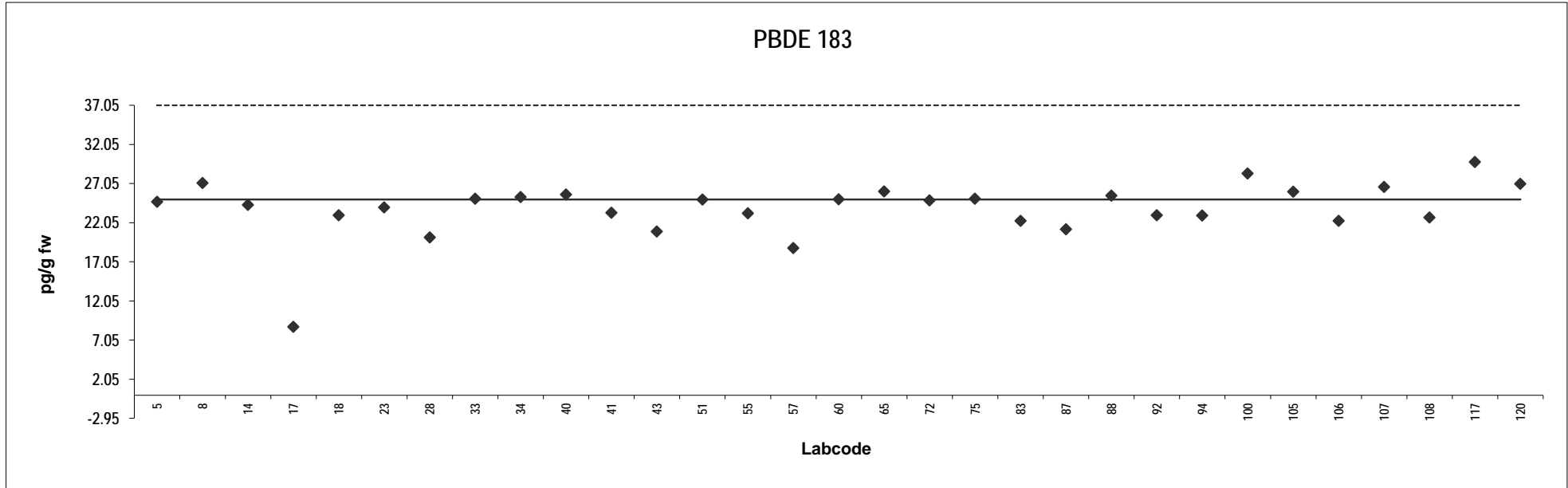
Analyte solution

Congener: PBDE 183

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	25	-0.020					
8	27	0.46					
14	24	-0.10					
17	8.8	-3.2	Outlier				
18	23	-0.36					
23	24	-0.16					
28	20	-0.94					
33	25	0.063					
34	25	0.10					
40	26	0.17					
41	23	-0.30					
43	21	-0.79					
51	25	0.040					
55	23	-0.31					
57	19	-1.2					
60	25	0.045					
65	26	0.25					
72	25	0.020					
75	25	0.063					
83	22	-0.51					
87	21	-0.72					
88	26	0.14					
92	23	-0.36					
94	23	-0.37					
100	28	0.71					
105	26	0.24					
106	22	-0.51					
107	27	0.36					
108	23	-0.42					
117	30	1.0					
120	27	0.44					

Consensus statistics

Consensus median, pg/g	25
Median all values pg/g	25
Consensus mean, pg/g	24
Standard deviation, pg/g	2.4
Relative standard deviation, %	9.8
No. of values reported	31
No. of values removed	1
No. of reported non-detects	0



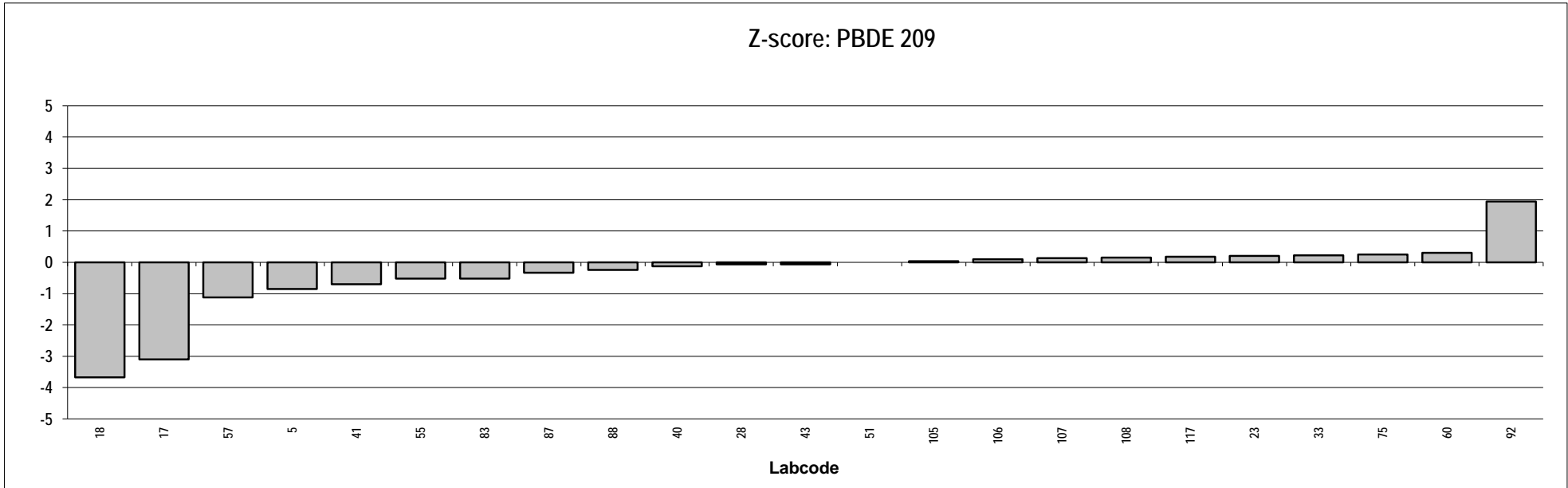
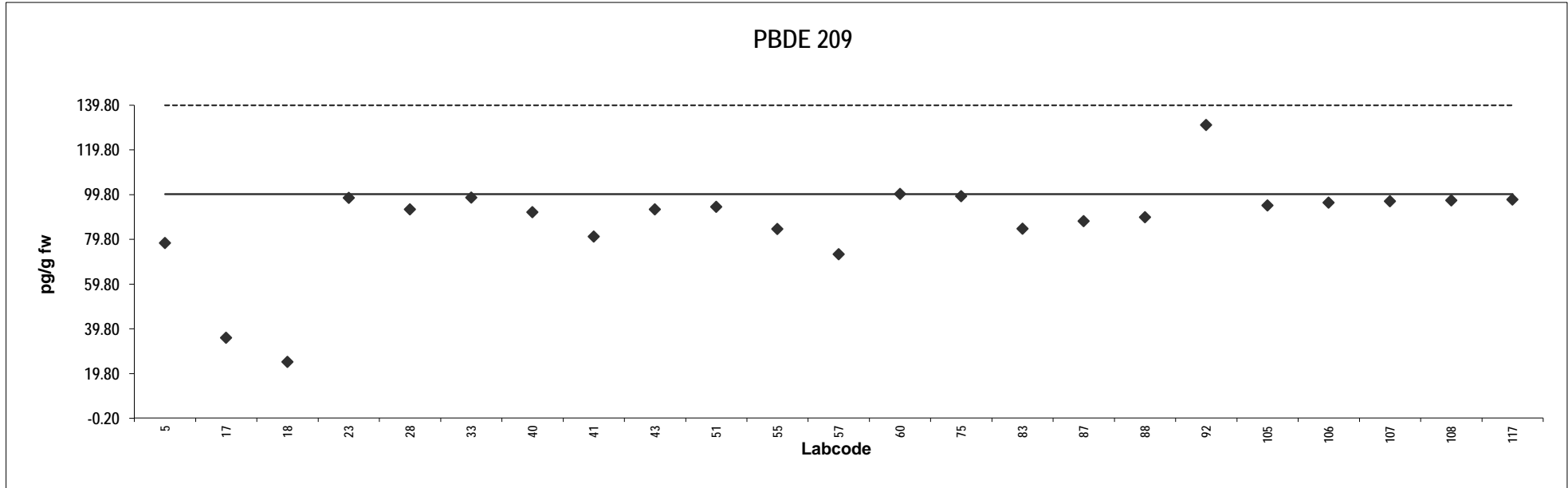
Analyte solution

Congener: PBDE 209

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	78	-0.86					
17	36	-3.1	Outlier				
18	25	-3.7	Outlier				
23	98	0.21					
28	93	-0.063					
33	99	0.22					
40	92	-0.13					
41	81	-0.70					
43	93	-0.061					
51	94	0.00					
55	84	-0.52					
57	73	-1.1					
60	100	0.30					
75	99	0.25					
83	85	-0.52					
87	88	-0.34					
88	90	-0.25					
92	131	1.9					
105	95	0.035					
106	96	0.099					
107	97	0.13					
108	97	0.15					
117	98	0.18					

Consensus statistics

Consensus median, pg/g	94
Median all values pg/g	93
Consensus mean, pg/g	93
Standard deviation, pg/g	11
Relative standard deviation, %	12
No. of values reported	23
No. of values removed	2
No. of reported non-detects	0



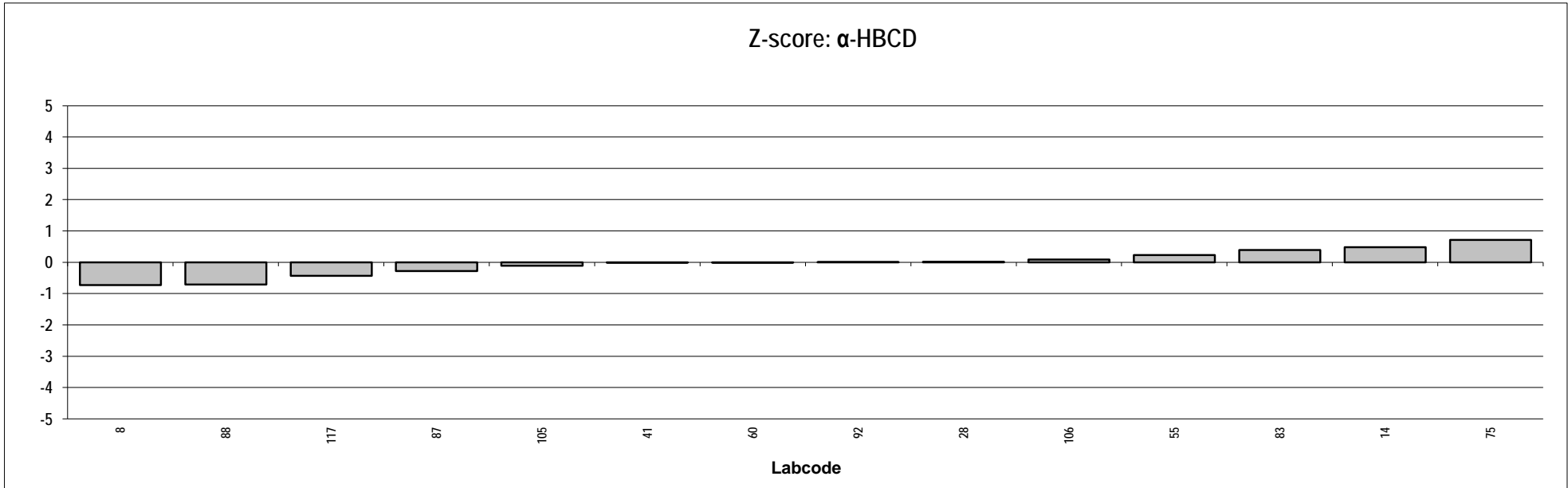
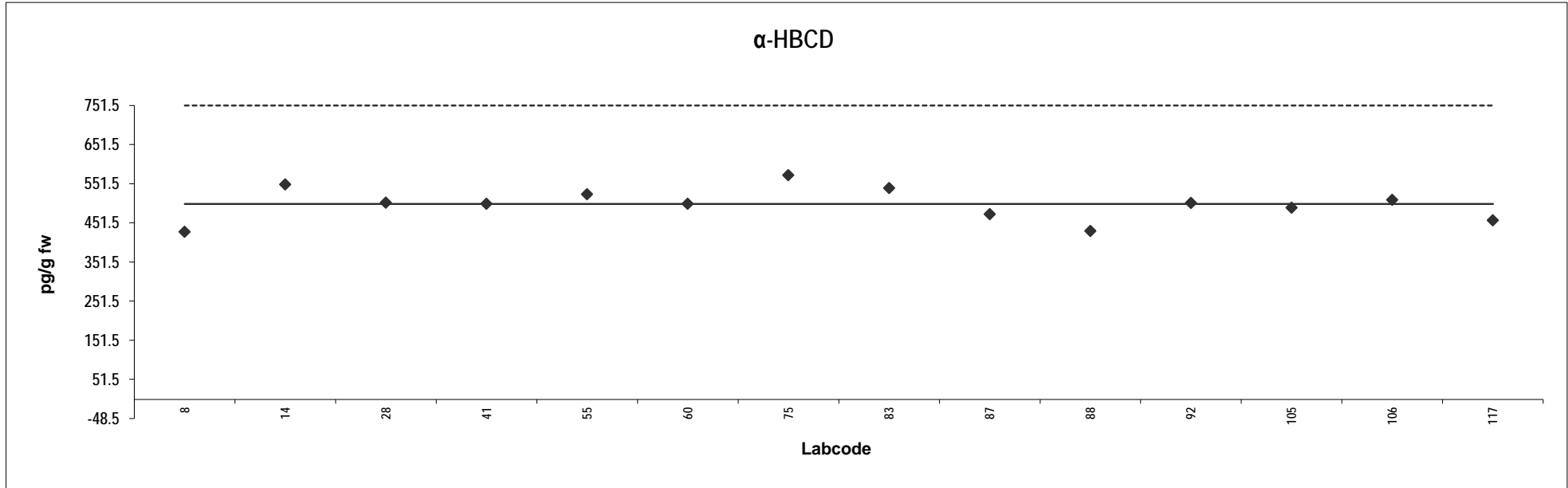
Analyte solution

Congener: α -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	428	-0.73					
14	549	0.48					
28	503	0.018					
41	500	-0.013					
55	524	0.23					
60	500	-0.0098					
75	573	0.72					
83	540	0.39					
87	473	-0.28					
88	430	-0.71					
92	502	0.0098					
105	490	-0.11					
106	510	0.090					
117	458	-0.43					

Consensus statistics

Consensus median, pg/g	501
Median all values pg/g	501
Consensus mean, pg/g	499
Standard deviation, pg/g	42
Relative standard deviation, %	8.4
No. of values reported	14
No. of values removed	0
No. of reported non-detects	0



Appendix 2:

Presentation of results
for Sheep meat-2017

Appendix 2: Presentation of results: Sheep meat-2017

Statistic calculations for PCDDs, PCDFs and dioxin-like PCBs

For each congener, the outliers were removed and the consensus value was calculated according to the following procedure:

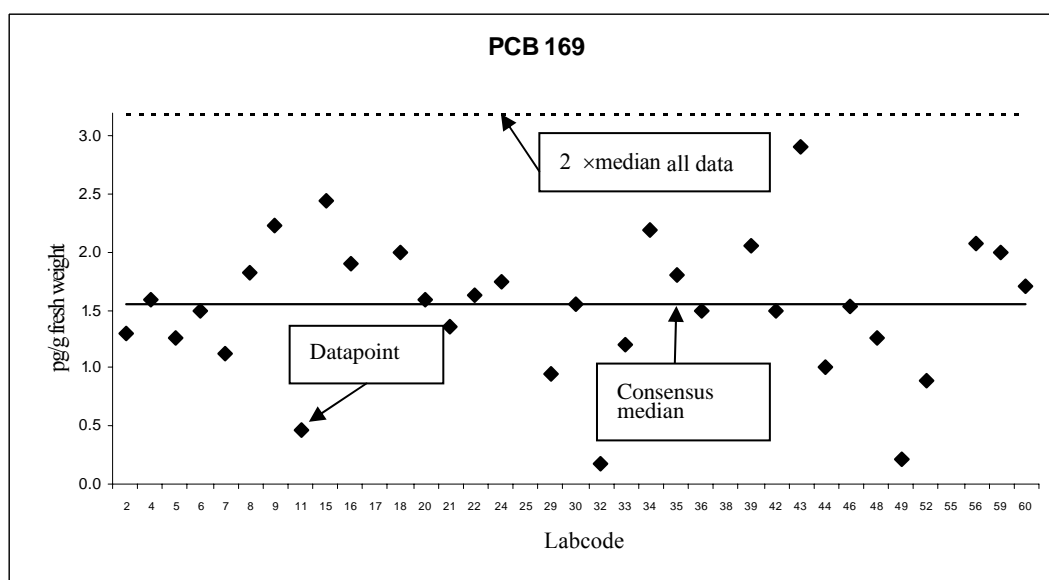
1. The median was calculated from all the reported data, using the detection limit as concentration for non-detected congeners.
2. Values exceeding $2 \times$ this median were defined as outliers and removed from the data set.
3. Median, mean and standard deviation were re-calculated from the remaining data. This second median was called consensus.

Statistic calculations for indicator PCBs, PBDEs and HBCD

For each congener, the outliers were removed and the consensus value was calculated according to the following procedure:

1. The median was calculated from all the reported data, using the detection limit as concentration for non-detected congeners (NDs).
2. Values exceeding $2 \times$ this median were defined as outliers and removed from the data set. The NDs were also removed.
3. Median, mean and standard deviation were re-calculated from the remaining data. This second median was called consensus.
4. For comparison, median, mean and standard deviation were also calculated without removing NDs.

The diagram shows the reported data up to approximately the limit for outliers ($2 \times$ the first median).



Z-Scores of individual congeners

Z-scores of each congener were calculated for each laboratory according to the following equation:

$$z = (x - X)/\sigma$$

where x = reported value; X = assigned value (consensus); σ = target value for standard deviation. A σ of 20% of the consensus was used, i.e. z-scores between +1 and -1 reflect a deviation of $\pm 20\%$ from the consensus value.

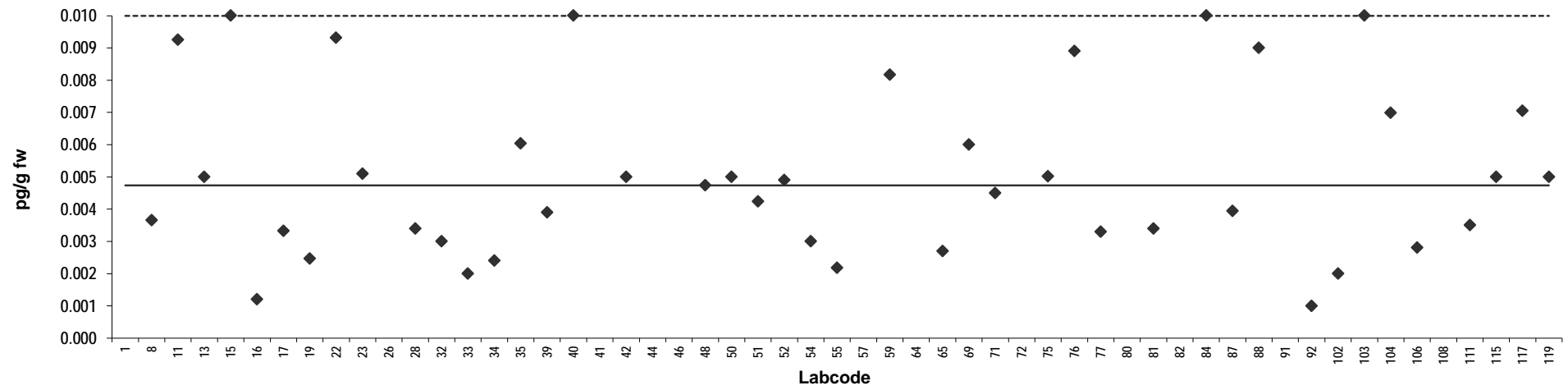
Sheep meat
Congener: 2,3,7,8 TCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.012	7.1	Outlier,ND	92	0.0010	-3.9	ND
8	0.0037	-1.1		102	0.0020	-2.9	ND
11	0.0092	4.8	ND	103	0.010	5.5	ND
13	0.0050	0.27	ND	104	0.0070	2.4	ND
15	0.010	5.5	ND	106	0.0028	-2.0	
16	0.0012	-3.7	ND	108	0.013	8.6	Outlier,ND
17	0.0033	-1.5		111	0.0035	-1.3	ND
19	0.0025	-2.4		115	0.0050	0.27	ND
22	0.0093	4.8		117	0.0070	2.4	
23	0.0051	0.38	ND	119	0.0050	0.27	ND
26	0.050	48	Outlier,ND				
28	0.0034	-1.4					
32	0.0030	-1.8	ND				
33	0.0020	-2.9					
34	0.0024	-2.5					
35	0.0060	1.4	ND				
39	0.0039	-0.89	ND				
40	0.010	5.5	ND				
41	0.019	15	Outlier,ND				
42	0.0050	0.27	ND				
44	0.023	19	Outlier,ND				
46	0.025	21	Outlier,ND				
48	0.0047	0.00					
50	0.0050	0.27	ND				
51	0.0042	-0.54					
52	0.0049	0.17	ND				
54	0.0030	-1.8					
55	0.0022	-2.7					
57	0.044	41	Outlier,ND				
59	0.0082	3.6	ND				
64	0.030	27	Outlier,ND				
65	0.0027	-2.2					
69	0.0060	1.3	ND				
71	0.0045	-0.26	ND				
72	0.12	121	Outlier,ND				
75	0.0050	0.29					
76	0.0089	4.4	ND				
77	0.0033	-1.5					
80	0.050	48	Outlier,ND				
81	0.0034	-1.4	ND				
82	0.075	74	Outlier,ND				
84	0.010	5.5	ND				
87	0.0039	-0.85					
88	0.0090	4.5	ND				
91	0.016	12	Outlier,ND				

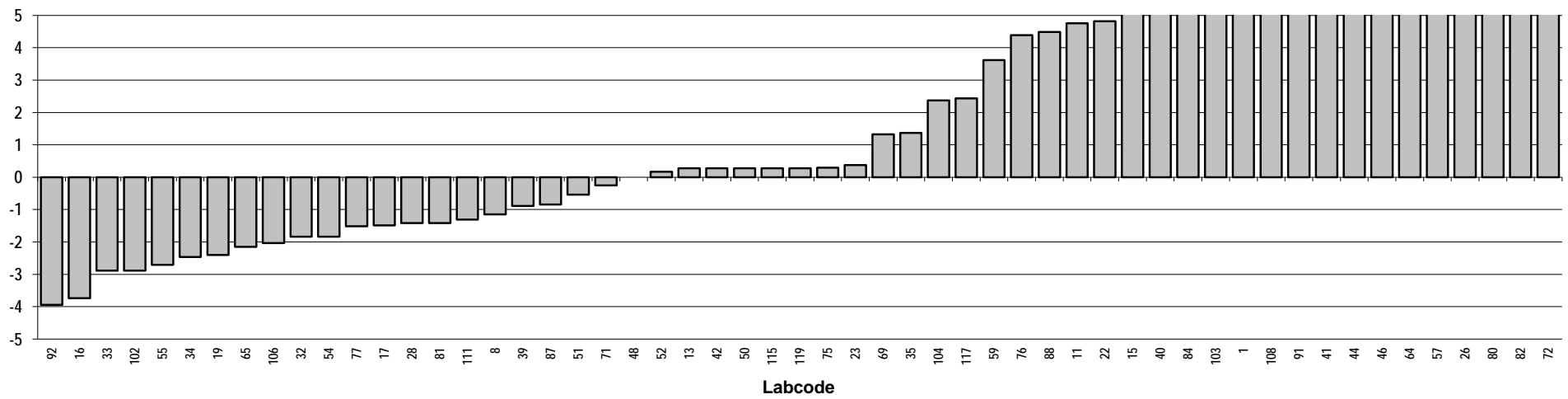
Consensus statistics

Consensus median, pg/g	0.0047
Median all values pg/g	0.0050
Consensus mean, pg/g	0.0051
Standard deviation, pg/g	0.0026
Relative standard deviation, %	52
No. of values reported	55
No. of values removed	12
No. of reported non-detects	38

2,3,7,8 TCDD



Z-score: 2,3,7,8 TCDD



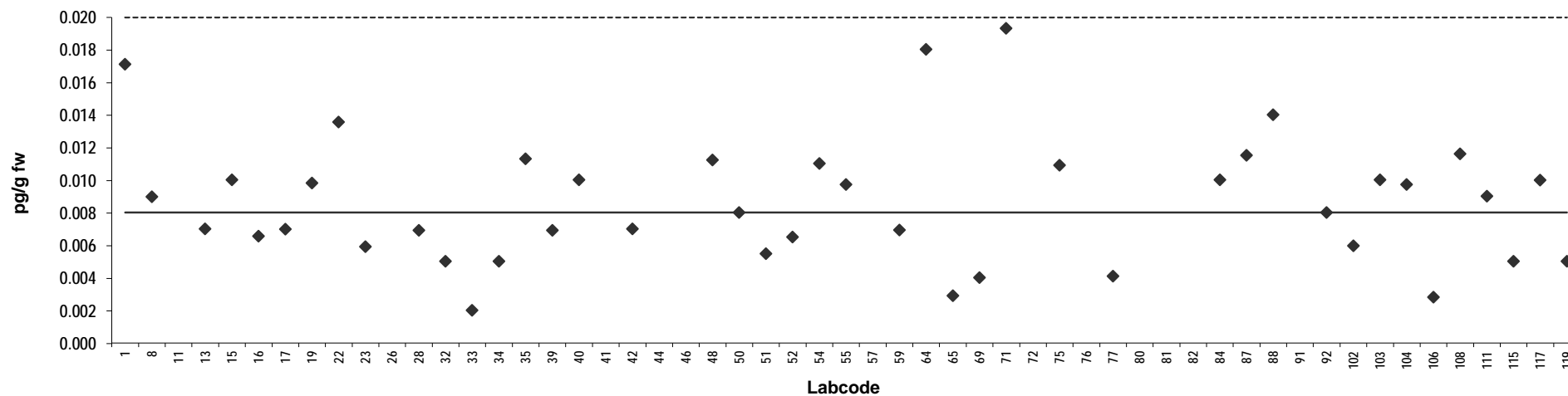
Sheep meat
Congener: 1,2,3,7,8 PeCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.017	5.7	ND	92	0.0080	0.00	ND
8	0.0090	0.60		102	0.0060	-1.3	
11	0.036	18	Outlier,ND	103	0.010	1.3	ND
13	0.0070	-0.63		104	0.0097	1.1	ND
15	0.010	1.3	ND	106	0.0028	-3.2	ND
16	0.0065	-0.91		108	0.012	2.3	ND
17	0.0070	-0.64		111	0.0090	0.62	
19	0.0098	1.1		115	0.0050	-1.9	ND
22	0.014	3.5	ND	117	0.010	1.2	
23	0.0059	-1.3	ND	119	0.0050	-1.9	ND
26	0.050	26	Outlier,ND				
28	0.0069	-0.69					
32	0.0050	-1.9					
33	0.0020	-3.8					
34	0.0050	-1.9	ND				
35	0.011	2.1	ND				
39	0.0069	-0.69					
40	0.010	1.3	ND				
41	0.022	8.8	Outlier,ND				
42	0.0070	-0.63					
44	0.023	9.5	Outlier,ND				
46	0.025	11	Outlier,ND				
48	0.011	2.0					
50	0.0080	0.00					
51	0.0055	-1.6					
52	0.0065	-0.94					
54	0.011	1.9					
55	0.0097	1.1					
57	0.021	8.1	Outlier,ND				
59	0.0069	-0.67	ND				
64	0.018	6.3	ND				
65	0.0029	-3.2					
69	0.0040	-2.5	ND				
71	0.019	7.1					
72	0.15	88	Outlier,ND				
75	0.011	1.8					
76	0.028	13	Outlier,ND				
77	0.0041	-2.4					
80	0.050	26	Outlier,ND				
81	0.050	26	Outlier				
82	0.10	60	Outlier				
84	0.010	1.3	ND				
87	0.012	2.2					
88	0.014	3.8	ND				
91	0.032	15	Outlier,ND				

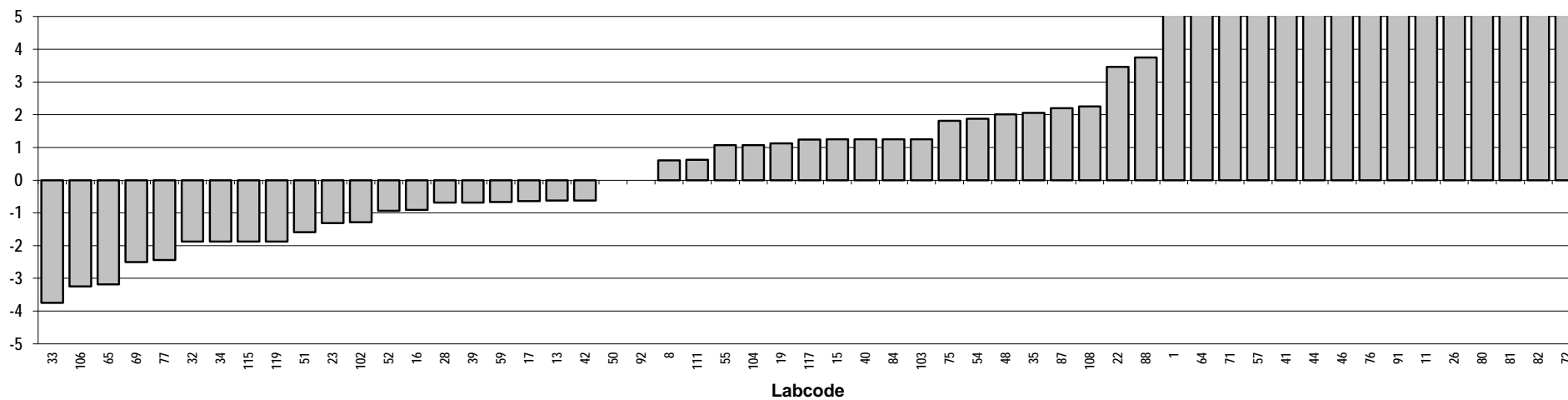
Consensus statistics

Consensus median, pg/g	0.008
Median all values pg/g	0.010
Consensus mean, pg/g	0.0086
Standard deviation, pg/g	0.0039
Relative standard deviation, %	45
No. of values reported	55
No. of values removed	12
No. of reported non-detects	29

1,2,3,7,8 PeCDD



Z-score: 1,2,3,7,8 PeCDD



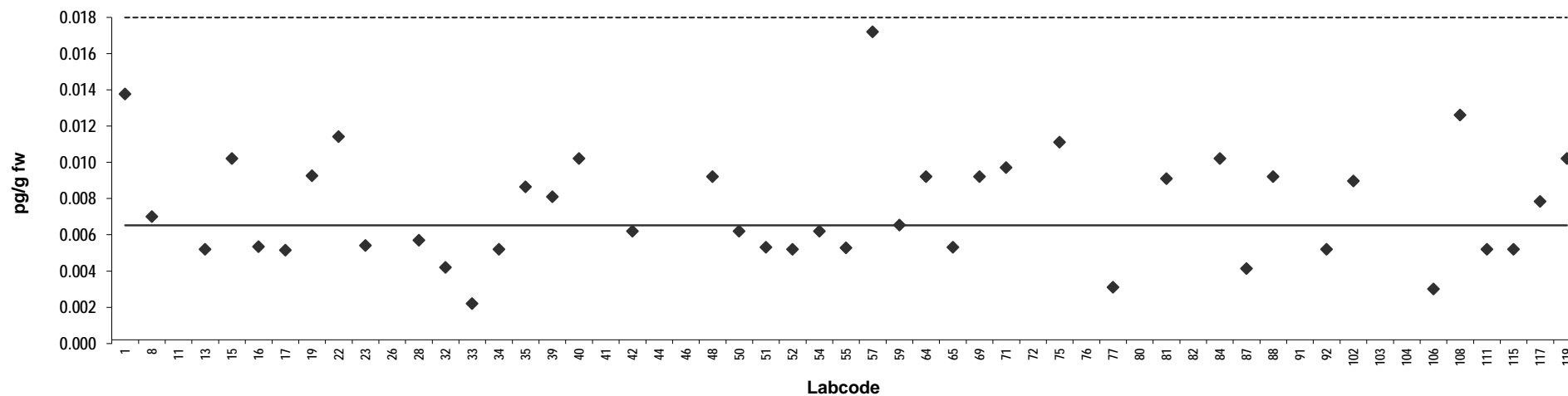
Sheep meat
Congener: 1,2,3,4,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.014	5.7		92	0.0050	-1.1	ND
8	0.0068	0.37		102	0.0088	1.9	
11	0.046	31	Outlier,ND	103	0.025	15	Outlier,ND
13	0.0050	-1.1	ND	104	0.019	10	Outlier,ND
15	0.010	2.9		106	0.0028	-2.8	
16	0.0051	-0.94		108	0.012	4.8	ND
17	0.0050	-1.1		111	0.0050	-1.1	
19	0.0091	2.2		115	0.0050	-1.1	ND
22	0.011	3.9	ND	117	0.0076	1.0	
23	0.0052	-0.89		119	0.010	2.9	ND
26	0.050	34	Outlier,ND				
28	0.0055	-0.66					
32	0.0040	-1.8	ND				
33	0.0020	-3.4					
34	0.0050	-1.1	ND				
35	0.0084	1.7	ND				
39	0.0079	1.2					
40	0.010	2.9	ND				
41	0.021	12	Outlier,ND				
42	0.0060	-0.26					
44	0.023	13	Outlier,ND				
46	0.050	34	Outlier,ND				
48	0.0090	2.1					
50	0.0060	-0.26					
51	0.0051	-0.96					
52	0.0050	-1.1					
54	0.0060	-0.26					
55	0.0051	-0.99					
57	0.017	8.4	ND				
59	0.0063	0.00	ND				
64	0.0090	2.1	ND				
65	0.0051	-0.97					
69	0.0090	2.1	ND				
71	0.0095	2.5					
72	0.15	114	Outlier,ND				
75	0.011	3.6					
76	0.039	25	Outlier,ND				
77	0.0029	-2.7					
80	0.050	34	Outlier,ND				
81	0.0089	2.0					
82	0.12	90	Outlier				
84	0.010	2.9	ND				
87	0.0039	-1.9					
88	0.0090	2.1	ND				
91	0.056	39	Outlier,ND				

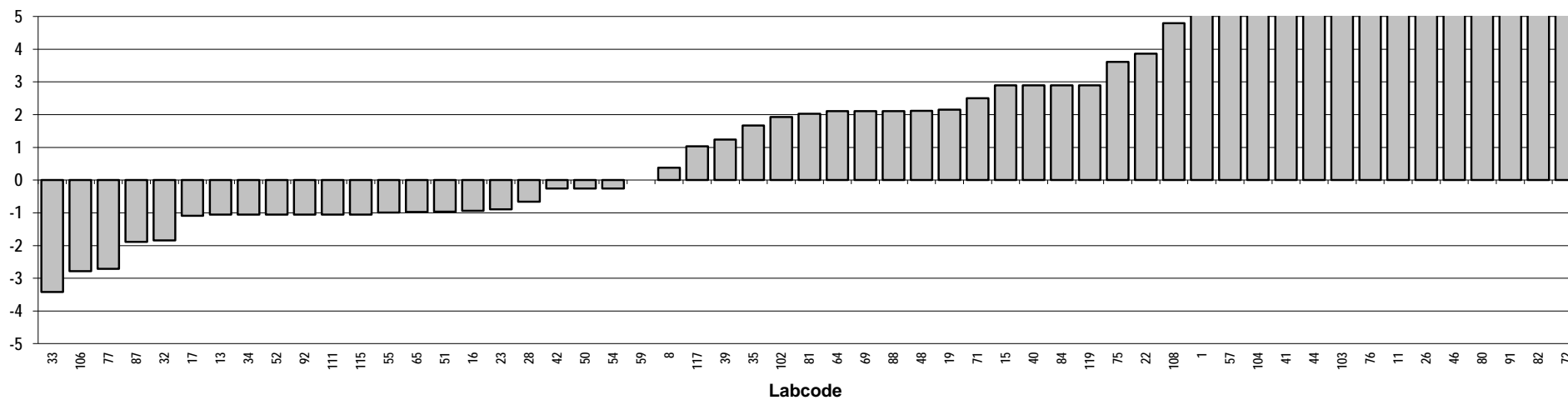
Consensus statistics

Consensus median, pg/g	0.0063
Median all values pg/g	0.0089
Consensus mean, pg/g	0.0073
Standard deviation, pg/g	0.0031
Relative standard deviation, %	42
No. of values reported	55
No. of values removed	12
No. of reported non-detects	27

1,2,3,4,7,8 HxCDD



Z-score: 1,2,3,4,7,8 HxCDD

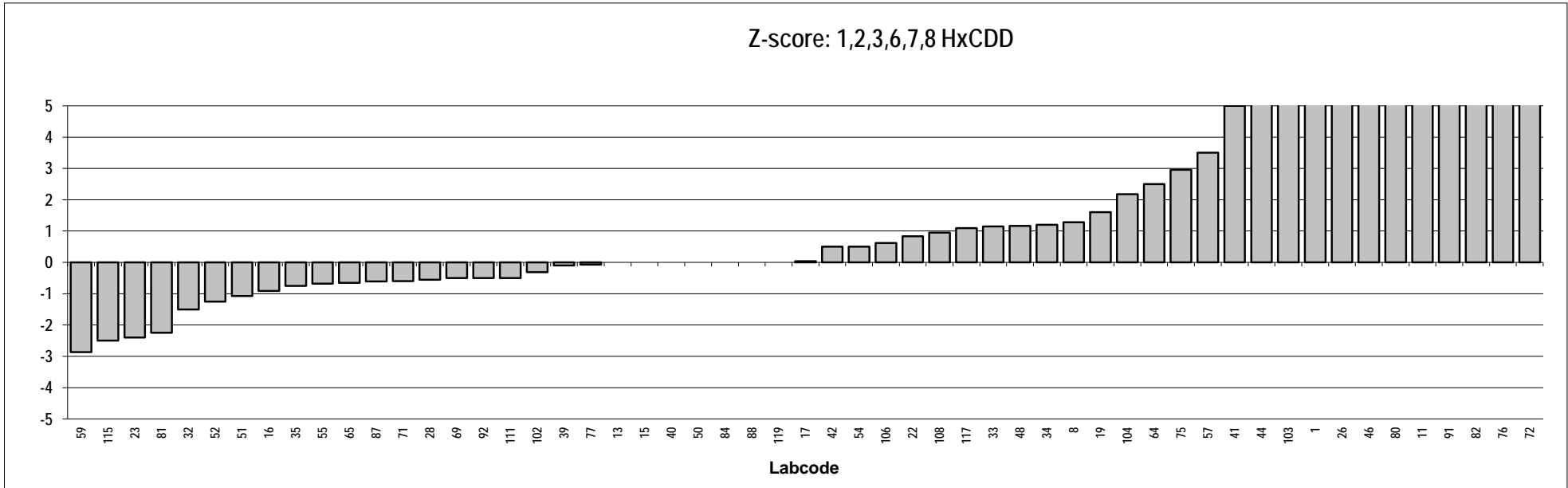
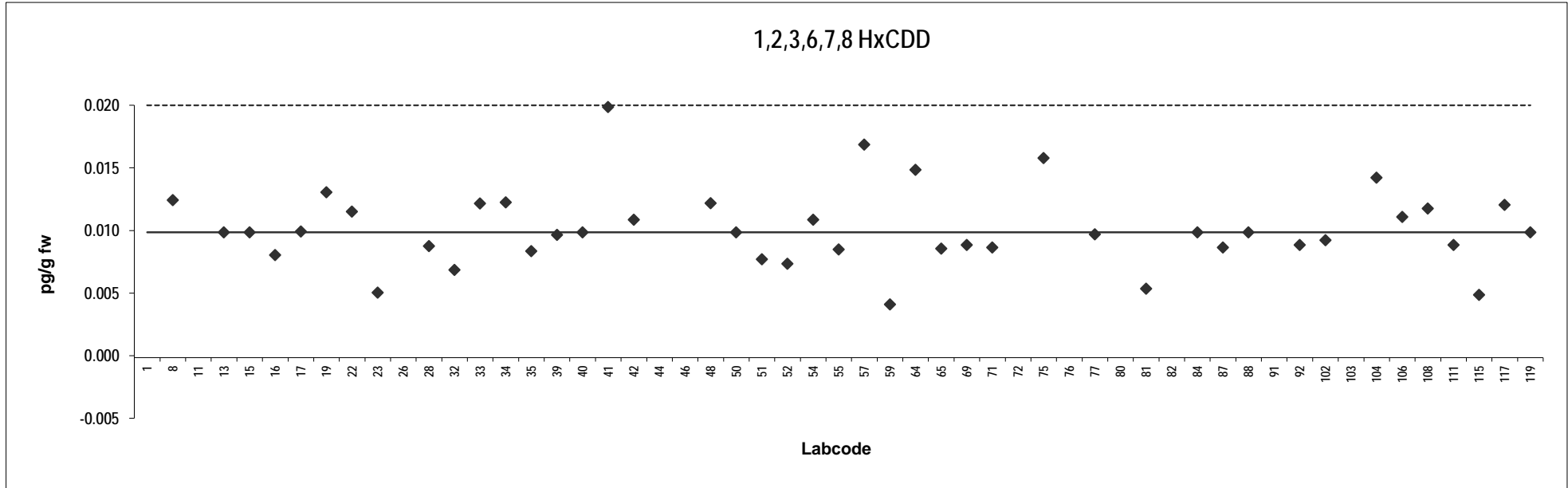


Sheep meat
Congener: 1,2,3,6,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.044	17	Outlier	92	0.0090	-0.50	ND
8	0.013	1.3		102	0.0094	-0.31	
11	0.054	22	Outlier,ND	103	0.025	7.5	Outlier,ND
13	0.010	0.00		104	0.014	2.2	
15	0.010	0.00		106	0.011	0.62	
16	0.0082	-0.91		108	0.012	0.95	ND
17	0.010	0.038		111	0.0090	-0.50	
19	0.013	1.6		115	0.0050	-2.5	ND
22	0.012	0.83	ND	117	0.012	1.1	
23	0.0052	-2.4		119	0.010	0.00	ND
26	0.050	20	Outlier,ND				
28	0.0089	-0.55					
32	0.0070	-1.5					
33	0.012	1.2					
34	0.012	1.2					
35	0.0085	-0.75	ND				
39	0.0098	-0.10					
40	0.010	0.00	ND				
41	0.020	5.0	ND				
42	0.011	0.50					
44	0.023	6.6	Outlier,ND				
46	0.050	20	Outlier,ND				
48	0.012	1.2					
50	0.010	0.00					
51	0.0079	-1.1					
52	0.0075	-1.3					
54	0.011	0.50					
55	0.0086	-0.68					
57	0.017	3.5	ND				
59	0.0043	-2.9	ND				
64	0.015	2.5	ND				
65	0.0087	-0.65					
69	0.0090	-0.50	ND				
71	0.0088	-0.60					
72	0.16	77	Outlier,ND				
75	0.016	3.0					
76	0.15	71	Outlier				
77	0.0099	-0.075					
80	0.050	20	Outlier				
81	0.0055	-2.3					
82	0.10	45	Outlier,ND				
84	0.010	0.00	ND				
87	0.0088	-0.61					
88	0.010	0.00	ND				
91	0.055	23	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.010
Median all values pg/g	0.010
Consensus mean, pg/g	0.010
Standard deviation, pg/g	0.0031
Relative standard deviation, %	30
No. of values reported	55
No. of values removed	11
No. of reported non-detects	22



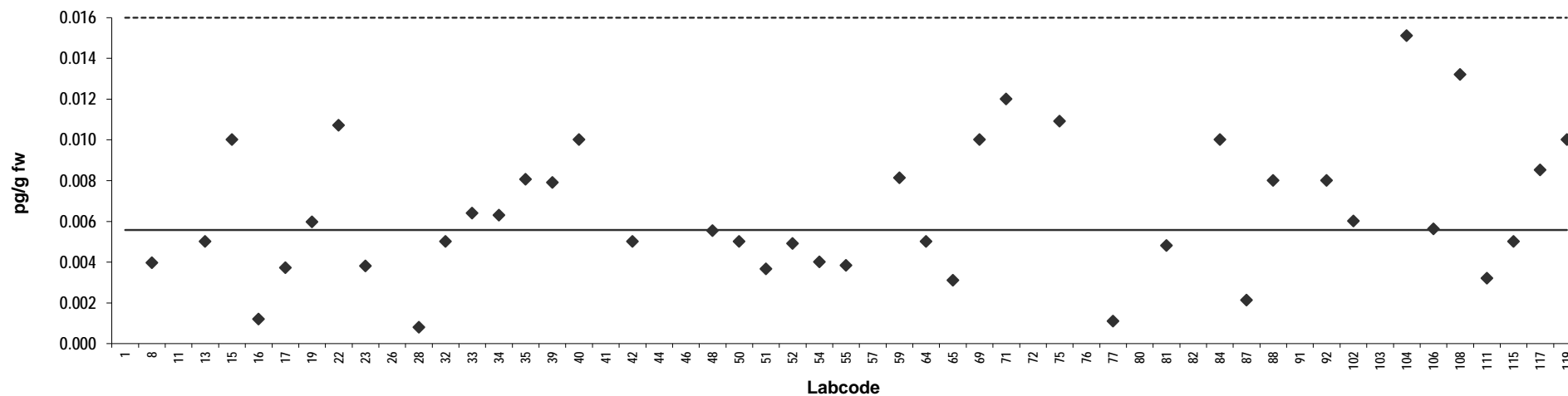
Sheep meat
Congener: 1,2,3,7,8,9 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.041	32	Outlier	92	0.0080	2.2	ND
8	0.0040	-1.5		102	0.0060	0.38	ND
11	0.047	37	Outlier,ND	103	0.025	17	Outlier,ND
13	0.0050	-0.52	ND	104	0.015	8.5	
15	0.010	4.0	ND	106	0.0056	0.039	
16	0.0012	-3.9	ND	108	0.013	6.8	ND
17	0.0037	-1.7		111	0.0032	-2.1	ND
19	0.0060	0.35		115	0.0050	-0.52	ND
22	0.011	4.6	ND	117	0.0085	2.6	
23	0.0038	-1.6	ND	119	0.010	4.0	ND
26	0.050	40	Outlier,ND				
28	0.00080	-4.3	ND				
32	0.0050	-0.52	ND				
33	0.0064	0.74					
34	0.0063	0.64					
35	0.0080	2.2	ND				
39	0.0079	2.1	ND				
40	0.010	4.0	ND				
41	0.023	16	Outlier,ND				
42	0.0050	-0.52					
44	0.023	16	Outlier,ND				
46	0.050	40	Outlier,ND				
48	0.0055	-0.039					
50	0.0050	-0.52					
51	0.0037	-1.7	ND				
52	0.0049	-0.61	ND				
54	0.0040	-1.4	ND				
55	0.0038	-1.6					
57	0.017	10	Outlier,ND				
59	0.0081	2.3	ND				
64	0.0050	-0.52	ND				
65	0.0031	-2.2					
69	0.010	4.0	ND				
71	0.012	5.8					
72	0.15	126	Outlier,ND				
75	0.011	4.8					
76	0.079	66	Outlier				
77	0.0011	-4.0					
80	0.050	40	Outlier,ND				
81	0.0048	-0.70	ND				
82	0.10	85	Outlier,ND				
84	0.010	4.0	ND				
87	0.0021	-3.1					
88	0.0080	2.2	ND				
91	0.064	52	Outlier,ND				

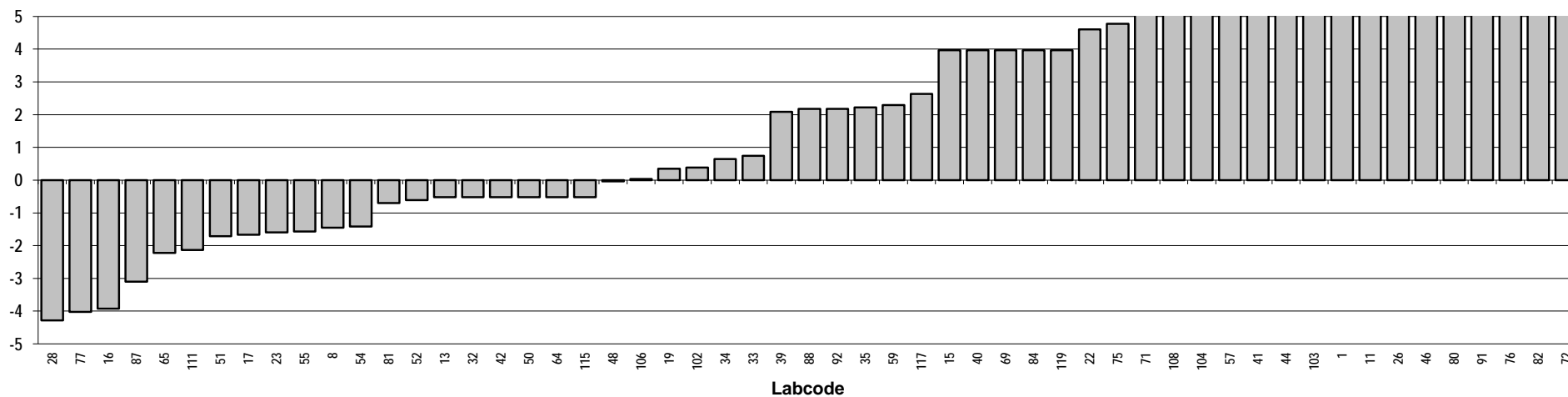
Consensus statistics

Consensus median, pg/g	0.0056
Median all values pg/g	0.0080
Consensus mean, pg/g	0.0064
Standard deviation, pg/g	0.0033
Relative standard deviation, %	52
No. of values reported	55
No. of values removed	13
No. of reported non-detects	36

1,2,3,7,8,9 HxCDD



Z-score: 1,2,3,7,8,9 HxCDD

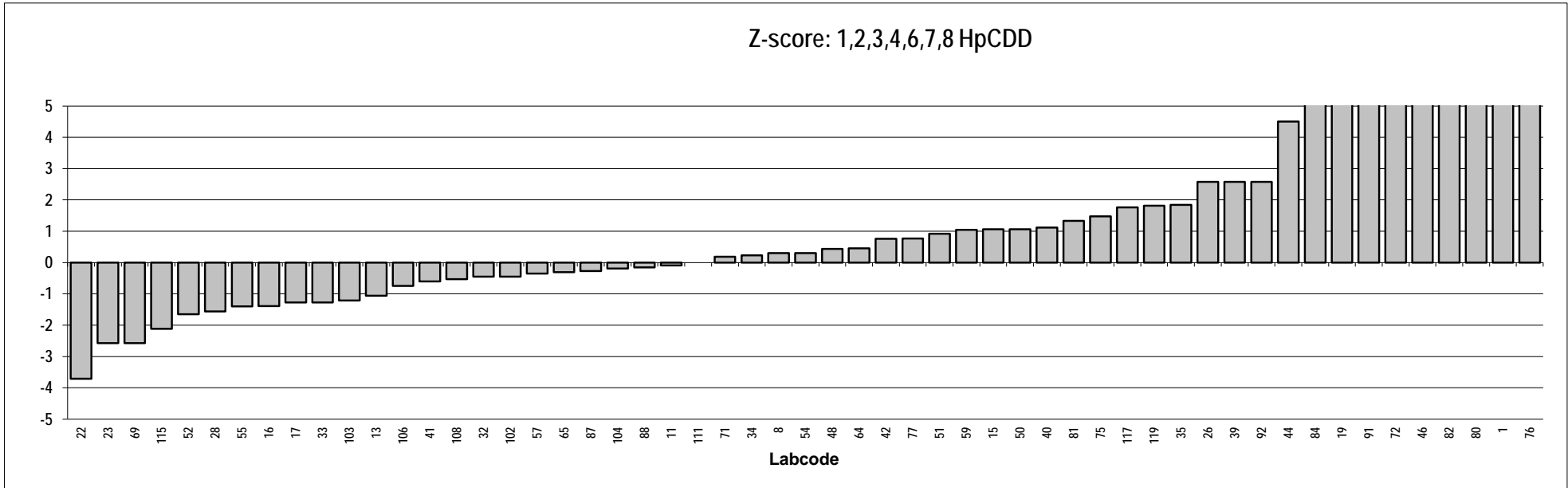
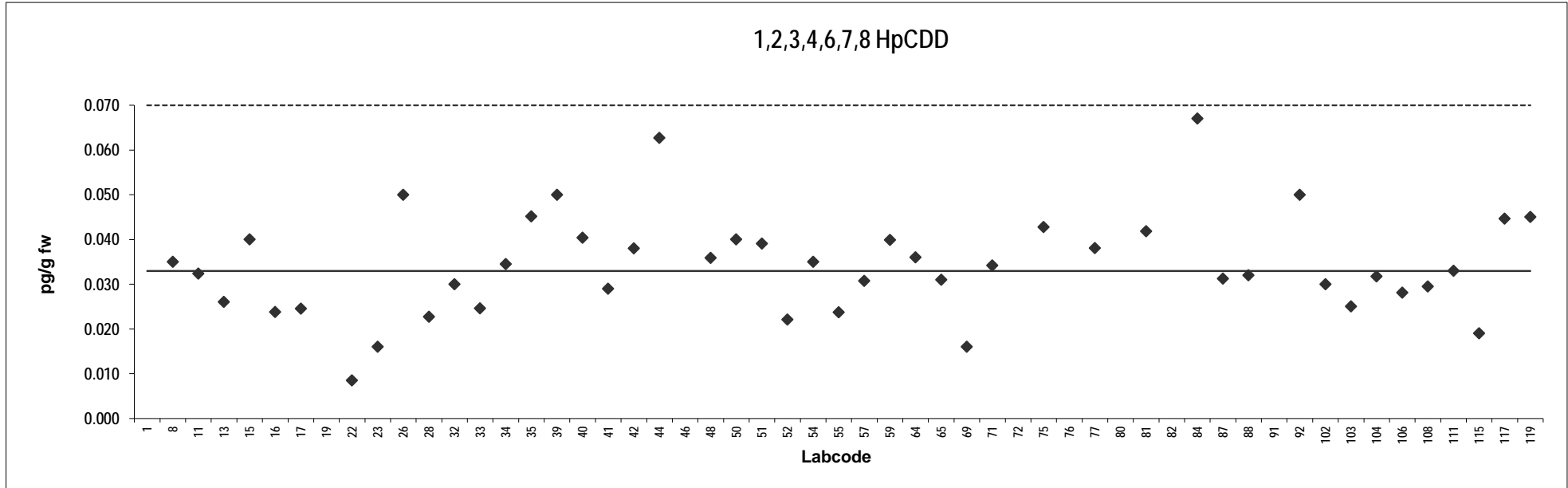


Sheep meat
Congener: 1,2,3,4,6,7,8 HpCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.22	28	Outlier	92	0.050	2.6	ND
8	0.035	0.30		102	0.030	-0.45	ND
11	0.032	-0.096		103	0.025	-1.2	ND
13	0.026	-1.1		104	0.032	-0.19	
15	0.040	1.1		106	0.028	-0.74	
16	0.024	-1.4		108	0.030	-0.53	
17	0.025	-1.3		111	0.033	0.00	
19	0.071	5.8	Outlier	115	0.019	-2.1	
22	0.0085	-3.7	ND	117	0.045	1.8	
23	0.016	-2.6		119	0.045	1.8	
26	0.050	2.6					
28	0.023	-1.6					
32	0.030	-0.45					
33	0.025	-1.3					
34	0.035	0.23					
35	0.045	1.8					
39	0.050	2.6					
40	0.040	1.1					
41	0.029	-0.61					
42	0.038	0.76					
44	0.063	4.5					
46	0.10	10	Outlier,ND				
48	0.036	0.44					
50	0.040	1.1					
51	0.039	0.92	ND				
52	0.022	-1.7					
54	0.035	0.30					
55	0.024	-1.4					
57	0.031	-0.35					
59	0.040	1.0					
64	0.036	0.45					
65	0.031	-0.30					
69	0.016	-2.6	ND				
71	0.034	0.18					
72	0.097	9.7	Outlier,ND				
75	0.043	1.5					
76	1.1	157	Outlier				
77	0.038	0.77					
80	0.14	16	Outlier				
81	0.042	1.3					
82	0.13	14	Outlier				
84	0.067	5.2	ND				
87	0.031	-0.27					
88	0.032	-0.15					
91	0.090	8.7	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.033
Median all values pg/g	0.035
Consensus mean, pg/g	0.034
Standard deviation, pg/g	0.011
Relative standard deviation, %	33
No. of values reported	55
No. of values removed	8
No. of reported non-detects	10

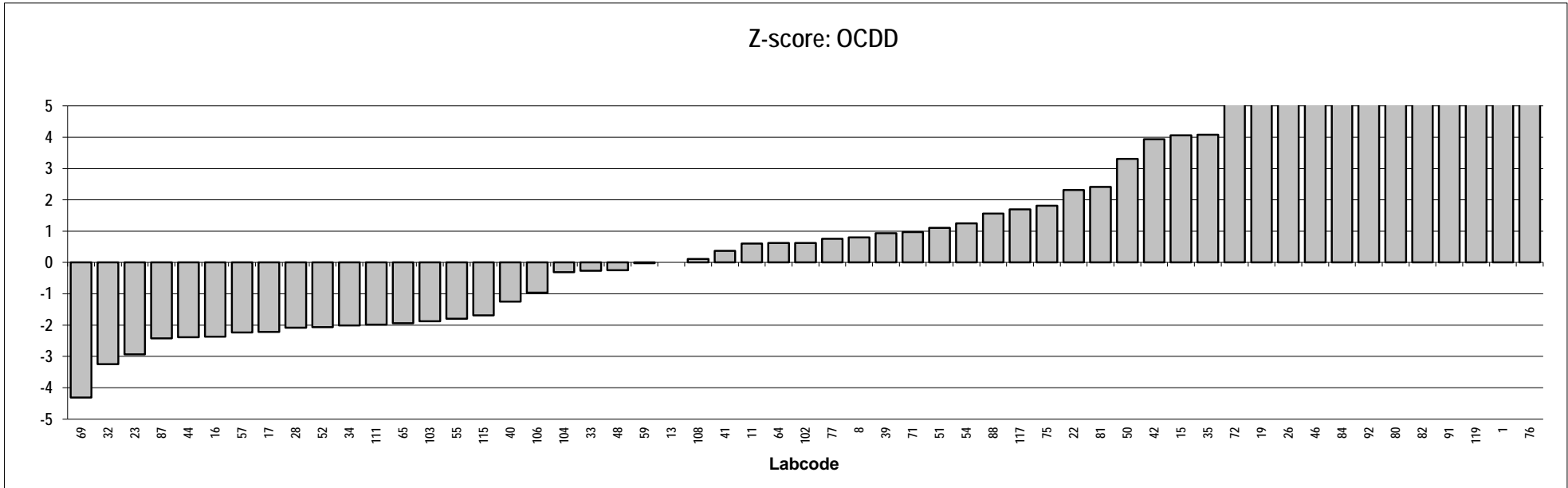
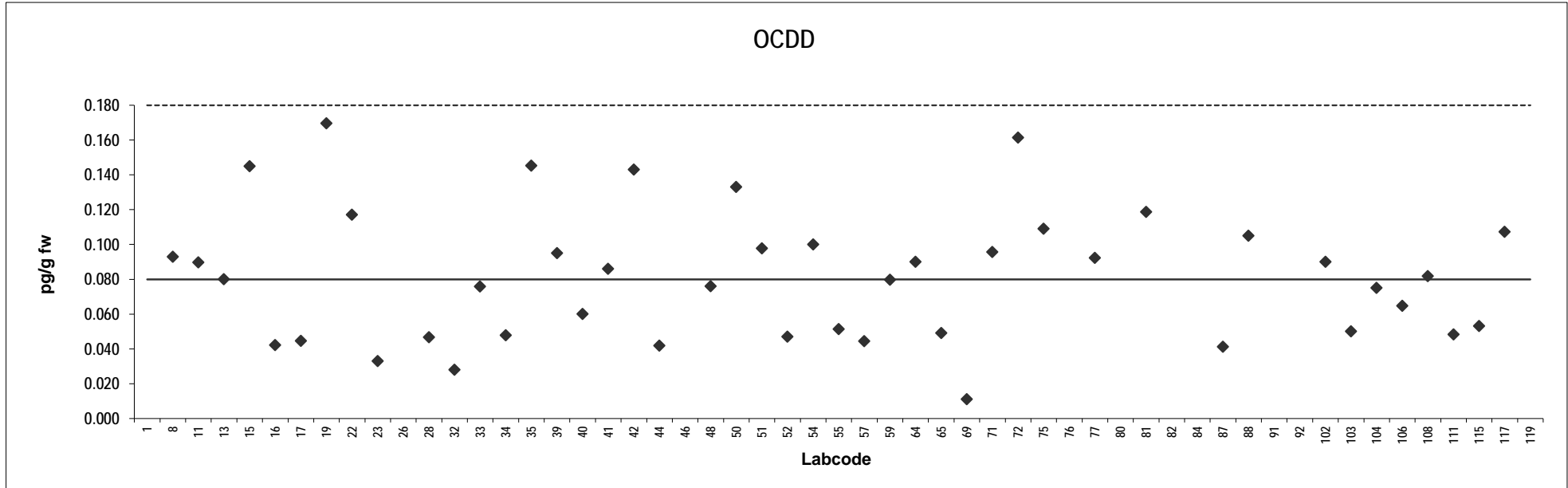


Sheep meat
Congener: OCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.43	22	Outlier	92	0.25	11	Outlier,ND
8	0.093	0.81		102	0.090	0.63	ND
11	0.090	0.61		103	0.050	-1.9	ND
13	0.080	0.00		104	0.075	-0.31	
15	0.15	4.1		106	0.065	-0.96	
16	0.042	-2.4		108	0.082	0.11	
17	0.045	-2.2		111	0.048	-2.0	ND
19	0.17	5.6		115	0.053	-1.7	
22	0.12	2.3		117	0.11	1.7	
23	0.033	-2.9	ND	119	0.37	18	Outlier
26	0.20	7.5	Outlier				
28	0.047	-2.1					
32	0.028	-3.3					
33	0.076	-0.26					
34	0.048	-2.0					
35	0.15	4.1					
39	0.095	0.94					
40	0.060	-1.3	ND				
41	0.086	0.37					
42	0.14	3.9					
44	0.042	-2.4					
46	0.20	7.5	Outlier,ND				
48	0.076	-0.25					
50	0.13	3.3					
51	0.098	1.1	ND				
52	0.047	-2.1					
54	0.10	1.3					
55	0.051	-1.8					
57	0.044	-2.2					
59	0.080	-0.019					
64	0.090	0.63					
65	0.049	-1.9					
69	0.011	-4.3	ND				
71	0.096	0.98					
72	0.16	5.1	ND				
75	0.11	1.8					
76	4.0	245	Outlier				
77	0.092	0.76					
80	0.29	13	Outlier				
81	0.12	2.4					
82	0.34	17	Outlier				
84	0.20	7.7	Outlier,ND				
87	0.041	-2.4					
88	0.11	1.6					
91	0.35	17	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.080
Median all values pg/g	0.090
Consensus mean, pg/g	0.081
Standard deviation, pg/g	0.037
Relative standard deviation, %	46
No. of values reported	55
No. of values removed	10
No. of reported non-detects	12

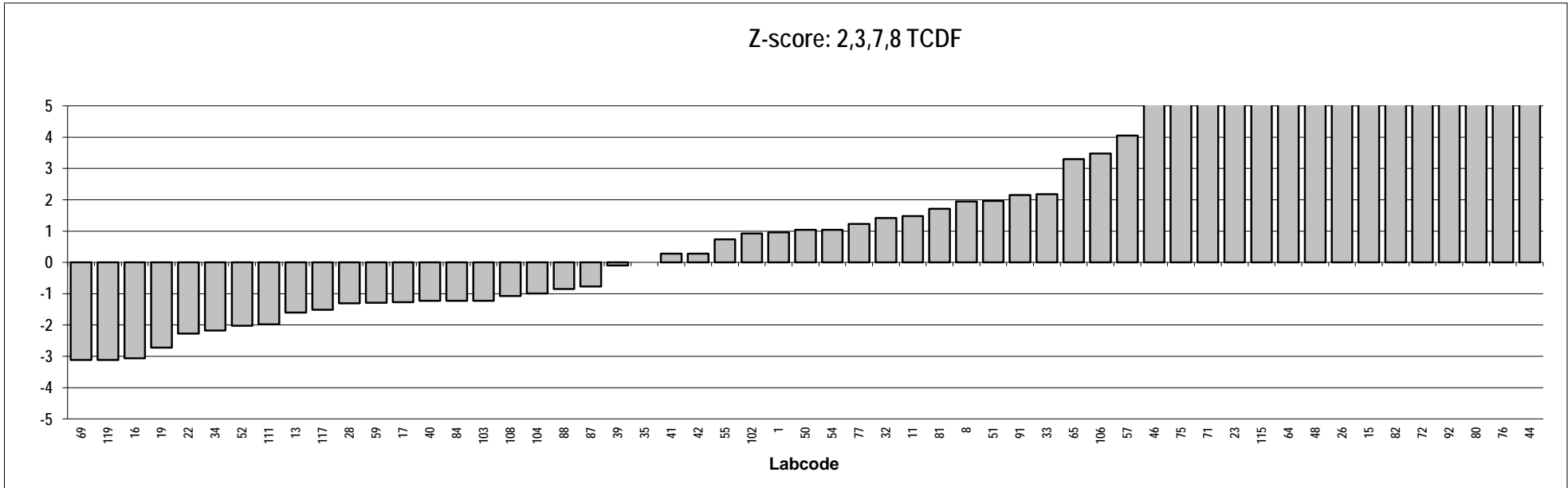
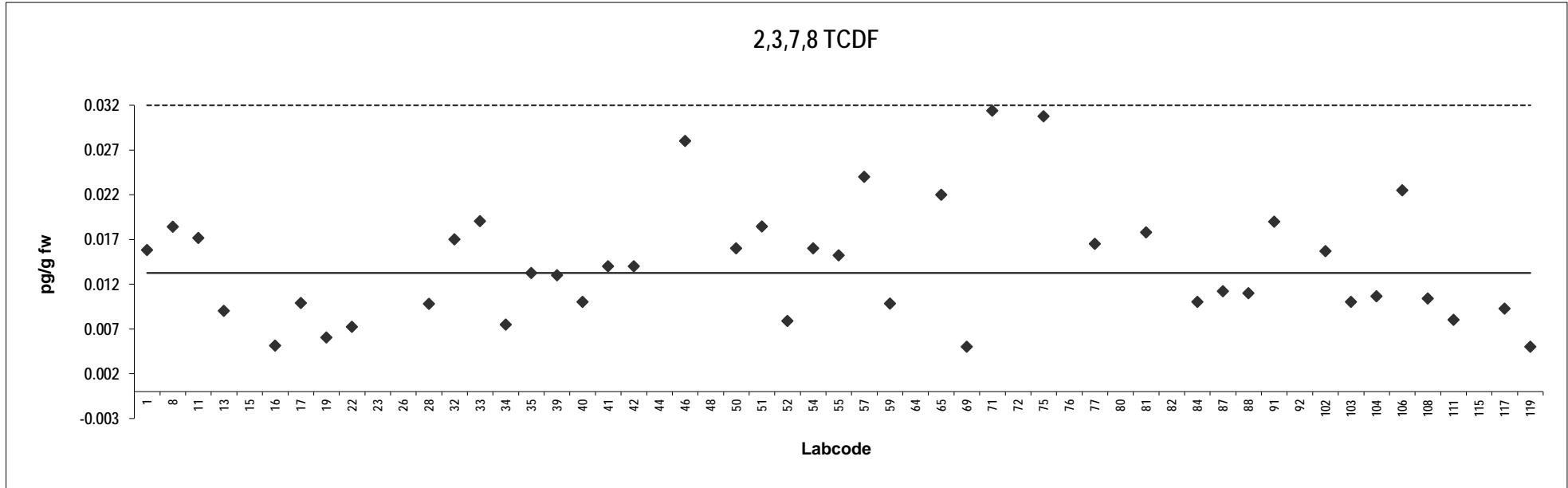


Sheep meat
Congener: 2,3,7,8 TCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.016	0.96		92	0.080	25	Outlier,ND
8	0.018	1.9		102	0.016	0.92	
11	0.017	1.5	ND	103	0.010	-1.2	ND
13	0.0090	-1.6		104	0.011	-0.99	
15	0.060	18	Outlier	106	0.022	3.5	
16	0.0051	-3.1		108	0.010	-1.1	ND
17	0.0099	-1.3		111	0.0080	-2.0	
19	0.0060	-2.7		115	0.038	9.3	Outlier
22	0.0072	-2.3	ND	117	0.0092	-1.5	
23	0.038	9.3	Outlier,ND	119	0.0050	-3.1	ND
26	0.050	14	Outlier,ND				
28	0.0098	-1.3					
32	0.017	1.4					
33	0.019	2.2					
34	0.0075	-2.2					
35	0.013	0.00					
39	0.013	-0.095					
40	0.010	-1.2	ND				
41	0.014	0.28					
42	0.014	0.28					
44	0.37	136	Outlier				
46	0.028	5.6					
48	0.046	13	Outlier				
50	0.016	1.0					
51	0.018	2.0					
52	0.0079	-2.0					
54	0.016	1.0					
55	0.015	0.74					
57	0.024	4.1	ND				
59	0.0098	-1.3	ND				
64	0.045	12	Outlier,ND				
65	0.022	3.3					
69	0.0050	-3.1	ND				
71	0.031	6.8					
72	0.077	24	Outlier,ND				
75	0.031	6.6					
76	0.21	75	Outlier				
77	0.017	1.2					
80	0.21	74	Outlier				
81	0.018	1.7					
82	0.075	23	Outlier,ND				
84	0.010	-1.2	ND				
87	0.011	-0.77					
88	0.011	-0.85					
91	0.019	2.2	ND				

Consensus statistics

Consensus median, pg/g	0.013
Median all values pg/g	0.016
Consensus mean, pg/g	0.014
Standard deviation, pg/g	0.0066
Relative standard deviation, %	47
No. of values reported	55
No. of values removed	12
No. of reported non-detects	17



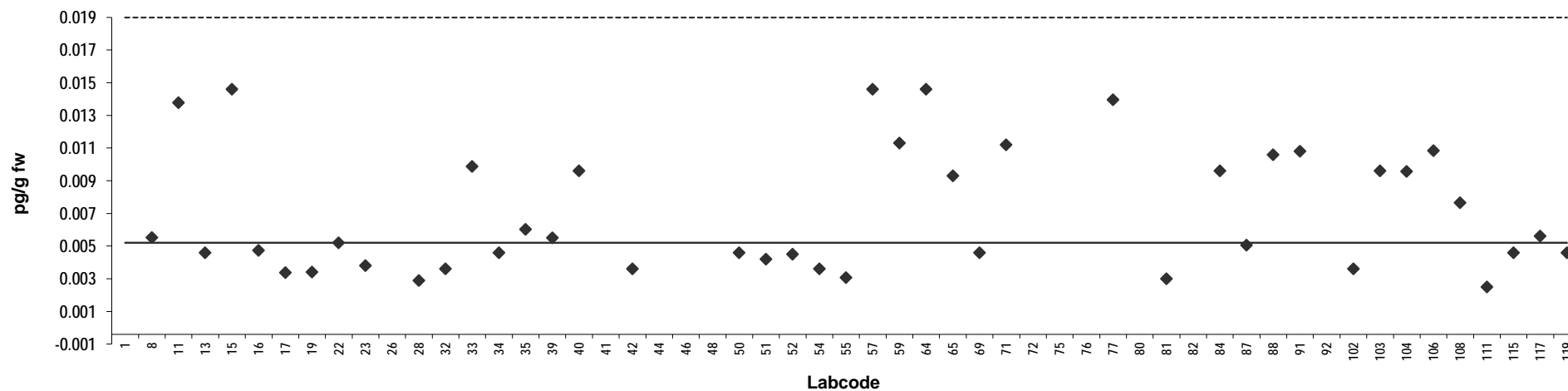
Sheep meat
Congener: 1,2,3,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.038	29	Outlier	92	0.022	15	Outlier,ND
8	0.0059	0.28		102	0.0040	-1.4	ND
11	0.014	7.6	ND	103	0.010	3.9	ND
13	0.0050	-0.54	ND	104	0.010	3.9	ND
15	0.015	8.4		106	0.011	5.0	
16	0.0051	-0.42		108	0.0081	2.2	ND
17	0.0038	-1.6		111	0.0029	-2.4	ND
19	0.0038	-1.6		115	0.0050	-0.54	ND
22	0.0056	0.00	ND	117	0.0060	0.36	
23	0.0042	-1.3	ND	119	0.0050	-0.54	ND
26	0.050	40	Outlier,ND				
28	0.0033	-2.1					
32	0.0040	-1.4					
33	0.010	4.2					
34	0.0050	-0.54	ND				
35	0.0064	0.73	ND				
39	0.0059	0.26					
40	0.010	3.9	ND				
41	0.020	13	Outlier,ND				
42	0.0040	-1.4	ND				
44	0.065	53	Outlier				
46	0.025	17	Outlier,ND				
48	0.022	15	Outlier				
50	0.0050	-0.54	ND				
51	0.0046	-0.90					
52	0.0049	-0.63	ND				
54	0.0040	-1.4					
55	0.0035	-1.9					
57	0.015	8.4	ND				
59	0.012	5.4					
64	0.015	8.4	ND				
65	0.0097	3.6					
69	0.0050	-0.54	ND				
71	0.012	5.3					
72	0.20	175	Outlier,ND				
75	0.021	14	Outlier				
76	0.11	93	Outlier				
77	0.014	7.8					
80	0.050	40	Outlier,ND				
81	0.0034	-2.0	ND				
82	0.075	62	Outlier,ND				
84	0.010	3.9	ND				
87	0.0055	-0.14					
88	0.011	4.8	ND				
91	0.011	5.0	ND				

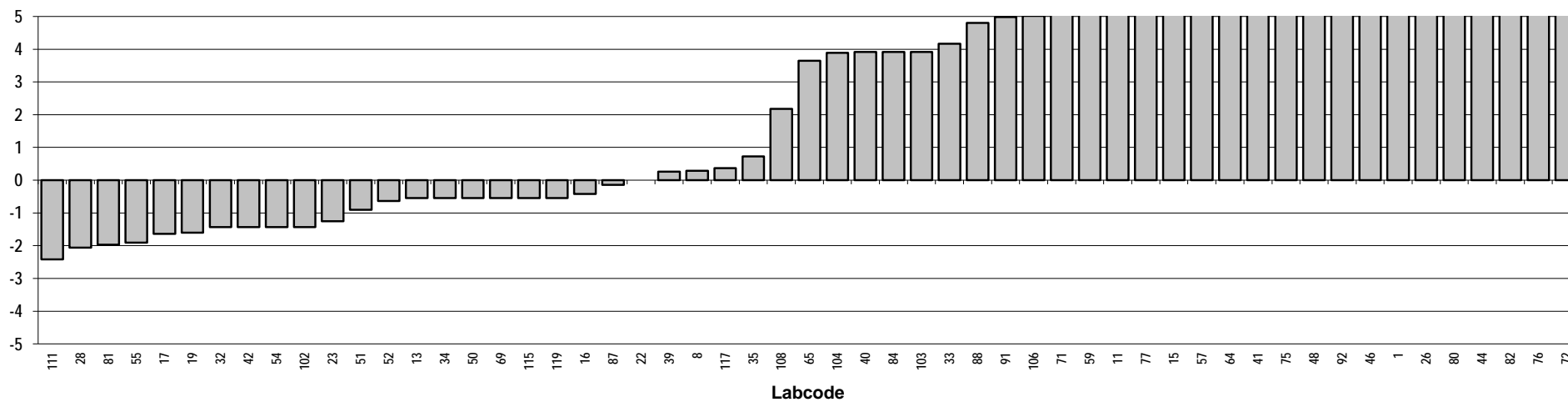
Consensus statistics

Consensus median, pg/g	0.006
Median all values pg/g	0.0097
Consensus mean, pg/g	0.0074
Standard deviation, pg/g	0.0038
Relative standard deviation, %	51
No. of values reported	55
No. of values removed	12
No. of reported non-detects	31

1,2,3,7,8 PeCDF



Z-score: 1,2,3,7,8 PeCDF



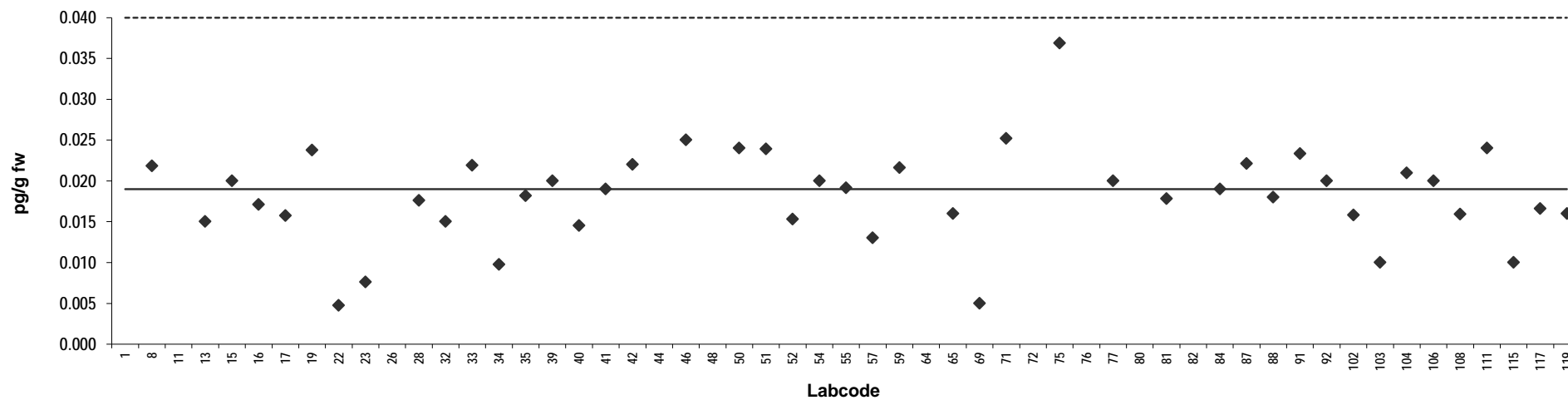
Sheep meat
Congener: 2,3,4,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.046	7.1	Outlier	92	0.020	0.26	ND
8	0.022	0.74		102	0.016	-0.84	
11	0.054	9.1	Outlier,ND	103	0.010	-2.4	ND
13	0.015	-1.1		104	0.021	0.51	
15	0.020	0.26		106	0.020	0.26	
16	0.017	-0.50		108	0.016	-0.82	
17	0.016	-0.86		111	0.024	1.3	
19	0.024	1.2		115	0.010	-2.4	
22	0.0047	-3.8	ND	117	0.017	-0.63	
23	0.0076	-3.0		119	0.016	-0.79	
26	0.050	8.2	Outlier,ND				
28	0.018	-0.37					
32	0.015	-1.1					
33	0.022	0.76					
34	0.0098	-2.4					
35	0.018	-0.22					
39	0.020	0.26					
40	0.015	-1.2					
41	0.019	0.00					
42	0.022	0.79					
44	0.12	26	Outlier				
46	0.025	1.6	ND				
48	0.043	6.2	Outlier				
50	0.024	1.3					
51	0.024	1.3					
52	0.015	-0.97					
54	0.020	0.26					
55	0.019	0.039					
57	0.013	-1.6	ND				
59	0.022	0.68					
64	0.042	6.1	Outlier,ND				
65	0.016	-0.79					
69	0.0050	-3.7	ND				
71	0.025	1.6					
72	0.18	42	Outlier,ND				
75	0.037	4.7					
76	0.051	8.5	Outlier,ND				
77	0.020	0.26					
80	0.11	24	Outlier				
81	0.018	-0.32					
82	0.12	26	Outlier				
84	0.019	0.00					
87	0.022	0.82					
88	0.018	-0.26					
91	0.023	1.1					

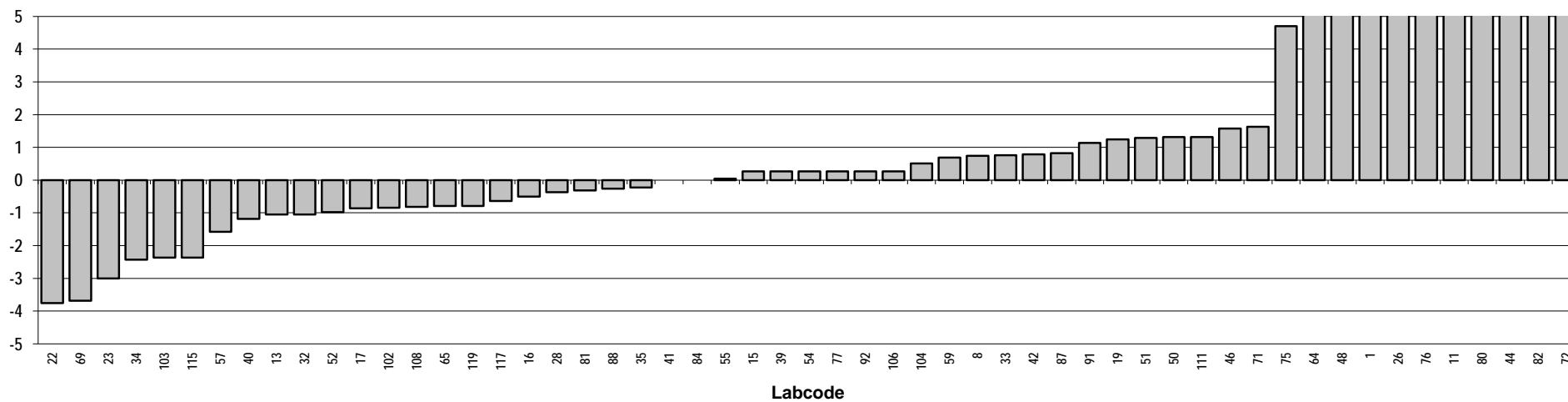
Consensus statistics

Consensus median, pg/g	0.019
Median all values pg/g	0.020
Consensus mean, pg/g	0.018
Standard deviation, pg/g	0.0058
Relative standard deviation, %	32
No. of values reported	55
No. of values removed	10
No. of reported non-detects	11

2,3,4,7,8 PeCDF



Z-score: 2,3,4,7,8 PeCDF



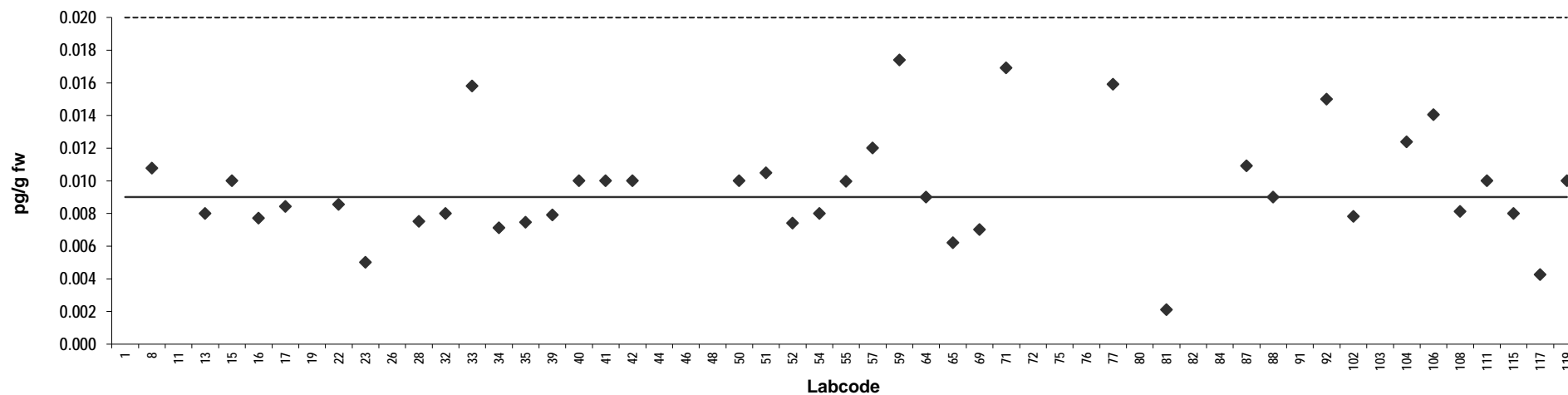
Sheep meat
Congener: 1,2,3,4,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.029	11	Outlier	92	0.015	3.3	ND
8	0.011	0.98		102	0.0078	-0.66	
11	0.027	9.9	Outlier,ND	103	0.025	8.9	Outlier,ND
13	0.0080	-0.56		104	0.012	1.9	
15	0.010	0.56	ND	106	0.014	2.8	
16	0.0077	-0.72		108	0.0081	-0.49	ND
17	0.0084	-0.32		111	0.010	0.56	
19	0.045	20	Outlier	115	0.0080	-0.56	
22	0.0086	-0.25	ND	117	0.0043	-2.6	
23	0.0050	-2.2		119	0.010	0.56	ND
26	0.050	23	Outlier,ND				
28	0.0075	-0.83					
32	0.0080	-0.56					
33	0.016	3.8					
34	0.0071	-1.0					
35	0.0075	-0.86	ND				
39	0.0079	-0.61	ND				
40	0.010	0.56	ND				
41	0.010	0.56					
42	0.010	0.56					
44	0.042	18	Outlier				
46	0.050	23	Outlier,ND				
48	0.036	15	Outlier				
50	0.010	0.56					
51	0.010	0.83					
52	0.0074	-0.89					
54	0.0080	-0.56					
55	0.010	0.53					
57	0.012	1.7	ND				
59	0.017	4.7					
64	0.0090	0.00					
65	0.0062	-1.6					
69	0.0070	-1.1	ND				
71	0.017	4.4					
72	0.097	49	Outlier,ND				
75	0.027	9.9	Outlier				
76	0.28	149	Outlier				
77	0.016	3.8					
80	0.050	23	Outlier,ND				
81	0.0021	-3.8	ND				
82	0.10	51	Outlier,ND				
84	0.023	7.8	Outlier,ND				
87	0.011	1.1					
88	0.0090	0.00					
91	0.022	7.2	Outlier,ND				

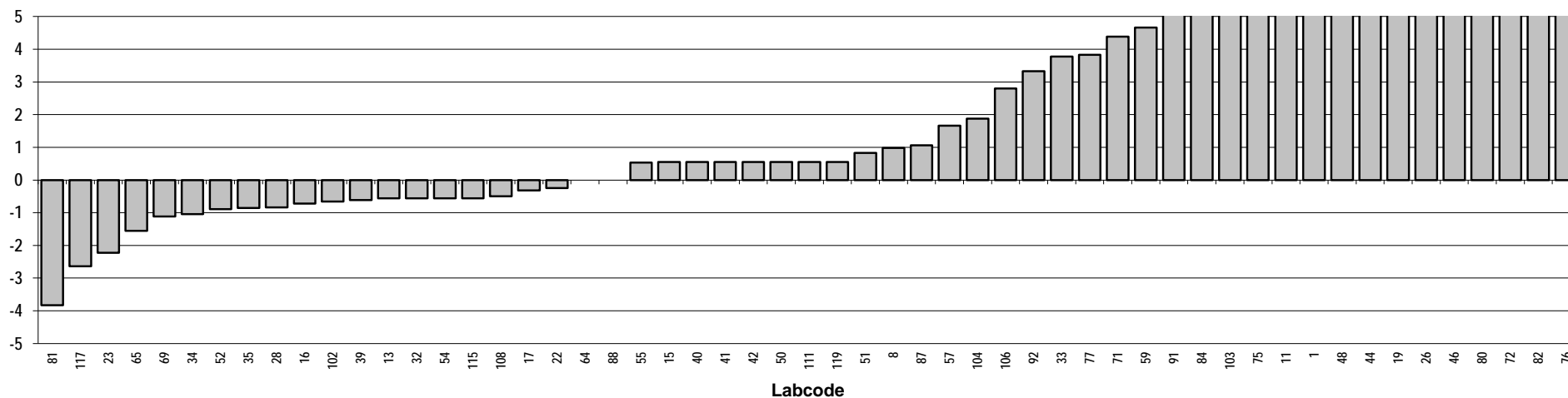
Consensus statistics

Consensus median, pg/g	0.0090
Median all values pg/g	0.010
Consensus mean, pg/g	0.0096
Standard deviation, pg/g	0.0033
Relative standard deviation, %	35
No. of values reported	55
No. of values removed	15
No. of reported non-detects	20

1,2,3,4,7,8 HxCDF



Z-score: 1,2,3,4,7,8 HxCDF



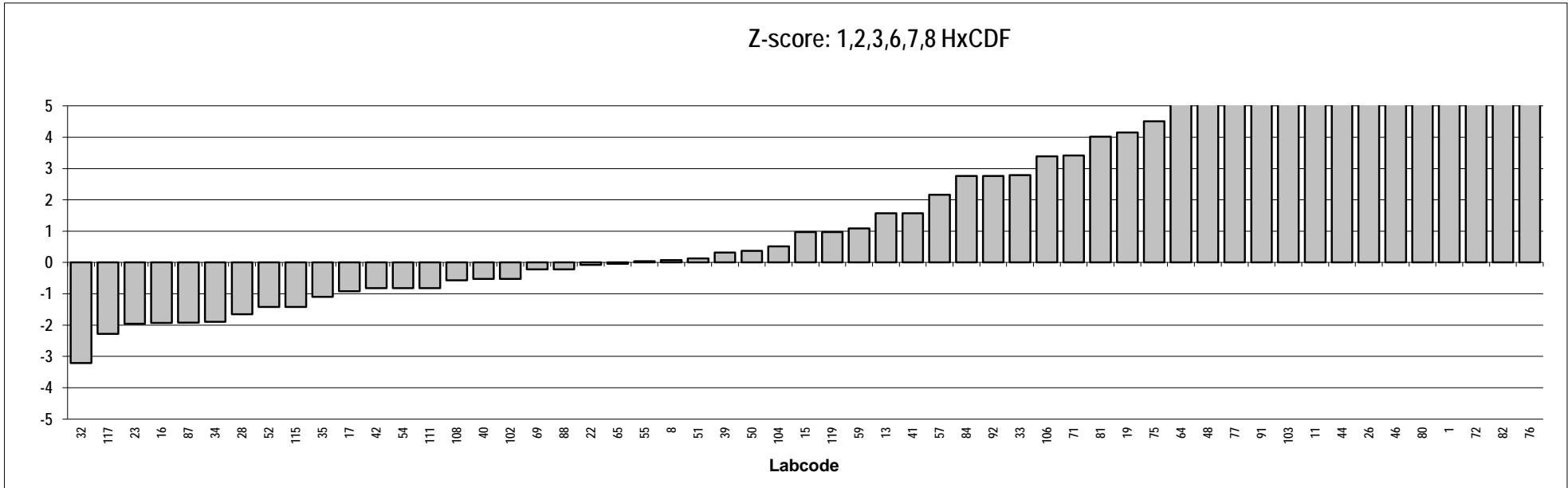
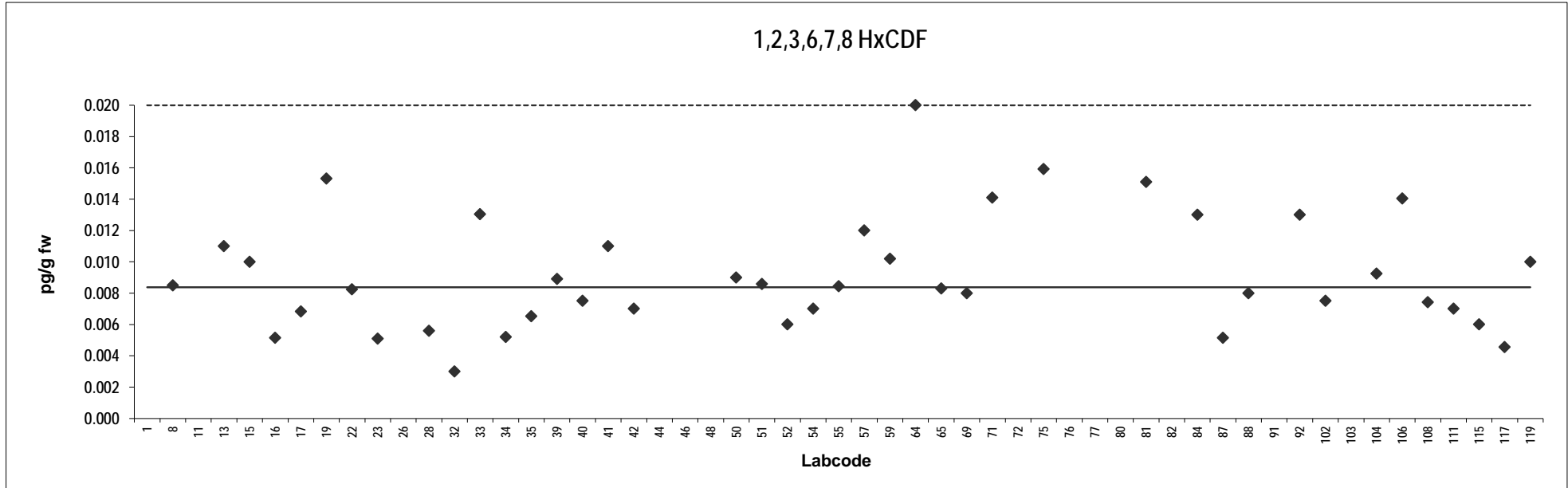
Sheep meat

Congener: 1,2,3,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.053	27	Outlier	92	0.013	2.8	ND
8	0.0085	0.075		102	0.0075	-0.52	
11	0.026	11	Outlier,ND	103	0.025	9.9	Outlier,ND
13	0.011	1.6		104	0.0092	0.52	
15	0.010	0.97	ND	106	0.014	3.4	
16	0.0051	-1.9		108	0.0074	-0.57	ND
17	0.0068	-0.92		111	0.0070	-0.82	
19	0.015	4.2		115	0.0060	-1.4	
22	0.0082	-0.081	ND	117	0.0046	-2.3	
23	0.0051	-2.0		119	0.010	0.97	ND
26	0.050	25	Outlier,ND				
28	0.0056	-1.7					
32	0.0030	-3.2	ND				
33	0.013	2.8					
34	0.0052	-1.9					
35	0.0065	-1.1	ND				
39	0.0089	0.32					
40	0.0075	-0.52					
41	0.011	1.6					
42	0.0070	-0.82					
44	0.046	23	Outlier				
46	0.050	25	Outlier,ND				
48	0.020	7.0	Outlier				
50	0.0090	0.38					
51	0.0086	0.13					
52	0.0060	-1.4					
54	0.0070	-0.82					
55	0.0084	0.043					
57	0.012	2.2	ND				
59	0.010	1.1					
64	0.020	6.9	ND				
65	0.0083	-0.043					
69	0.0080	-0.22	ND				
71	0.014	3.4					
72	0.094	51	Outlier,ND				
75	0.016	4.5					
76	0.21	118	Outlier				
77	0.021	7.6	Outlier				
80	0.050	25	Outlier,ND				
81	0.015	4.0					
82	0.10	55	Outlier,ND				
84	0.013	2.8					
87	0.0052	-1.9					
88	0.0080	-0.22	ND				
91	0.022	7.9	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.0084
Median all values pg/g	0.010
Consensus mean, pg/g	0.0092
Standard deviation, pg/g	0.0036
Relative standard deviation, %	40
No. of values reported	55
No. of values removed	13
No. of reported non-detects	19



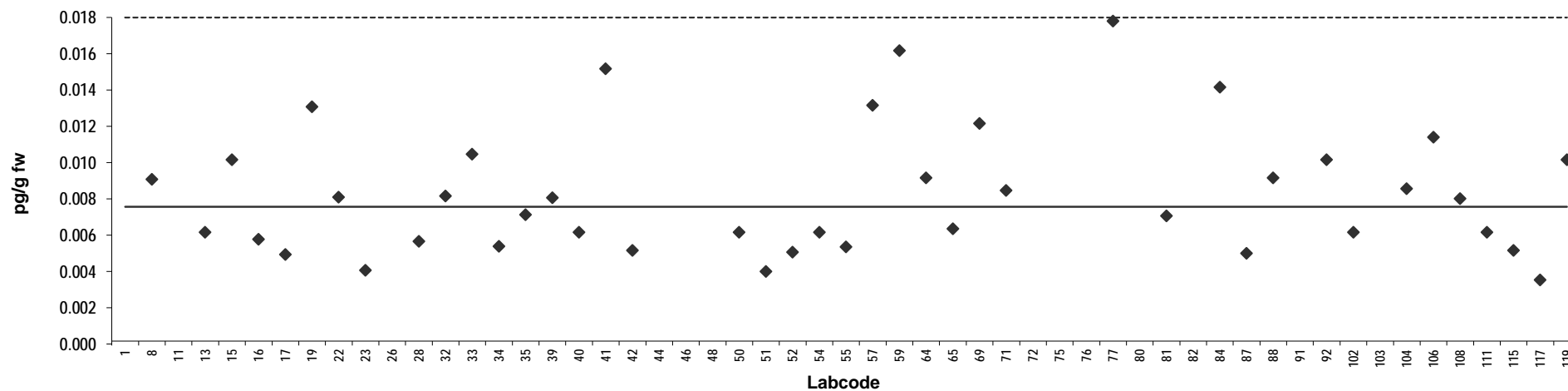
Sheep meat
Congener: 2,3,4,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.040	22	Outlier	92	0.010	1.7	ND
8	0.0089	1.0		102	0.0060	-0.95	ND
11	0.033	17	Outlier,ND	103	0.025	12	Outlier,ND
13	0.0060	-0.95		104	0.0084	0.67	ND
15	0.010	1.7	ND	106	0.011	2.6	
16	0.0056	-1.2		108	0.0079	0.30	ND
17	0.0048	-1.8		111	0.0060	-0.95	
19	0.013	3.7		115	0.0050	-1.6	ND
22	0.0079	0.35	ND	117	0.0034	-2.7	
23	0.0039	-2.4		119	0.010	1.7	ND
26	0.050	29	Outlier,ND				
28	0.0055	-1.3					
32	0.0080	0.40					
33	0.010	2.0					
34	0.0052	-1.5					
35	0.0070	-0.30	ND				
39	0.0079	0.33	ND				
40	0.0060	-0.95	ND				
41	0.015	5.1					
42	0.0050	-1.6					
44	0.037	20	Outlier				
46	0.050	29	Outlier,ND				
48	0.022	10	Outlier				
50	0.0060	-0.95					
51	0.0038	-2.4					
52	0.0049	-1.7	ND				
54	0.0060	-0.95					
55	0.0052	-1.5					
57	0.013	3.8	ND				
59	0.016	5.8					
64	0.0090	1.1	ND				
65	0.0062	-0.82					
69	0.012	3.1	ND				
71	0.0083	0.60					
72	0.087	54	Outlier,ND				
75	0.021	9.1	Outlier				
76	0.16	102	Outlier				
77	0.018	6.9					
80	0.060	35	Outlier				
81	0.0069	-0.34					
82	0.10	62	Outlier,ND				
84	0.014	4.4					
87	0.0048	-1.7					
88	0.0090	1.1	ND				
91	0.024	11	Outlier,ND				

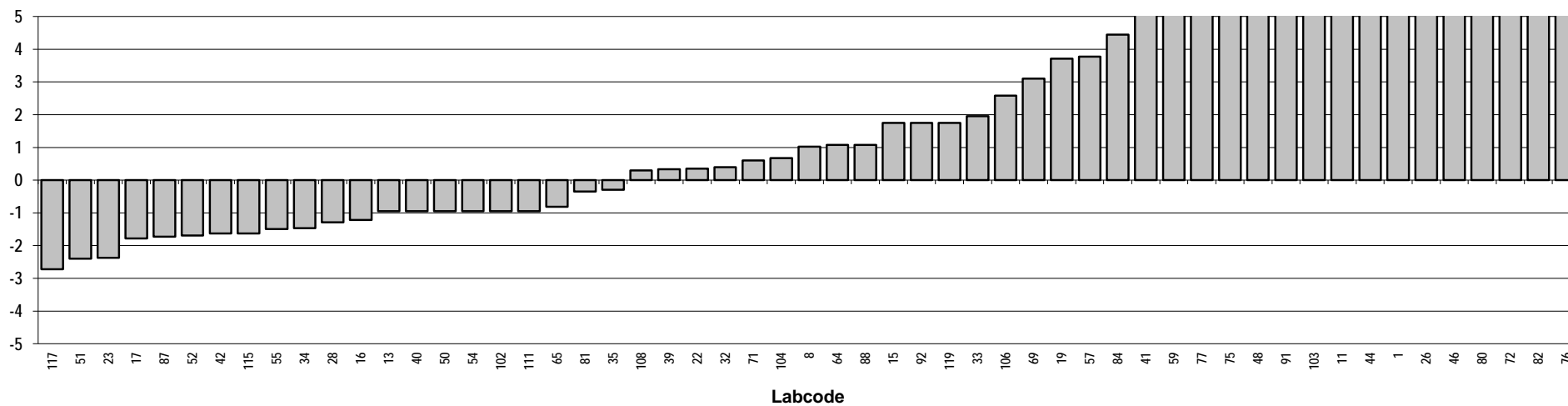
Consensus statistics

Consensus median, pg/g	0.0074
Median all values pg/g	0.0089
Consensus mean, pg/g	0.0081
Standard deviation, pg/g	0.0035
Relative standard deviation, %	43
No. of values reported	55
No. of values removed	13
No. of reported non-detects	23

2,3,4,6,7,8 HxCDF



Z-score: 2,3,4,6,7,8 HxCDF



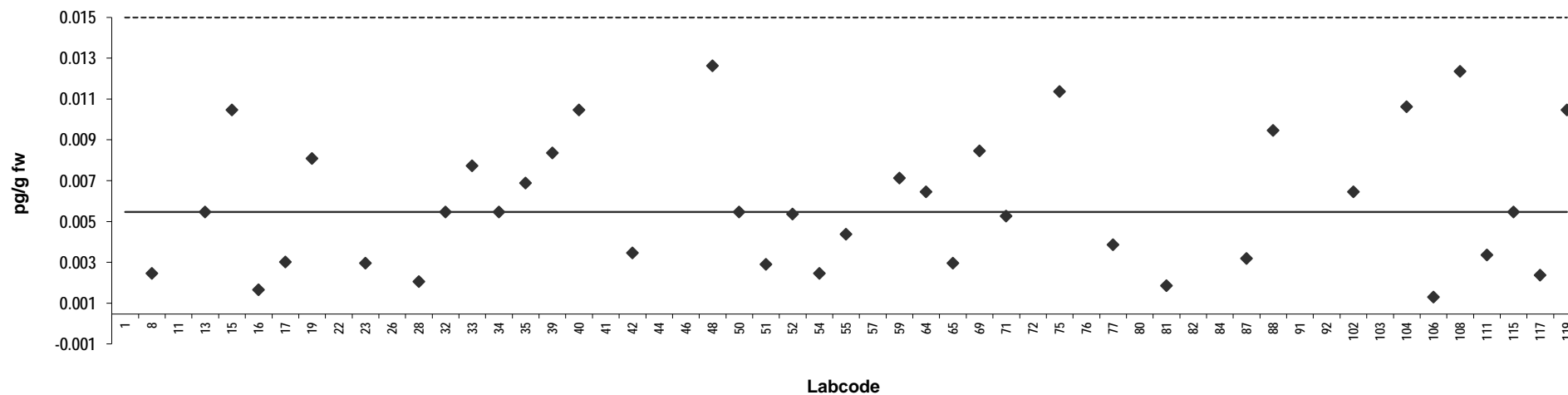
Sheep meat
Congener: 1,2,3,7,8,9 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.033	28	Outlier,ND	92	0.020	15	Outlier,ND
8	0.0020	-3.0	ND	102	0.0060	1.0	ND
11	0.016	11	Outlier,ND	103	0.025	20	Outlier,ND
13	0.0050	0.00	ND	104	0.010	5.2	ND
15	0.010	5.0	ND	106	0.00084	-4.2	
16	0.0012	-3.8	ND	108	0.012	6.9	ND
17	0.0026	-2.4		111	0.0029	-2.1	ND
19	0.0076	2.6		115	0.0050	0.00	ND
22	0.041	36	Outlier	117	0.0019	-3.1	ND
23	0.0025	-2.5	ND	119	0.010	5.0	ND
26	0.050	45	Outlier,ND				
28	0.0016	-3.4	ND				
32	0.0050	0.00	ND				
33	0.0073	2.3					
34	0.0050	0.00	ND				
35	0.0064	1.4	ND				
39	0.0079	2.9					
40	0.010	5.0	ND				
41	0.015	10	Outlier,ND				
42	0.0030	-2.0	ND				
44	0.023	18	Outlier,ND				
46	0.050	45	Outlier,ND				
48	0.012	7.2					
50	0.0050	0.00	ND				
51	0.0024	-2.6	ND				
52	0.0049	-0.10	ND				
54	0.0020	-3.0	ND				
55	0.0039	-1.1	ND				
57	0.020	15	Outlier,ND				
59	0.0067	1.7	ND				
64	0.0060	1.0	ND				
65	0.0025	-2.5					
69	0.0080	3.0	ND				
71	0.0048	-0.20					
72	0.11	104	Outlier,ND				
75	0.011	5.9					
76	0.027	22	Outlier,ND				
77	0.0034	-1.6					
80	0.050	45	Outlier,ND				
81	0.0014	-3.6	ND				
82	0.10	95	Outlier,ND				
84	0.025	20	Outlier				
87	0.0027	-2.3					
88	0.0090	4.0	ND				
91	0.032	27	Outlier,ND				

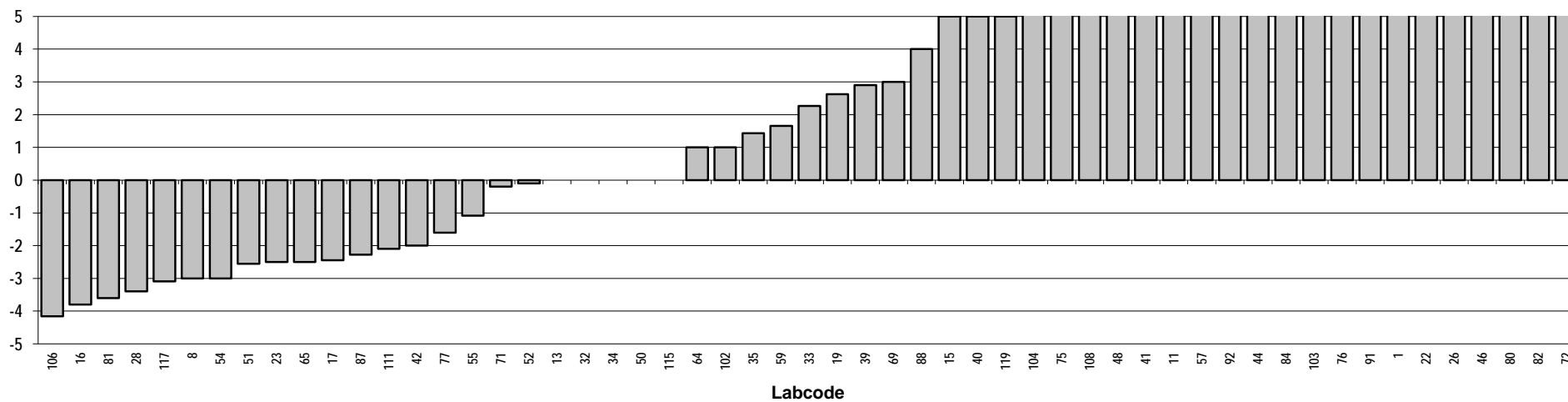
Consensus statistics

Consensus median, pg/g	0.0050
Median all values pg/g	0.0073
Consensus mean, pg/g	0.0054
Standard deviation, pg/g	0.0033
Relative standard deviation, %	60
No. of values reported	55
No. of values removed	16
No. of reported non-detects	42

1,2,3,7,8,9 HxCDF



Z-score: 1,2,3,7,8,9 HxCDF

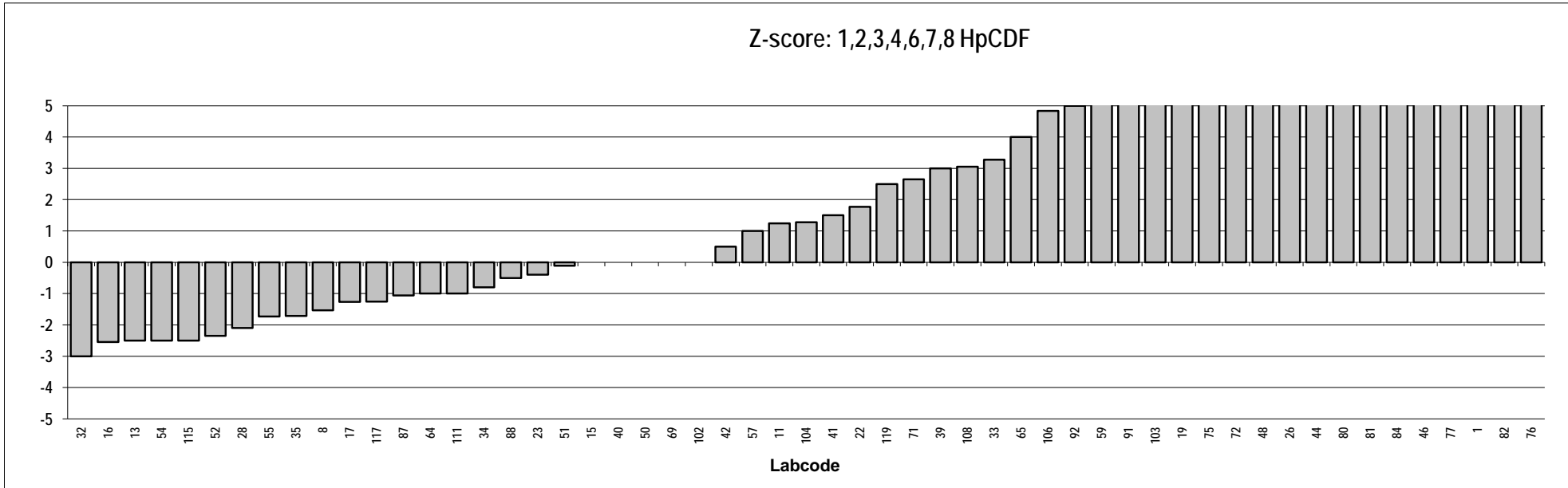
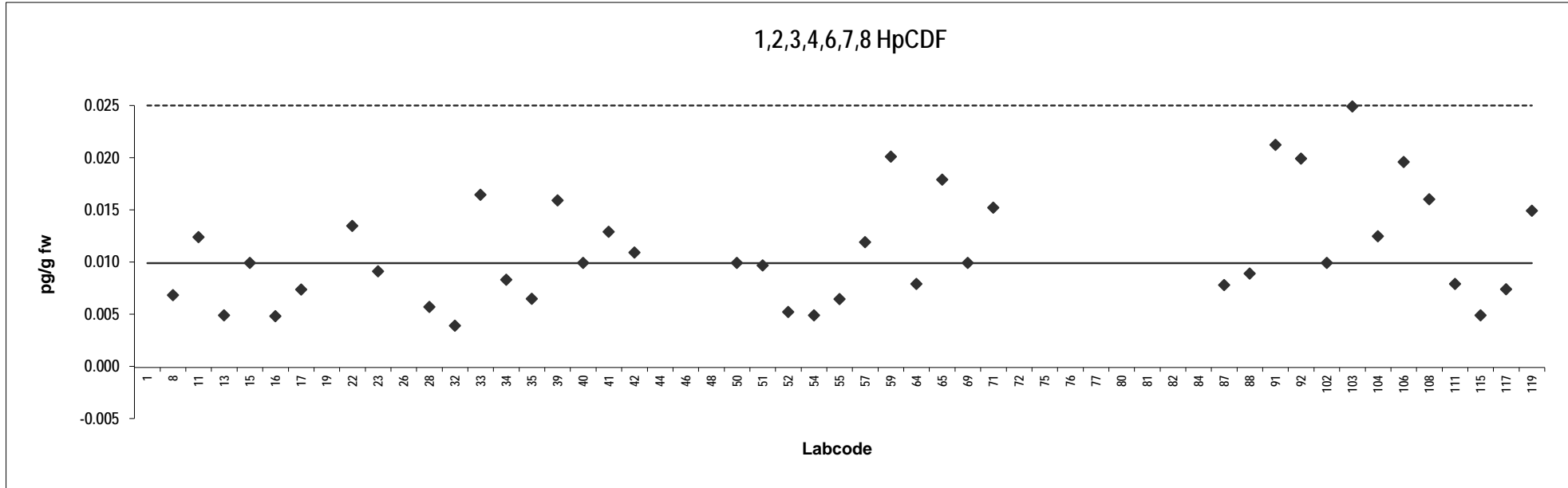


Sheep meat
Congener: 1,2,3,4,6,7,8 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.12	55	Outlier	92	0.020	5.0	ND
8	0.0069	-1.5		102	0.010	0.00	ND
11	0.012	1.2	ND	103	0.025	7.5	ND
13	0.0050	-2.5	ND	104	0.013	1.3	
15	0.010	0.00	ND	106	0.020	4.8	
16	0.0049	-2.5		108	0.016	3.1	
17	0.0075	-1.3		111	0.0080	-1.0	
19	0.037	14	Outlier	115	0.0050	-2.5	ND
22	0.014	1.8		117	0.0075	-1.3	ND
23	0.0092	-0.40		119	0.015	2.5	ND
26	0.050	20	Outlier,ND				
28	0.0058	-2.1					
32	0.0040	-3.0					
33	0.017	3.3					
34	0.0084	-0.80					
35	0.0066	-1.7	ND				
39	0.016	3.0	ND				
40	0.010	0.00	ND				
41	0.013	1.5					
42	0.011	0.50					
44	0.058	24	Outlier				
46	0.10	45	Outlier,ND				
48	0.049	20	Outlier				
50	0.010	0.00					
51	0.0098	-0.11	ND				
52	0.0053	-2.4					
54	0.0050	-2.5					
55	0.0065	-1.7					
57	0.012	1.0					
59	0.020	5.1					
64	0.0080	-1.0	ND				
65	0.018	4.0					
69	0.010	0.00	ND				
71	0.015	2.7					
72	0.049	20	Outlier				
75	0.044	17	Outlier				
76	0.71	350	Outlier				
77	0.12	54	Outlier				
80	0.060	25	Outlier				
81	0.060	25	Outlier				
82	0.13	60	Outlier				
84	0.067	29	Outlier,ND				
87	0.0079	-1.1					
88	0.0090	-0.50	ND				
91	0.021	5.7	ND				

Consensus statistics

Consensus median, pg/g	0.010
Median all values pg/g	0.013
Consensus mean, pg/g	0.011
Standard deviation, pg/g	0.0053
Relative standard deviation, %	47
No. of values reported	55
No. of values removed	14
No. of reported non-detects	20

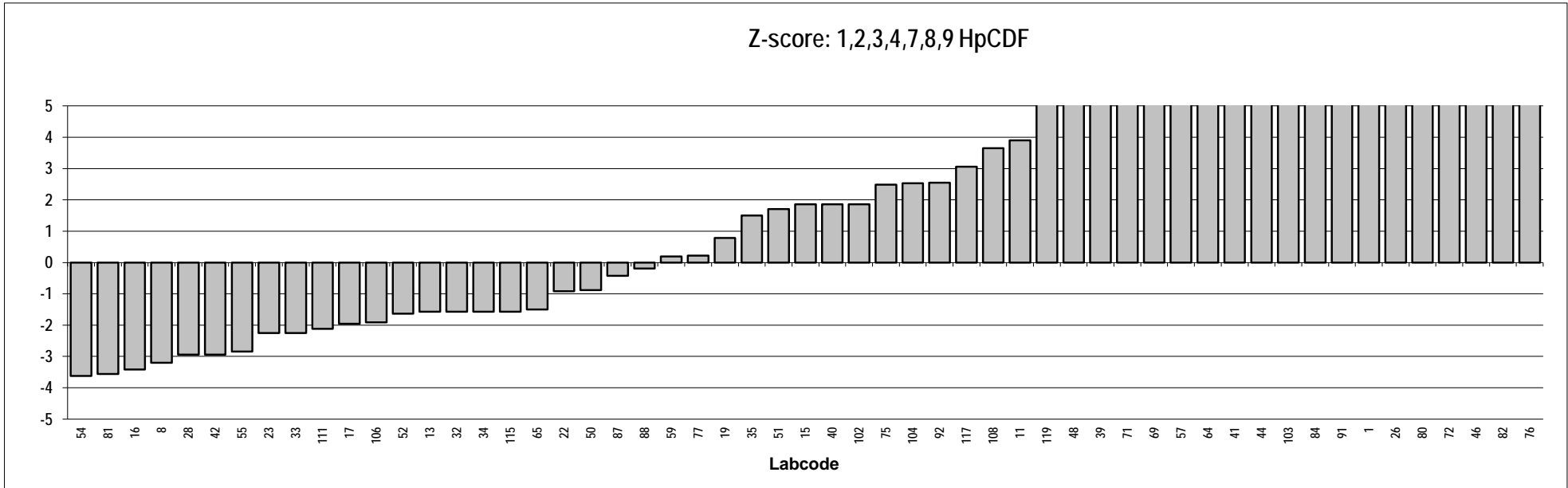
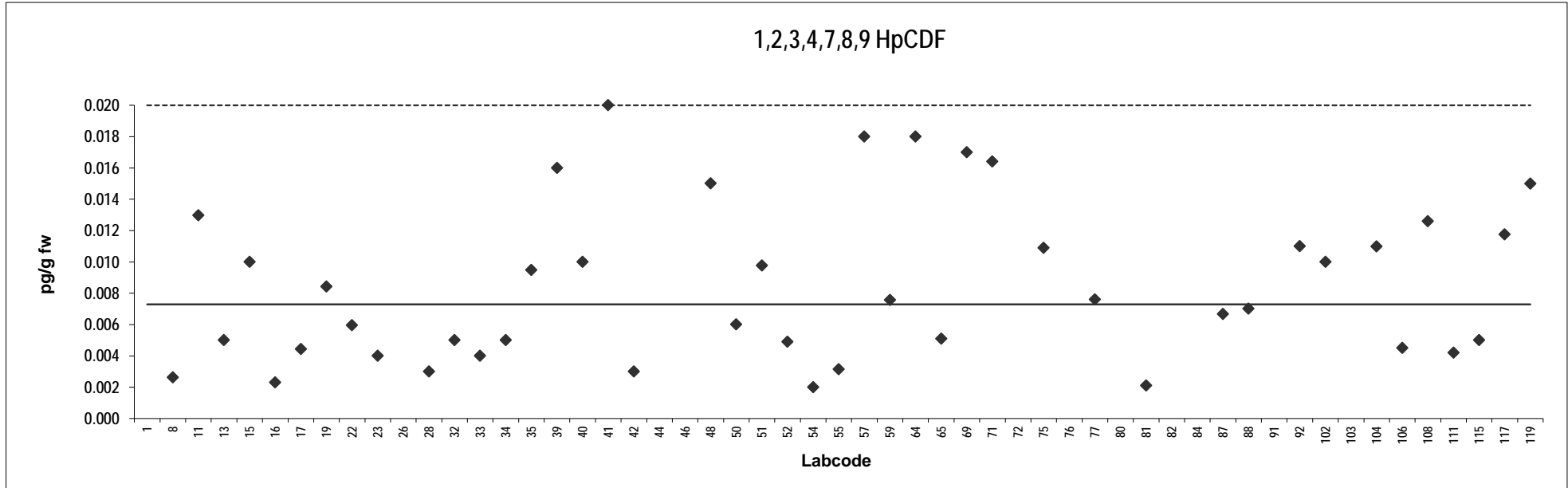


Sheep meat
Congener: 1,2,3,4,7,8,9 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.041	23	Outlier	92	0.011	2.5	ND
8	0.0026	-3.2		102	0.010	1.9	ND
11	0.013	3.9	ND	103	0.025	12	Outlier,ND
13	0.0050	-1.6	ND	104	0.011	2.5	ND
15	0.010	1.9	ND	106	0.0045	-1.9	
16	0.0023	-3.4	ND	108	0.013	3.6	ND
17	0.0044	-2.0		111	0.0042	-2.1	ND
19	0.0084	0.78		115	0.0050	-1.6	ND
22	0.0060	-0.92	ND	117	0.012	3.1	
23	0.0040	-2.3	ND	119	0.015	5.3	ND
26	0.050	29	Outlier,ND				
28	0.0030	-2.9					
32	0.0050	-1.6	ND				
33	0.0040	-2.3					
34	0.0050	-1.6	ND				
35	0.0095	1.5	ND				
39	0.016	6.0	ND				
40	0.010	1.9	ND				
41	0.020	8.7	ND				
42	0.0030	-2.9	ND				
44	0.023	11	Outlier,ND				
46	0.10	64	Outlier,ND				
48	0.015	5.3					
50	0.0060	-0.88	ND				
51	0.0098	1.7	ND				
52	0.0049	-1.6	ND				
54	0.0020	-3.6	ND				
55	0.0031	-2.8					
57	0.018	7.4	ND				
59	0.0076	0.20	ND				
64	0.018	7.4	ND				
65	0.0051	-1.5					
69	0.017	6.7	ND				
71	0.016	6.3					
72	0.061	37	Outlier,ND				
75	0.011	2.5					
76	0.10	66	Outlier				
77	0.0076	0.22					
80	0.050	29	Outlier,ND				
81	0.0021	-3.6	ND				
82	0.10	66	Outlier				
84	0.029	15	Outlier				
87	0.0067	-0.43					
88	0.0070	-0.20	ND				
91	0.039	22	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.0073
Median all values pg/g	0.010
Consensus mean, pg/g	0.0085
Standard deviation, pg/g	0.0050
Relative standard deviation, %	59
No. of values reported	55
No. of values removed	11
No. of reported non-detects	37

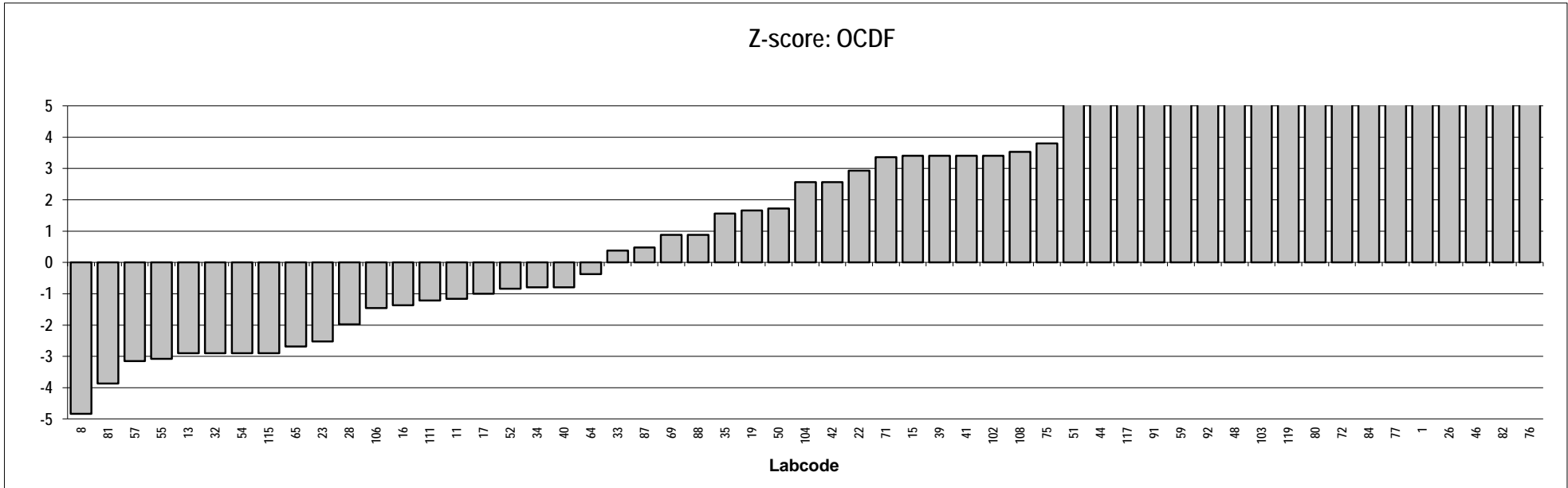
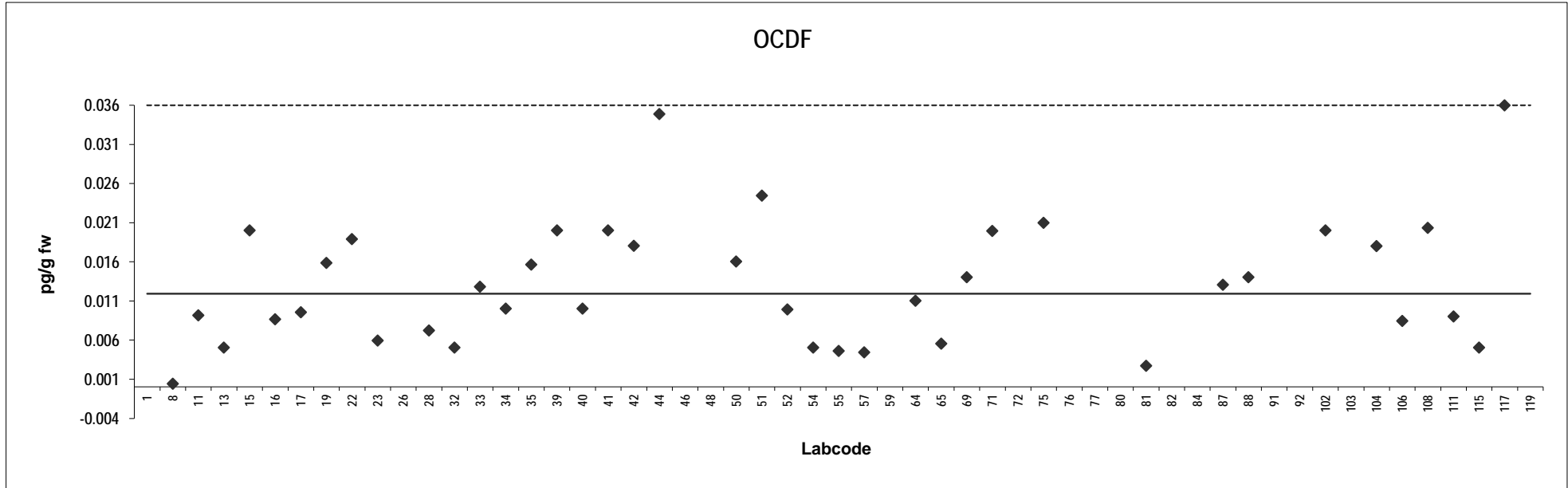


Sheep meat
Congener: OCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.16	64	Outlier	92	0.040	12	Outlier,ND
8	0.00040	-4.8	ND	102	0.020	3.4	ND
11	0.0091	-1.2	ND	103	0.050	16	Outlier,ND
13	0.0050	-2.9	ND	104	0.018	2.6	
15	0.020	3.4	ND	106	0.0084	-1.5	
16	0.0086	-1.4		108	0.020	3.5	ND
17	0.0095	-1.0		111	0.0090	-1.2	
19	0.016	1.7		115	0.0050	-2.9	ND
22	0.019	2.9	ND	117	0.036	10	ND
23	0.0059	-2.5		119	0.050	16	Outlier
26	0.20	79	Outlier,ND				
28	0.0072	-2.0					
32	0.0050	-2.9	ND				
33	0.013	0.38					
34	0.010	-0.80	ND				
35	0.016	1.6	ND				
39	0.020	3.4	ND				
40	0.010	-0.80					
41	0.020	3.4	ND				
42	0.018	2.6					
44	0.035	9.6	ND				
46	0.20	79	Outlier,ND				
48	0.045	14	Outlier				
50	0.016	1.7					
51	0.024	5.3	ND				
52	0.0099	-0.84	ND				
54	0.0050	-2.9					
55	0.0046	-3.1					
57	0.0044	-3.2	ND				
59	0.039	12	Outlier				
64	0.011	-0.38					
65	0.0055	-2.7					
69	0.014	0.88	ND				
71	0.020	3.4	ND				
72	0.11	40	Outlier,ND				
75	0.021	3.8					
76	0.41	168	Outlier				
77	0.12	45	Outlier				
80	0.080	29	Outlier				
81	0.0027	-3.9	ND				
82	0.23	93	Outlier				
84	0.11	43	Outlier				
87	0.013	0.48					
88	0.014	0.88	ND				
91	0.039	11	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.012
Median all values pg/g	0.018
Consensus mean, pg/g	0.013
Standard deviation, pg/g	0.0080
Relative standard deviation, %	61
No. of values reported	55
No. of values removed	15
No. of reported non-detects	28

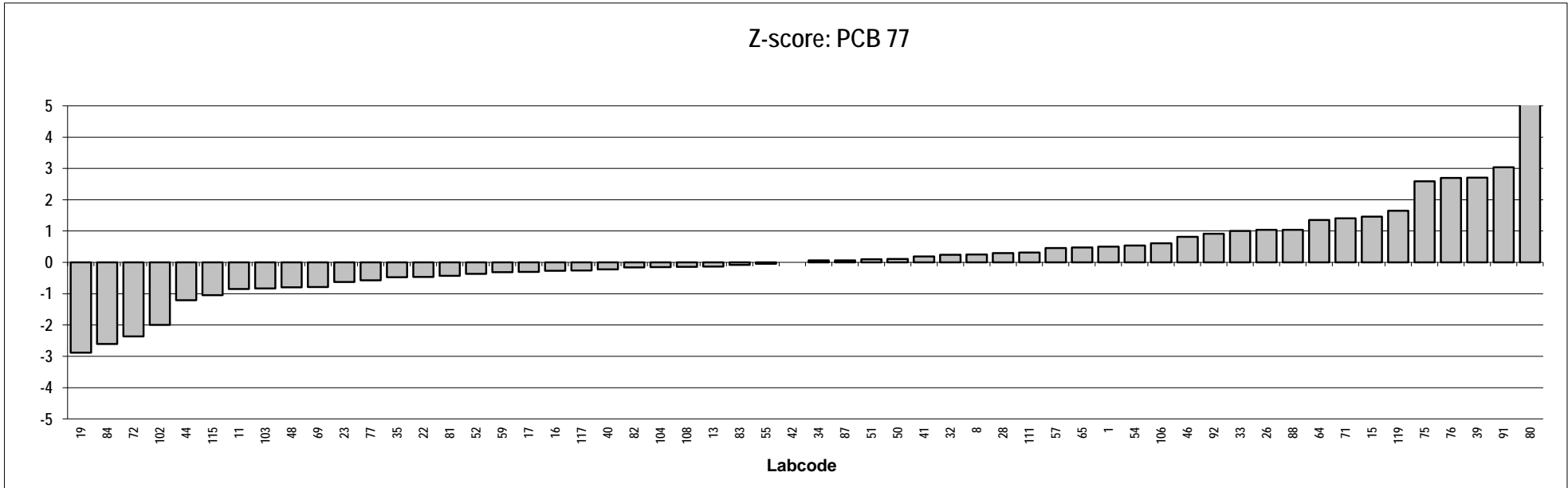
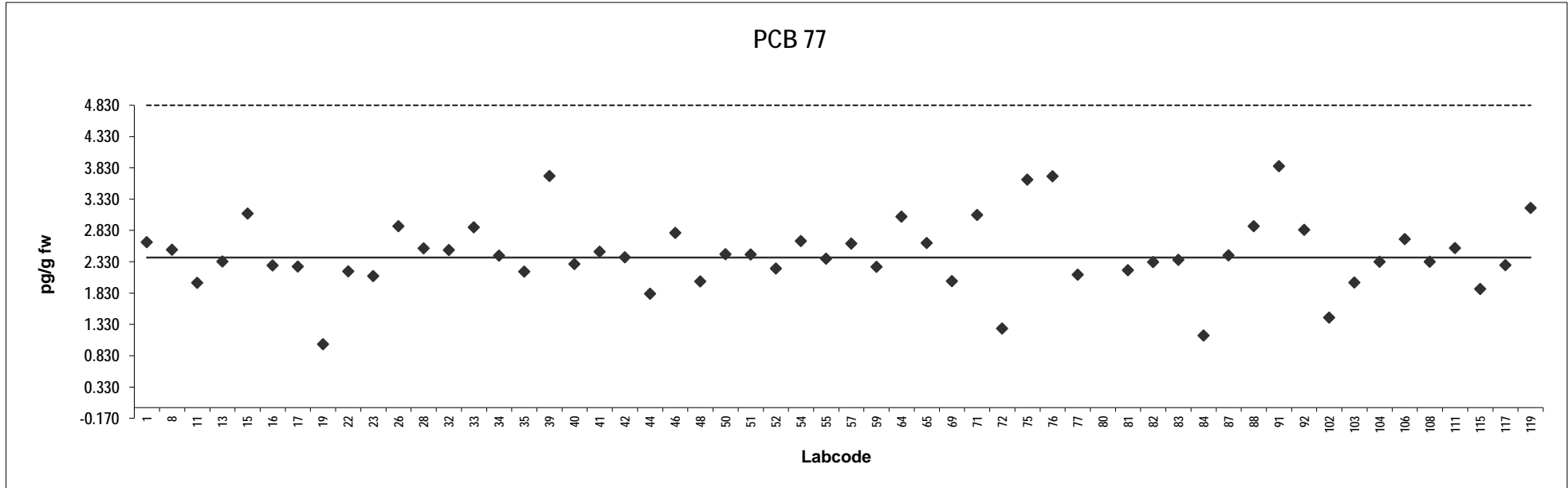


Sheep meat
Congener: PCB 77

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2.6	0.50		91	3.9	3.0	
8	2.5	0.26		92	2.8	0.92	
11	2.0	-0.85		102	1.4	-2.0	
13	2.3	-0.14		103	2.0	-0.83	
15	3.1	1.5		104	2.3	-0.15	
16	2.3	-0.27		106	2.7	0.61	
17	2.3	-0.30		108	2.3	-0.15	
19	1.0	-2.9		111	2.6	0.31	
22	2.2	-0.47		115	1.9	-1.0	
23	2.1	-0.63		117	2.3	-0.25	
26	2.9	1.0		119	3.2	1.6	
28	2.5	0.30					
32	2.5	0.25					
33	2.9	1.0					
34	2.4	0.063					
35	2.2	-0.47					
39	3.7	2.7					
40	2.3	-0.22					
41	2.5	0.19					
42	2.4	0.00					
44	1.8	-1.2					
46	2.8	0.81					
48	2.0	-0.80					
50	2.5	0.10					
51	2.4	0.099					
52	2.2	-0.37					
54	2.7	0.54					
55	2.4	-0.041					
57	2.6	0.46					
59	2.3	-0.31					
64	3.1	1.4					
65	2.6	0.48					
69	2.0	-0.79					
71	3.1	1.4					
72	1.3	-2.4					
75	3.6	2.6					
76	3.7	2.7					
77	2.1	-0.58					
80	15	26	Outlier				
81	2.2	-0.43					
82	2.3	-0.16					
83	2.4	-0.083					
84	1.2	-2.6					
87	2.4	0.064					
88	2.9	1.0					

Consensus statistics

Consensus median, pg/g	2.4
Median all values pg/g	2.4
Consensus mean, pg/g	2.4
Standard deviation, pg/g	0.57
Relative standard deviation, %	23
No. of values reported	56
No. of values removed	1
No. of reported non-detects	0

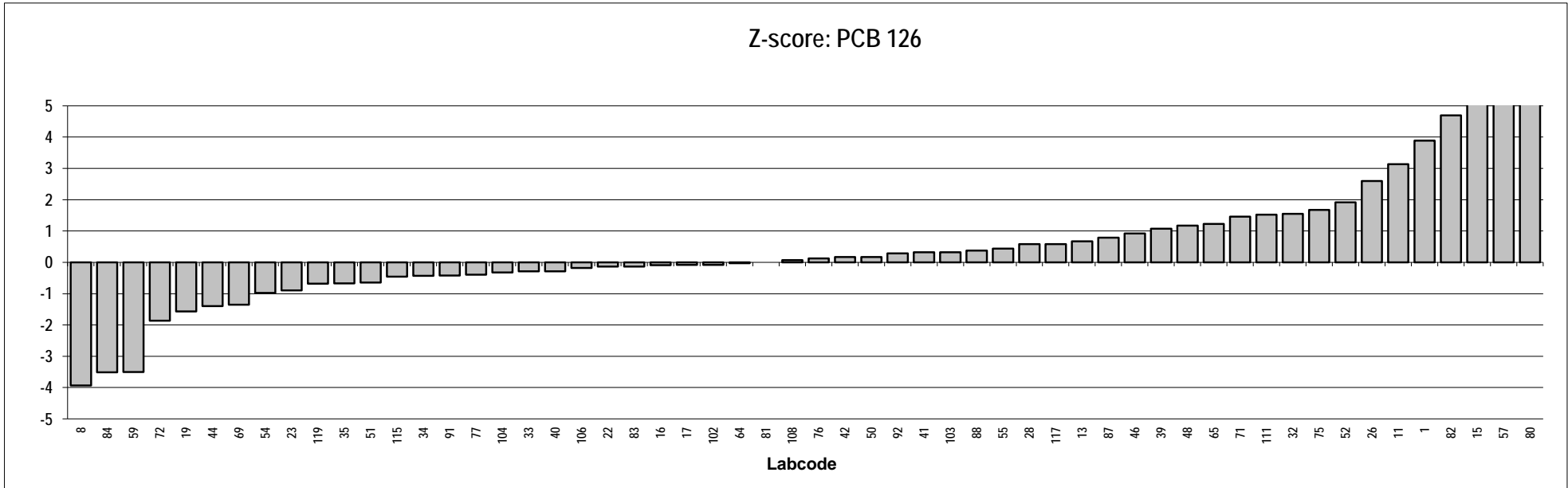
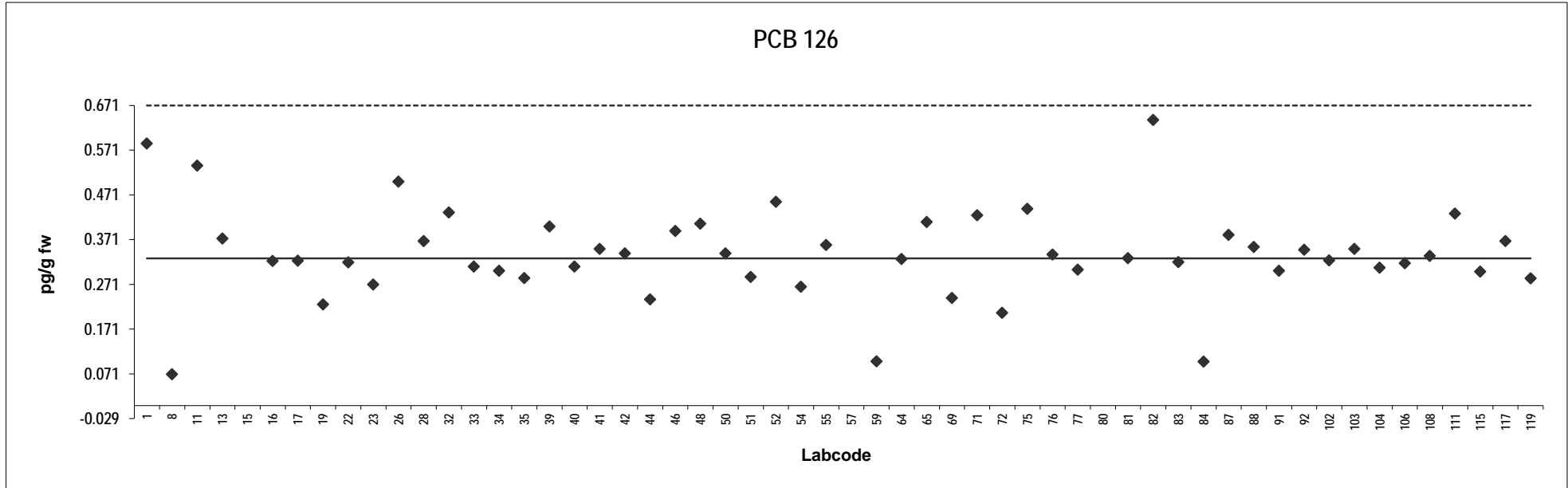


Sheep meat
Congener: PCB 126

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.59	3.9		91	0.30	-0.43	
8	0.070	-3.9	ND	92	0.35	0.29	
11	0.54	3.1	ND	102	0.32	-0.077	
13	0.37	0.67		103	0.35	0.32	
15	0.81	7.3	Outlier	104	0.31	-0.32	
16	0.32	-0.093		106	0.32	-0.18	
17	0.32	-0.082		108	0.33	0.074	
19	0.23	-1.6		111	0.43	1.5	
22	0.32	-0.14		115	0.30	-0.46	
23	0.27	-0.90		117	0.37	0.58	
26	0.50	2.6	ND	119	0.28	-0.69	
28	0.37	0.58					
32	0.43	1.5					
33	0.31	-0.29					
34	0.30	-0.43					
35	0.28	-0.68					
39	0.40	1.1					
40	0.31	-0.29					
41	0.35	0.32					
42	0.34	0.17					
44	0.24	-1.4					
46	0.39	0.93					
48	0.41	1.2					
50	0.34	0.17					
51	0.29	-0.64					
52	0.46	1.9					
54	0.27	-0.97					
55	0.36	0.44					
57	0.95	9.4	Outlier				
59	0.099	-3.5					
64	0.33	-0.032					
65	0.41	1.2					
69	0.24	-1.4					
71	0.43	1.5					
72	0.21	-1.9					
75	0.44	1.7					
76	0.34	0.12	ND				
77	0.30	-0.39					
80	2.1	27	Outlier				
81	0.33	0.00					
82	0.64	4.7					
83	0.32	-0.14					
84	0.098	-3.5	ND				
87	0.38	0.79					
88	0.35	0.38					

Consensus statistics

Consensus median, pg/g	0.33
Median all values pg/g	0.34
Consensus mean, pg/g	0.34
Standard deviation, pg/g	0.10
Relative standard deviation, %	30
No. of values reported	56
No. of values removed	3
No. of reported non-detects	5

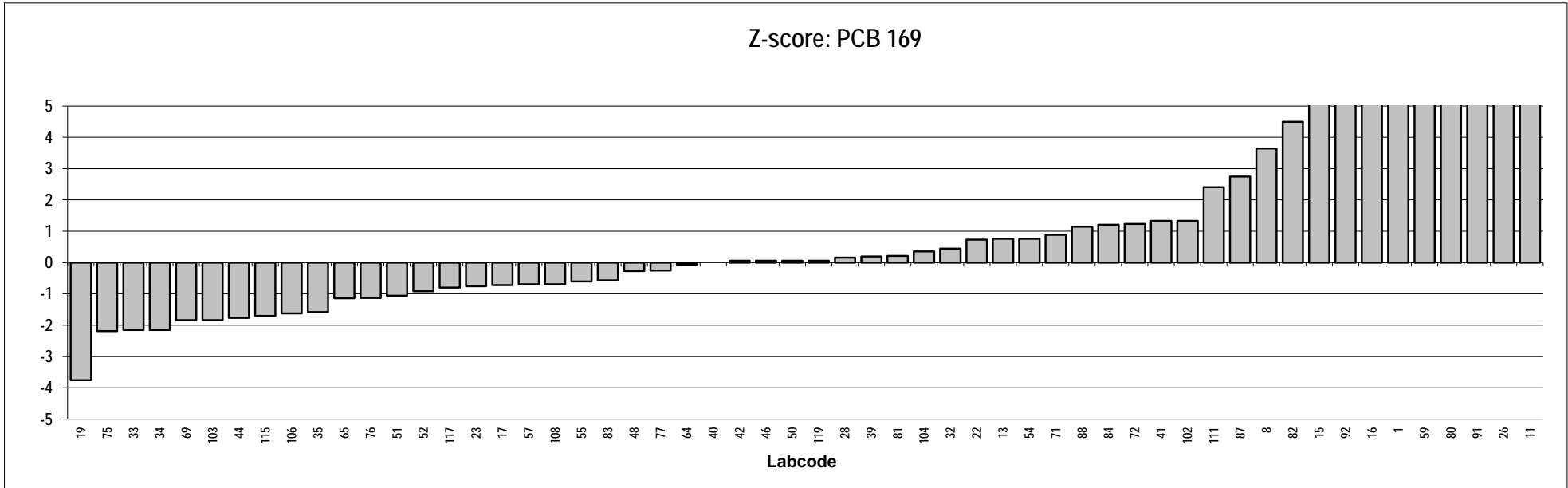
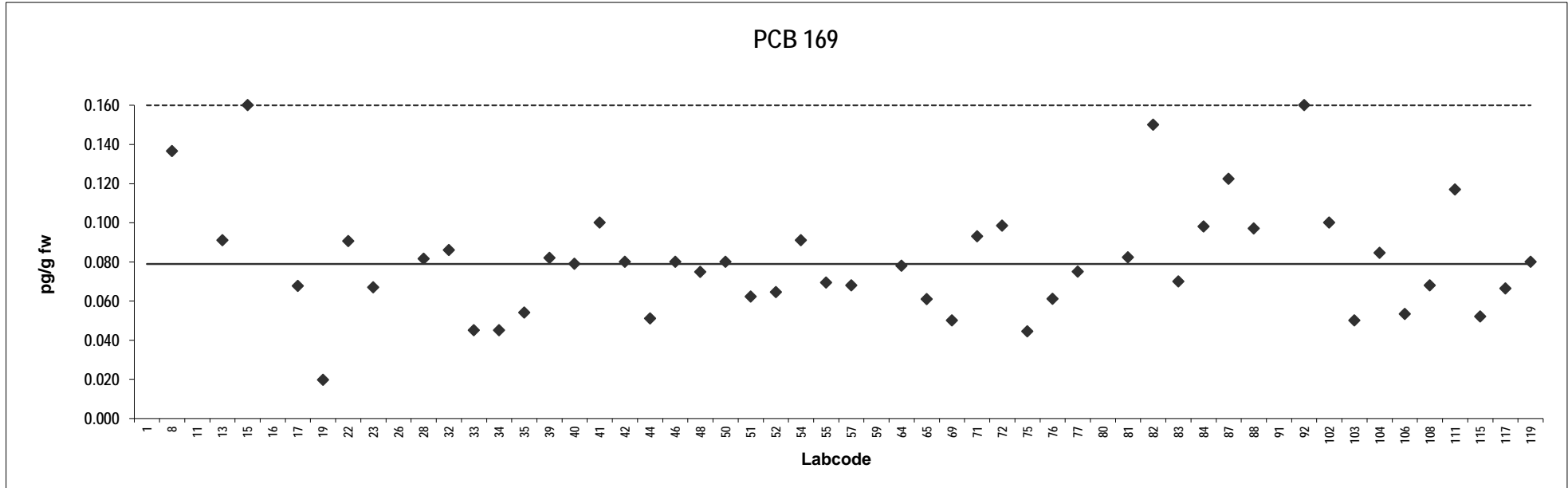


Sheep meat
Congener: PCB 169

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.19	7.0	Outlier,ND	91	0.37	18	Outlier,ND
8	0.14	3.6		92	0.16	5.1	ND
11	2.1	126	Outlier,ND	102	0.10	1.3	ND
13	0.091	0.76		103	0.050	-1.8	ND
15	0.16	5.1		104	0.085	0.35	
16	0.16	5.3	Outlier	106	0.053	-1.6	
17	0.068	-0.72		108	0.068	-0.70	
19	0.020	-3.8		111	0.12	2.4	
22	0.091	0.73		115	0.052	-1.7	
23	0.067	-0.76		117	0.066	-0.80	
26	2.0	122	Outlier,ND	119	0.080	0.063	ND
28	0.082	0.16					
32	0.086	0.44					
33	0.045	-2.2					
34	0.045	-2.2					
35	0.054	-1.6					
39	0.082	0.19					
40	0.079	0.00					
41	0.10	1.3					
42	0.080	0.063					
44	0.051	-1.8					
46	0.080	0.063					
48	0.075	-0.27					
50	0.080	0.063					
51	0.062	-1.1					
52	0.065	-0.92					
54	0.091	0.76					
55	0.069	-0.60					
57	0.068	-0.70					
59	0.31	14	Outlier				
64	0.078	-0.063					
65	0.061	-1.1					
69	0.050	-1.8					
71	0.093	0.89					
72	0.099	1.2	ND				
75	0.044	-2.2					
76	0.061	-1.1	ND				
77	0.075	-0.25					
80	0.33	16	Outlier				
81	0.082	0.21					
82	0.15	4.5	ND				
83	0.070	-0.57					
84	0.098	1.2	ND				
87	0.12	2.7					
88	0.097	1.1					

Consensus statistics

Consensus median, pg/g	0.079
Median all values pg/g	0.080
Consensus mean, pg/g	0.080
Standard deviation, pg/g	0.029
Relative standard deviation, %	36
No. of values reported	56
No. of values removed	7
No. of reported non-detects	12

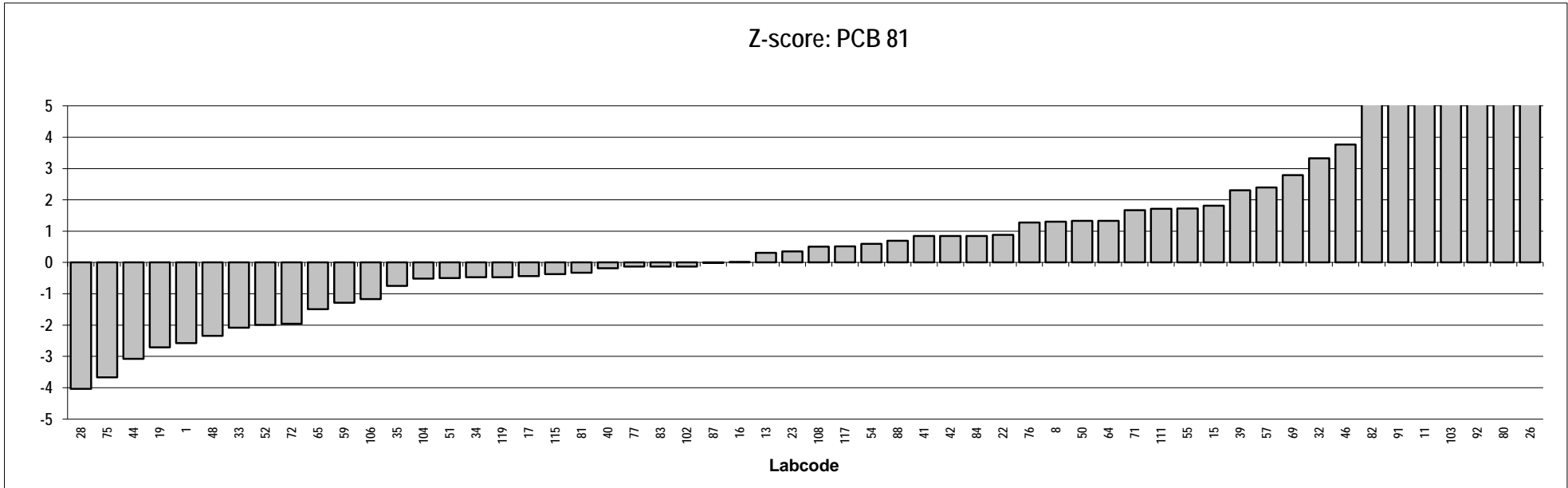
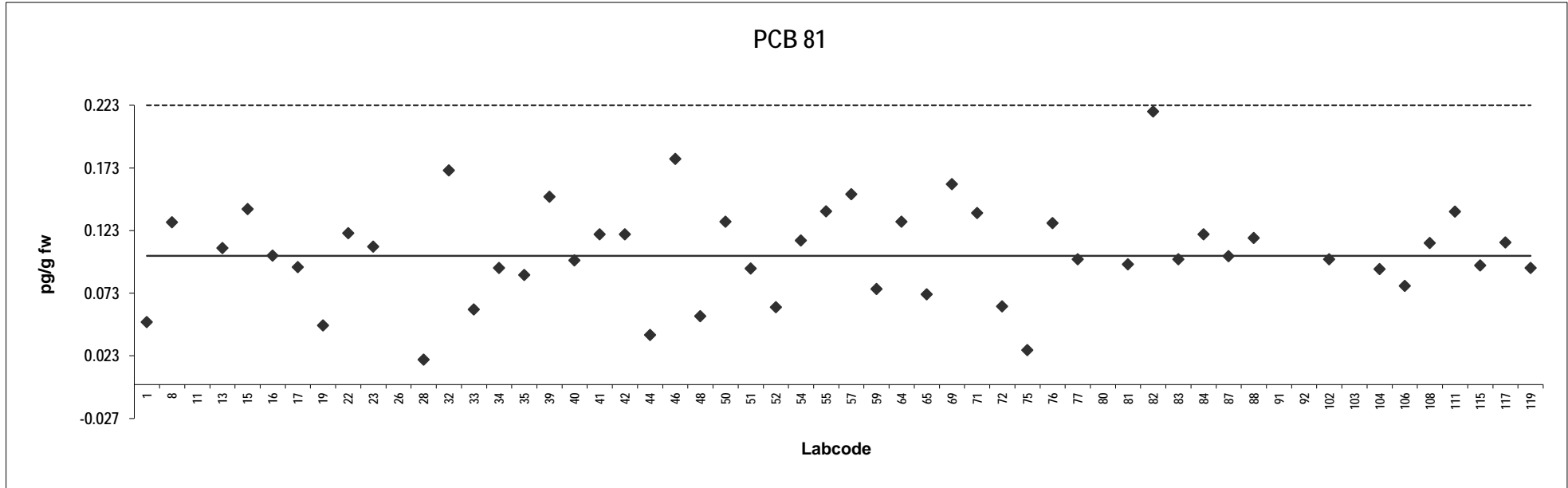


Sheep meat
Congener: PCB 81

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.050	-2.6		91	0.24	6.6	Outlier,ND
8	0.13	1.3		92	0.51	20	Outlier,ND
11	0.48	18	Outlier,ND	102	0.10	-0.13	ND
13	0.11	0.31		103	0.50	19	Outlier,ND
15	0.14	1.8		104	0.092	-0.51	
16	0.10	0.015		106	0.079	-1.2	
17	0.094	-0.43		108	0.11	0.50	
19	0.047	-2.7		111	0.14	1.7	
22	0.12	0.88		115	0.095	-0.37	
23	0.11	0.36		117	0.11	0.52	
26	2.0	92	Outlier,ND	119	0.093	-0.47	
28	0.020	-4.0	ND				
32	0.17	3.3					
33	0.060	-2.1					
34	0.093	-0.47					
35	0.087	-0.75					
39	0.15	2.3					
40	0.099	-0.18					
41	0.12	0.84					
42	0.12	0.84					
44	0.039	-3.1					
46	0.18	3.8					
48	0.055	-2.3					
50	0.13	1.3					
51	0.093	-0.50					
52	0.062	-2.0	ND				
54	0.12	0.60					
55	0.14	1.7					
57	0.15	2.4					
59	0.076	-1.3					
64	0.13	1.3					
65	0.072	-1.5					
69	0.16	2.8					
71	0.14	1.7					
72	0.062	-2.0	ND				
75	0.027	-3.7					
76	0.13	1.3	ND				
77	0.10	-0.13					
80	0.70	29	Outlier				
81	0.096	-0.33					
82	0.22	5.6					
83	0.10	-0.13					
84	0.12	0.84	ND				
87	0.10	-0.015					
88	0.12	0.70					

Consensus statistics

Consensus median, pg/g	0.10
Median all values pg/g	0.11
Consensus mean, pg/g	0.11
Standard deviation, pg/g	0.039
Relative standard deviation, %	37
No. of values reported	56
No. of values removed	6
No. of reported non-detects	11

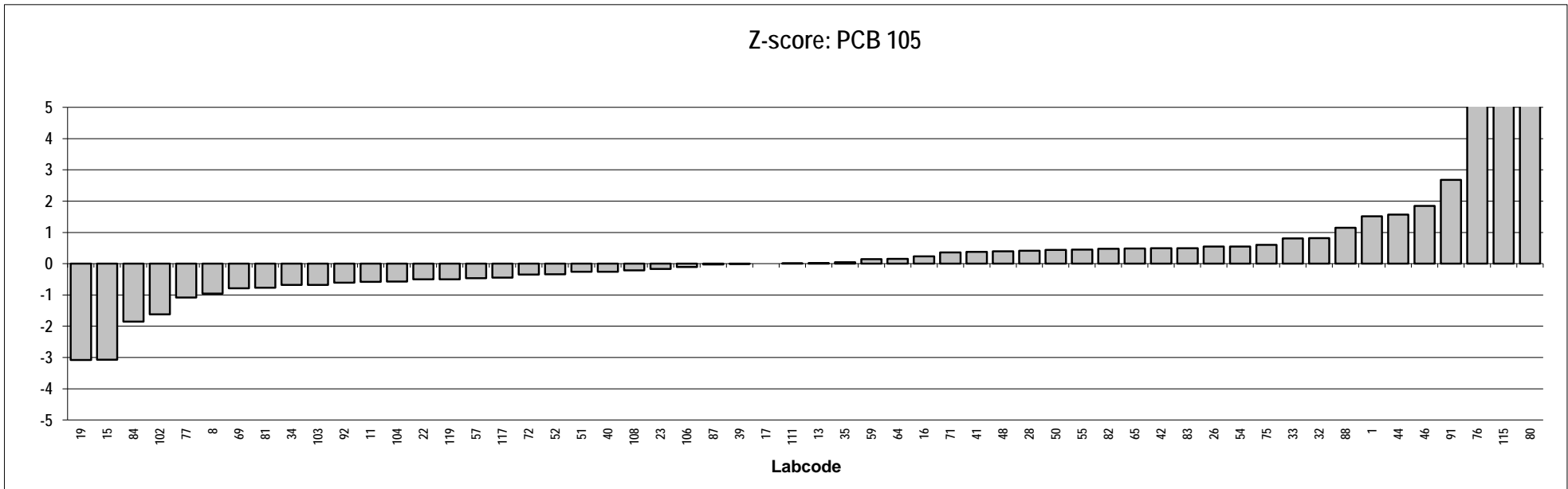
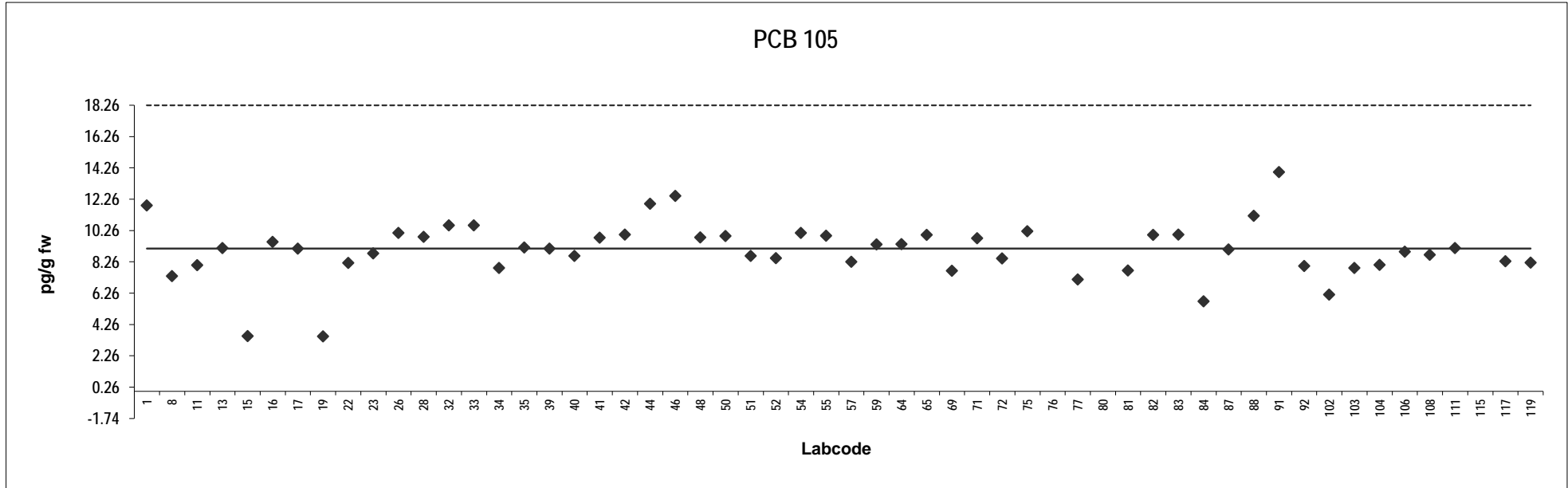


Sheep meat
Congener: PCB 105

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	12	1.5		91	14	2.7	
8	7.4	-0.96		92	8.0	-0.61	
11	8.0	-0.58		102	6.2	-1.6	
13	9.1	0.016		103	7.9	-0.68	
15	3.5	-3.1		104	8.1	-0.57	
16	9.5	0.23		106	8.9	-0.11	
17	9.1	0.00		108	8.7	-0.22	
19	3.5	-3.1		111	9.1	0.015	
22	8.2	-0.50		115	25	8.7	Outlier
23	8.8	-0.17		117	8.3	-0.45	
26	10	0.55		119	8.2	-0.50	
28	9.9	0.41					
32	11	0.82					
33	11	0.81					
34	7.9	-0.68					
35	9.2	0.043					
39	9.1	-0.0019					
40	8.6	-0.26					
41	9.8	0.38					
42	10	0.49					
44	12	1.6					
46	12	1.8					
48	9.8	0.39					
50	9.9	0.44					
51	8.6	-0.26					
52	8.5	-0.34					
54	10	0.55					
55	9.9	0.45					
57	8.3	-0.46					
59	9.4	0.15					
64	9.4	0.15					
65	10	0.48					
69	7.7	-0.78					
71	9.8	0.36					
72	8.5	-0.34					
75	10	0.61					
76	21	6.4	Outlier				
77	7.1	-1.1					
80	46	20	Outlier				
81	7.7	-0.77					
82	10	0.48					
83	10	0.49	ND				
84	5.7	-1.9					
87	9.1	-0.026					
88	11	1.2					

Consensus statistics

Consensus median, pg/g	9.1
Median all values pg/g	9.1
Consensus mean, pg/g	9.0
Standard deviation, pg/g	1.8
Relative standard deviation, %	20
No. of values reported	56
No. of values removed	3
No. of reported non-detects	1

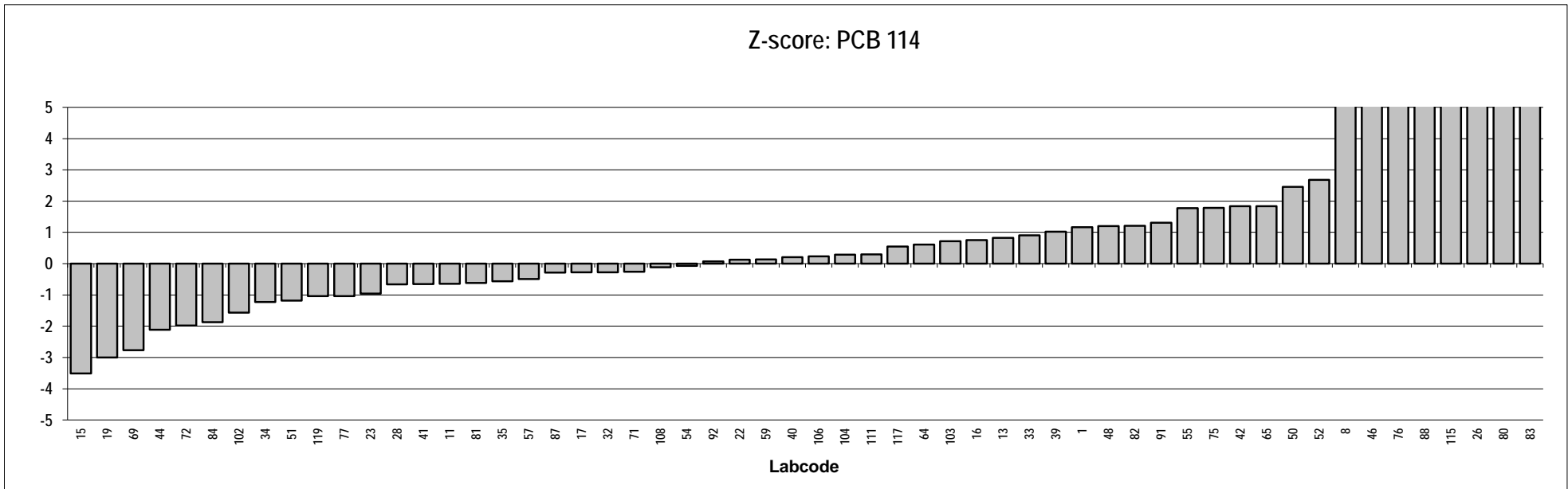
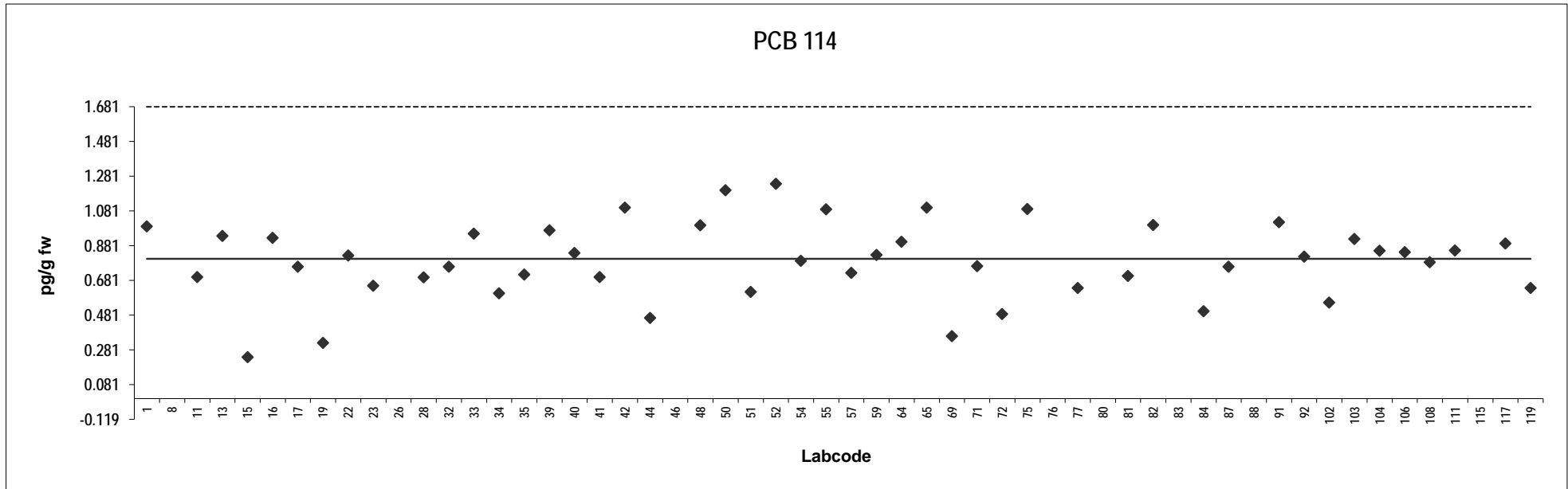


Sheep meat
Congener: PCB 114

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.99	1.2		91	1.0	1.3	
8	1.7	5.8	Outlier,ND	92	0.82	0.075	
11	0.70	-0.65		102	0.55	-1.6	
13	0.94	0.82		103	0.92	0.71	
15	0.24	-3.5		104	0.85	0.29	
16	0.93	0.75		106	0.84	0.24	
17	0.76	-0.28		108	0.79	-0.12	
19	0.32	-3.0		111	0.85	0.30	
22	0.82	0.12		115	3.2	15	Outlier,ND
23	0.65	-0.96		117	0.89	0.55	
26	10	57	Outlier,ND	119	0.64	-1.0	
28	0.70	-0.67					
32	0.76	-0.28					
33	0.95	0.90					
34	0.61	-1.2					
35	0.71	-0.56					
39	0.97	1.0					
40	0.84	0.20					
41	0.70	-0.65	ND				
42	1.1	1.8					
44	0.46	-2.1	ND				
46	2.0	7.4	Outlier,ND				
48	1.0	1.2					
50	1.2	2.5					
51	0.61	-1.2					
52	1.2	2.7	ND				
54	0.79	-0.075					
55	1.1	1.8					
57	0.73	-0.50					
59	0.83	0.14					
64	0.90	0.61					
65	1.1	1.8					
69	0.36	-2.8					
71	0.76	-0.26					
72	0.49	-2.0					
75	1.1	1.8					
76	2.2	8.4	Outlier				
77	0.64	-1.0					
80	10	57	Outlier,ND				
81	0.71	-0.61					
82	1.0	1.2	ND				
83	10	57	Outlier,ND				
84	0.50	-1.9	ND				
87	0.76	-0.28					
88	3.0	13	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.81
Median all values pg/g	0.84
Consensus mean, pg/g	0.79
Standard deviation, pg/g	0.22
Relative standard deviation, %	28
No. of values reported	56
No. of values removed	8
No. of reported non-detects	12

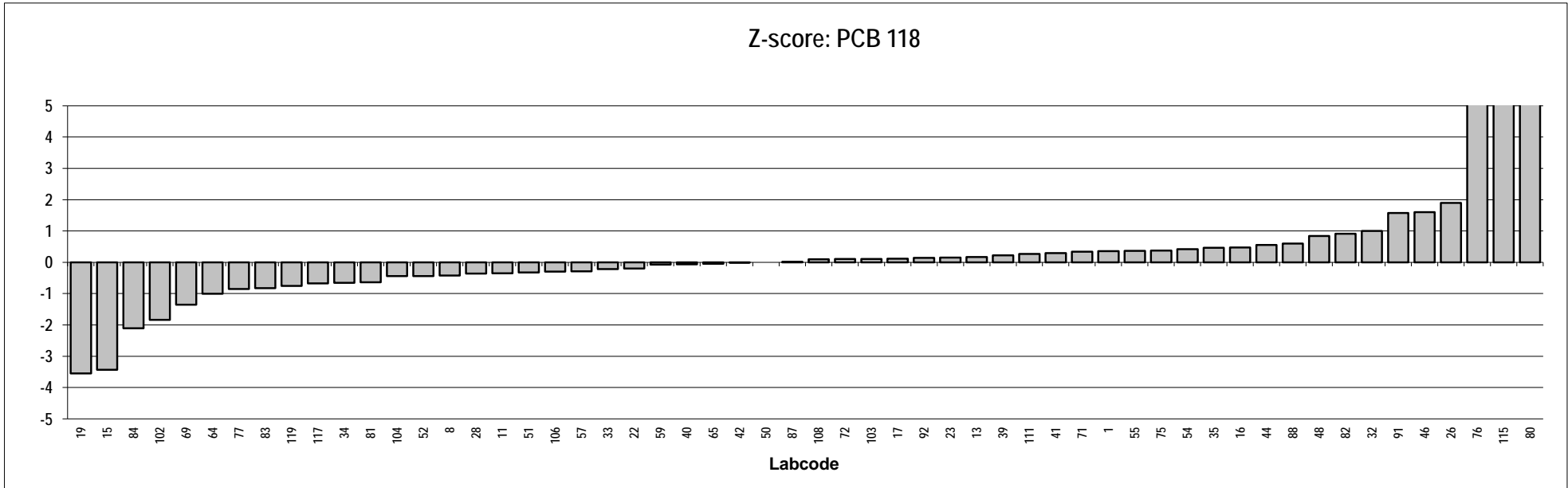
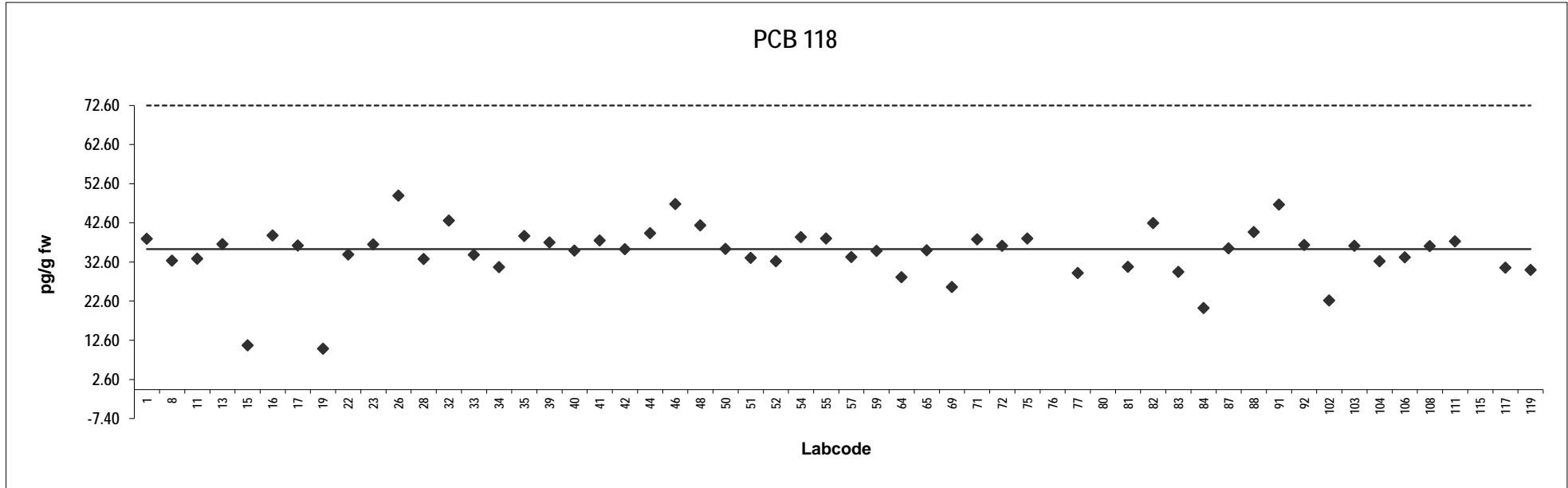


Sheep meat
Congener: PCB 118

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	38	0.36		91	47	1.6	
8	33	-0.42		92	37	0.14	
11	33	-0.35		102	23	-1.8	
13	37	0.17		103	37	0.10	
15	11	-3.4		104	33	-0.44	
16	39	0.47		106	34	-0.30	
17	37	0.12		108	37	0.097	
19	10	-3.6		111	38	0.26	
22	34	-0.20		115	100	8.9	Outlier
23	37	0.15		117	31	-0.67	
26	50	1.9		119	30	-0.75	
28	33	-0.36					
32	43	1.0					
33	34	-0.21					
34	31	-0.65					
35	39	0.46					
39	38	0.22					
40	35	-0.062					
41	38	0.29					
42	36	-0.014					
44	40	0.55					
46	47	1.6					
48	42	0.84					
50	36	0.00					
51	34	-0.32					
52	33	-0.44					
54	39	0.42					
55	39	0.36					
57	34	-0.29					
59	35	-0.070					
64	29	-1.0					
65	36	-0.049					
69	26	-1.4					
71	38	0.34					
72	37	0.10					
75	39	0.37					
76	93	7.9	Outlier				
77	30	-0.86					
80	147	15	Outlier				
81	31	-0.64					
82	42	0.91					
83	30	-0.82					
84	21	-2.1					
87	36	0.014					
88	40	0.60					

Consensus statistics

Consensus median, pg/g	36
Median all values pg/g	36
Consensus mean, pg/g	35
Standard deviation, pg/g	7.2
Relative standard deviation, %	21
No. of values reported	56
No. of values removed	3
No. of reported non-detects	0

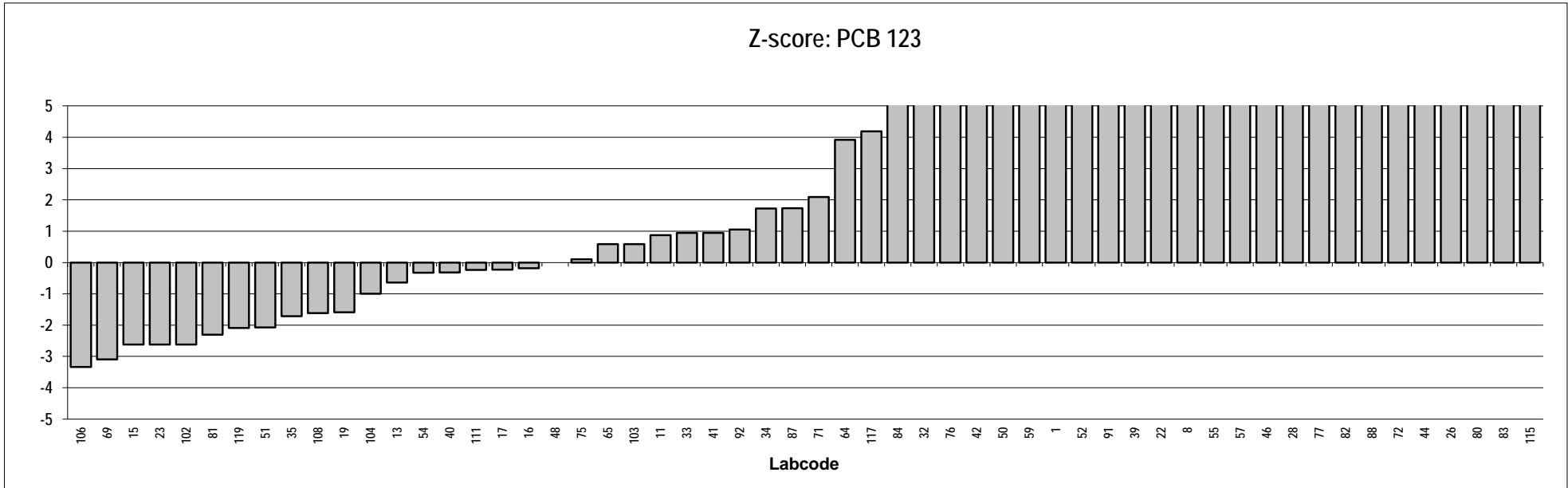
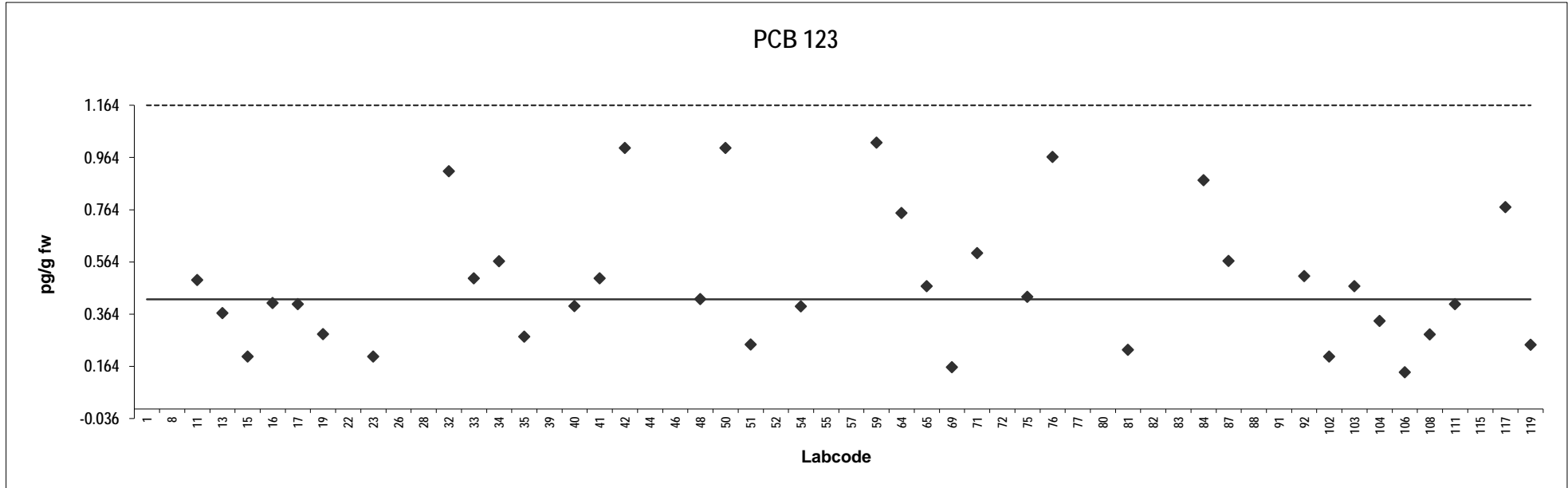


Sheep meat
Congener: PCB 123

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1.2	8.9	Outlier	91	1.3	9.9	Outlier,ND
8	1.5	13	Outlier,ND	92	0.51	1.1	
11	0.49	0.87		102	0.20	-2.6	ND
13	0.37	-0.64		103	0.47	0.59	
15	0.20	-2.6		104	0.34	-0.99	
16	0.41	-0.19		106	0.14	-3.3	
17	0.40	-0.22		108	0.29	-1.6	
19	0.29	-1.6		111	0.40	-0.23	
22	1.4	12	Outlier	115	17	197	Outlier,ND
23	0.20	-2.6	ND	117	0.77	4.2	
26	10	114	Outlier,ND	119	0.25	-2.1	
28	2.0	19	Outlier				
32	0.91	5.8					
33	0.50	0.94					
34	0.57	1.7					
35	0.28	-1.7					
39	1.4	12	Outlier				
40	0.39	-0.32					
41	0.50	0.94	ND				
42	1.0	6.9	ND				
44	5.1	56	Outlier				
46	2.0	19	Outlier,ND				
48	0.42	0.00					
50	1.0	6.9	ND				
51	0.25	-2.1					
52	1.2	9.7	Outlier,ND				
54	0.39	-0.33					
55	1.6	14	Outlier				
57	1.9	17	Outlier				
59	1.0	7.1					
64	0.75	3.9	ND				
65	0.47	0.59					
69	0.16	-3.1					
71	0.60	2.1					
72	4.9	54	Outlier				
75	0.43	0.11					
76	0.97	6.5					
77	2.3	22	Outlier				
80	10	114	Outlier,ND				
81	0.23	-2.3					
82	2.8	29	Outlier				
83	10	114	Outlier,ND				
84	0.88	5.4	ND				
87	0.57	1.7					
88	3.1	31	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.42
Median all values pg/g	0.58
Consensus mean, pg/g	0.49
Standard deviation, pg/g	0.26
Relative standard deviation, %	53
No. of values reported	56
No. of values removed	19
No. of reported non-detects	16

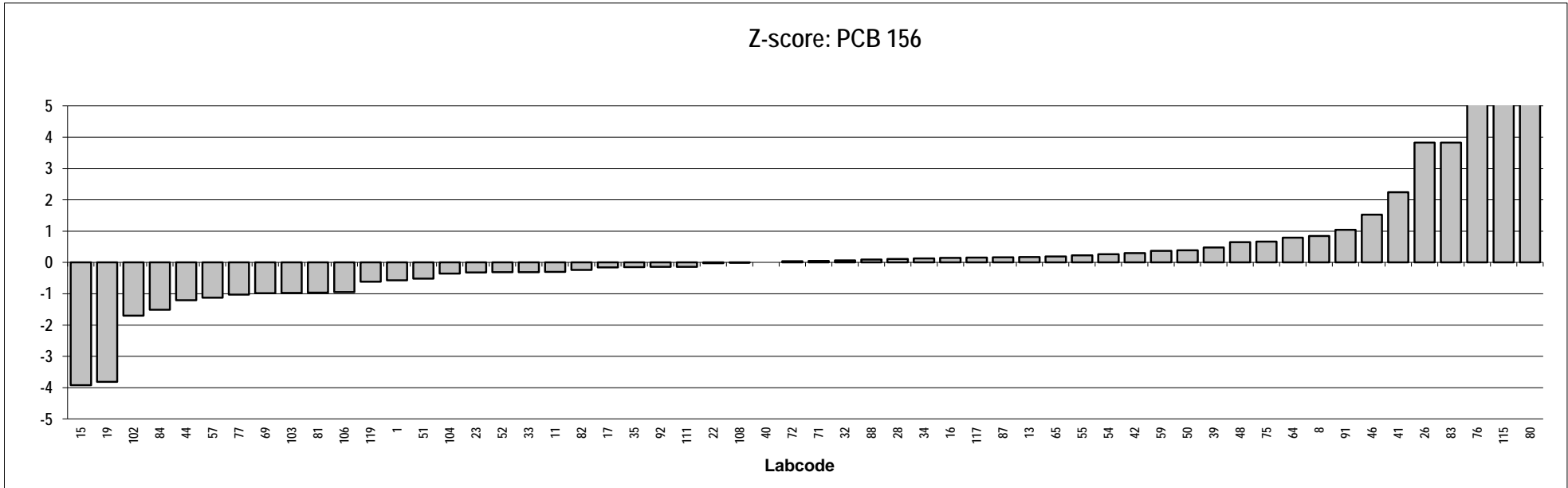
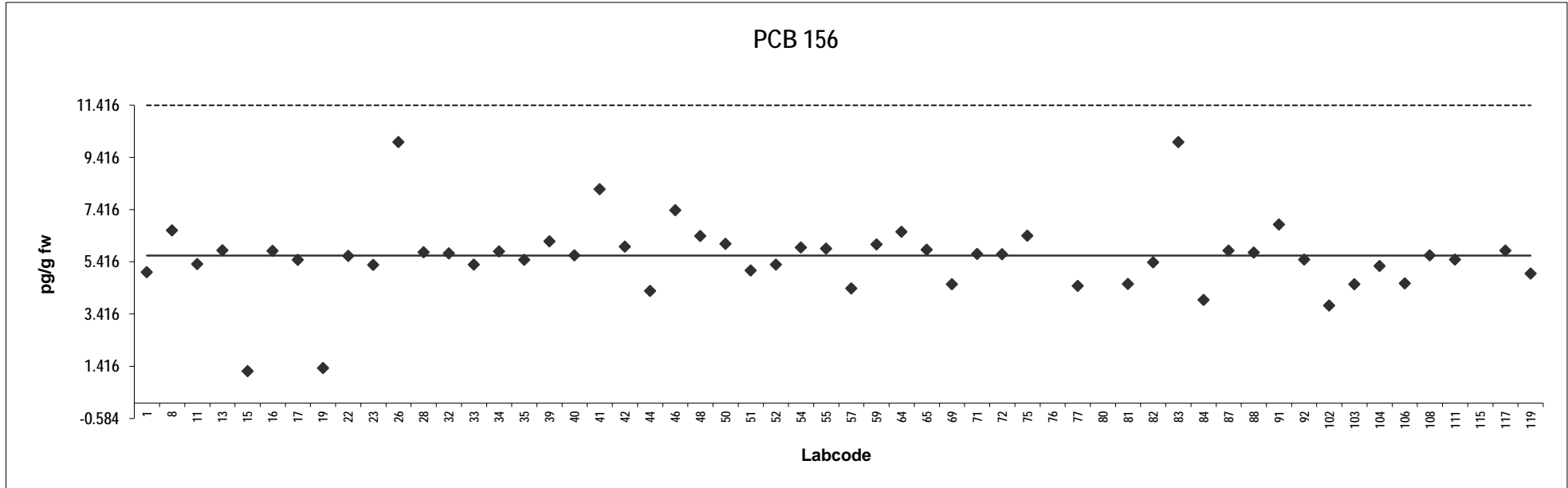


Sheep meat
Congener: PCB 156

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	5.0	-0.57		91	6.8	1.0	
8	6.6	0.84		92	5.5	-0.14	
11	5.3	-0.30		102	3.7	-1.7	
13	5.9	0.17		103	4.6	-0.97	
15	1.2	-3.9		104	5.3	-0.36	
16	5.8	0.15		106	4.6	-0.95	
17	5.5	-0.15		108	5.7	-0.00088	
19	1.3	-3.8		111	5.5	-0.14	
22	5.6	-0.023		115	17	10	Outlier
23	5.3	-0.32		117	5.8	0.16	
26	10	3.8	ND	119	5.0	-0.62	
28	5.8	0.11					
32	5.7	0.070					
33	5.3	-0.31					
34	5.8	0.13					
35	5.5	-0.15					
39	6.2	0.48					
40	5.7	0.00					
41	8.2	2.2					
42	6.0	0.30					
44	4.3	-1.2					
46	7.4	1.5					
48	6.4	0.65					
50	6.1	0.39					
51	5.1	-0.51					
52	5.3	-0.31					
54	6.0	0.26					
55	5.9	0.23					
57	4.4	-1.1					
59	6.1	0.37					
64	6.6	0.79					
65	5.9	0.19					
69	4.6	-0.98					
71	5.7	0.044					
72	5.7	0.039					
75	6.4	0.67					
76	14	7.2	Outlier				
77	4.5	-1.0					
80	23	15	Outlier				
81	4.6	-0.97					
82	5.4	-0.24					
83	10	3.8	ND				
84	4.0	-1.5	ND				
87	5.8	0.16					
88	5.8	0.096					

Consensus statistics

Consensus median, pg/g	5.7
Median all values pg/g	5.7
Consensus mean, pg/g	5.6
Standard deviation, pg/g	1.4
Relative standard deviation, %	26
No. of values reported	56
No. of values removed	3
No. of reported non-detects	3

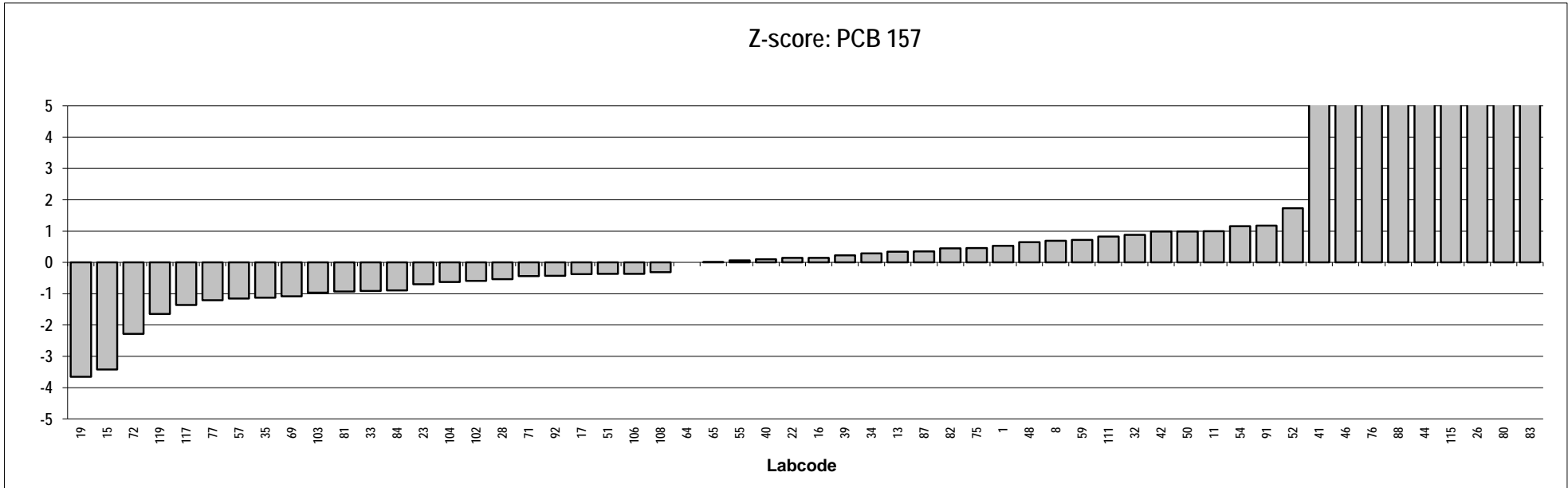
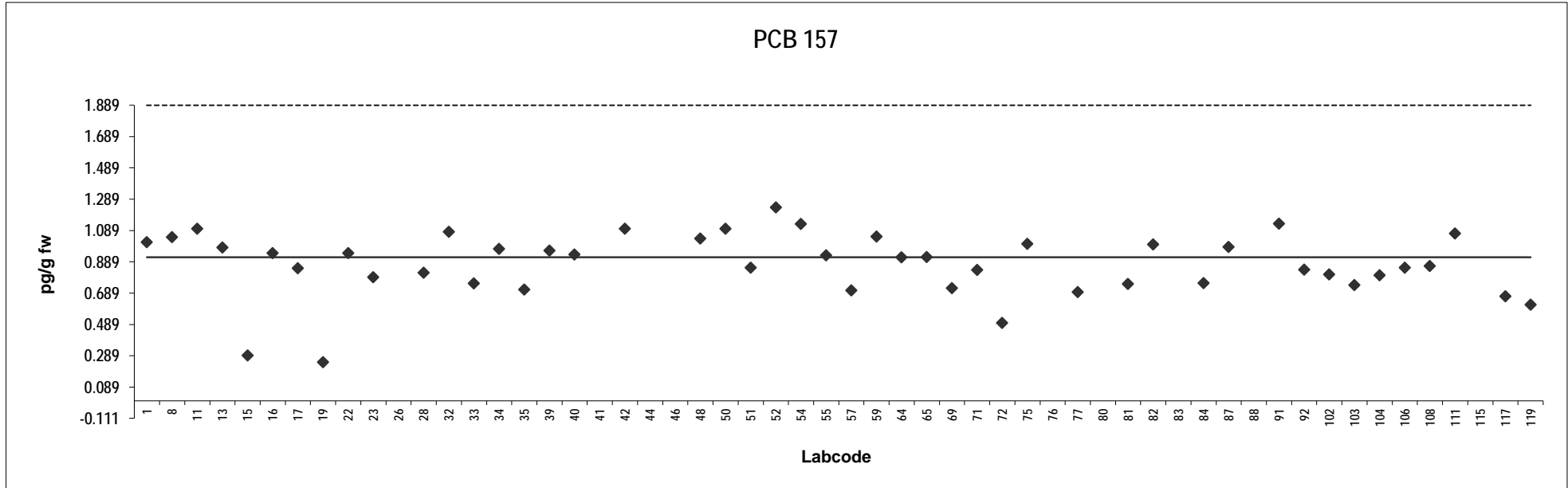


Sheep meat
Congener: PCB 157

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1.0	0.53		91	1.1	1.2	
8	1.0	0.70	ND	92	0.84	-0.43	
11	1.1	0.99		102	0.81	-0.59	
13	0.98	0.34		103	0.74	-0.97	
15	0.29	-3.4		104	0.80	-0.62	
16	0.95	0.15		106	0.85	-0.36	
17	0.85	-0.38		108	0.86	-0.31	
19	0.25	-3.7		111	1.1	0.83	
22	0.94	0.14		115	4.3	18	Outlier
23	0.79	-0.70		117	0.67	-1.4	
26	10	49	Outlier,ND	119	0.62	-1.7	
28	0.82	-0.54					
32	1.1	0.88					
33	0.75	-0.92					
34	0.97	0.29					
35	0.71	-1.1					
39	0.96	0.23					
40	0.94	0.098					
41	1.9	5.3	Outlier				
42	1.1	0.99					
44	4.1	17	Outlier				
46	2.0	5.9	Outlier,ND				
48	1.0	0.65					
50	1.1	0.99					
51	0.85	-0.37					
52	1.2	1.7	ND				
54	1.1	1.2					
55	0.93	0.063					
57	0.71	-1.2					
59	1.1	0.72					
64	0.92	0.00					
65	0.92	0.011					
69	0.72	-1.1					
71	0.84	-0.44					
72	0.50	-2.3					
75	1.0	0.46					
76	2.6	9.2	Outlier				
77	0.70	-1.2					
80	10	49	Outlier,ND				
81	0.75	-0.93					
82	1.0	0.45	ND				
83	10	49	Outlier,ND				
84	0.75	-0.90	ND				
87	0.98	0.35					
88	3.4	13	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.92
Median all values pg/g	0.94
Consensus mean, pg/g	0.87
Standard deviation, pg/g	0.20
Relative standard deviation, %	23
No. of values reported	56
No. of values removed	9
No. of reported non-detects	9

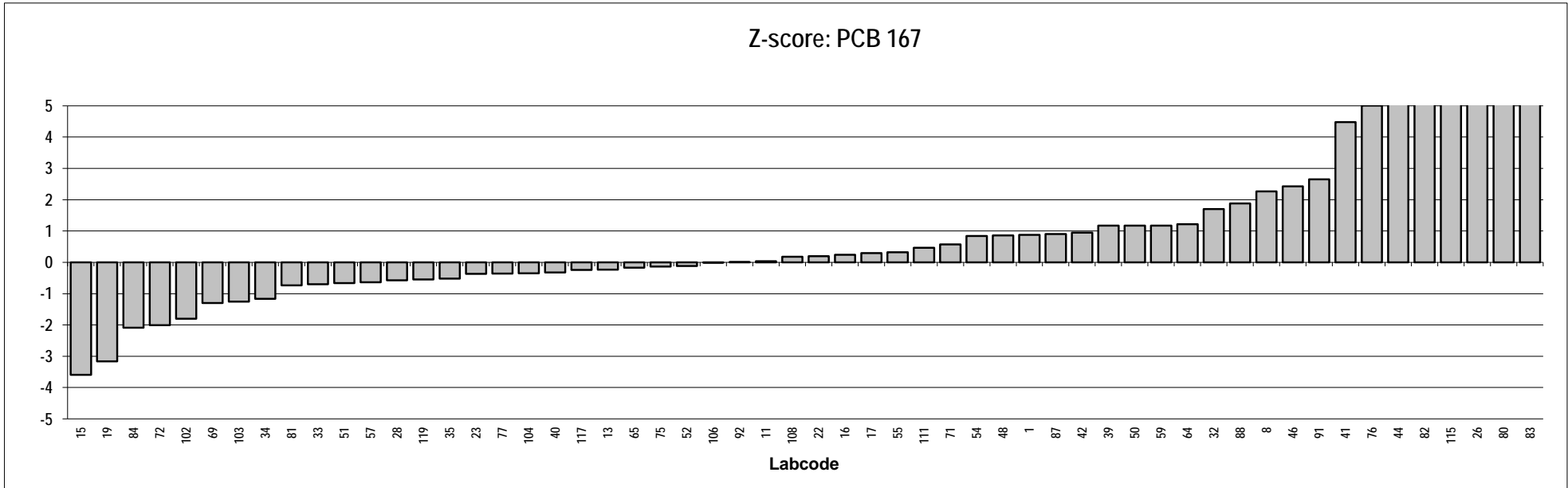
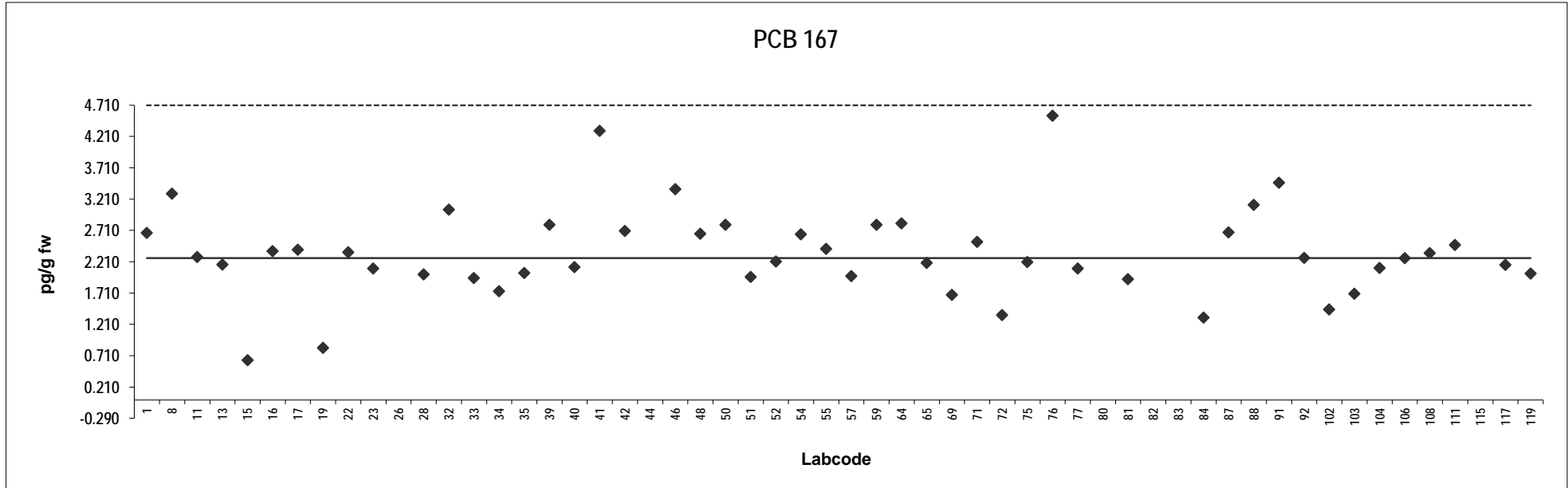


Sheep meat
Congener: PCB 167

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2.7	0.88		91	3.5	2.6	
8	3.3	2.3		92	2.3	0.0030	
11	2.3	0.032		102	1.5	-1.8	
13	2.2	-0.23		103	1.7	-1.3	
15	0.64	-3.6		104	2.1	-0.35	
16	2.4	0.25		106	2.3	-0.0030	
17	2.4	0.29		108	2.4	0.18	
19	0.83	-3.2		111	2.5	0.47	
22	2.4	0.20		115	8.5	14	Outlier
23	2.1	-0.37		117	2.2	-0.24	
26	10	17	Outlier,ND	119	2.0	-0.55	
28	2.0	-0.57					
32	3.0	1.7					
33	2.0	-0.70					
34	1.7	-1.2					
35	2.0	-0.52					
39	2.8	1.2					
40	2.1	-0.32					
41	4.3	4.5					
42	2.7	0.95					
44	5.4	6.9	Outlier				
46	3.4	2.4					
48	2.7	0.86					
50	2.8	1.2					
51	2.0	-0.67					
52	2.2	-0.12					
54	2.7	0.84					
55	2.4	0.32					
57	2.0	-0.64					
59	2.8	1.2					
64	2.8	1.2					
65	2.2	-0.17					
69	1.7	-1.3					
71	2.5	0.57					
72	1.4	-2.0					
75	2.2	-0.14					
76	4.5	5.0					
77	2.1	-0.36					
80	10	17	Outlier,ND				
81	1.9	-0.74					
82	6.9	10	Outlier				
83	10	17	Outlier,ND				
84	1.3	-2.1					
87	2.7	0.90					
88	3.1	1.9	ND				

Consensus statistics

Consensus median, pg/g	2.3
Median all values pg/g	2.4
Consensus mean, pg/g	2.3
Standard deviation, pg/g	0.71
Relative standard deviation, %	30
No. of values reported	56
No. of values removed	6
No. of reported non-detects	4

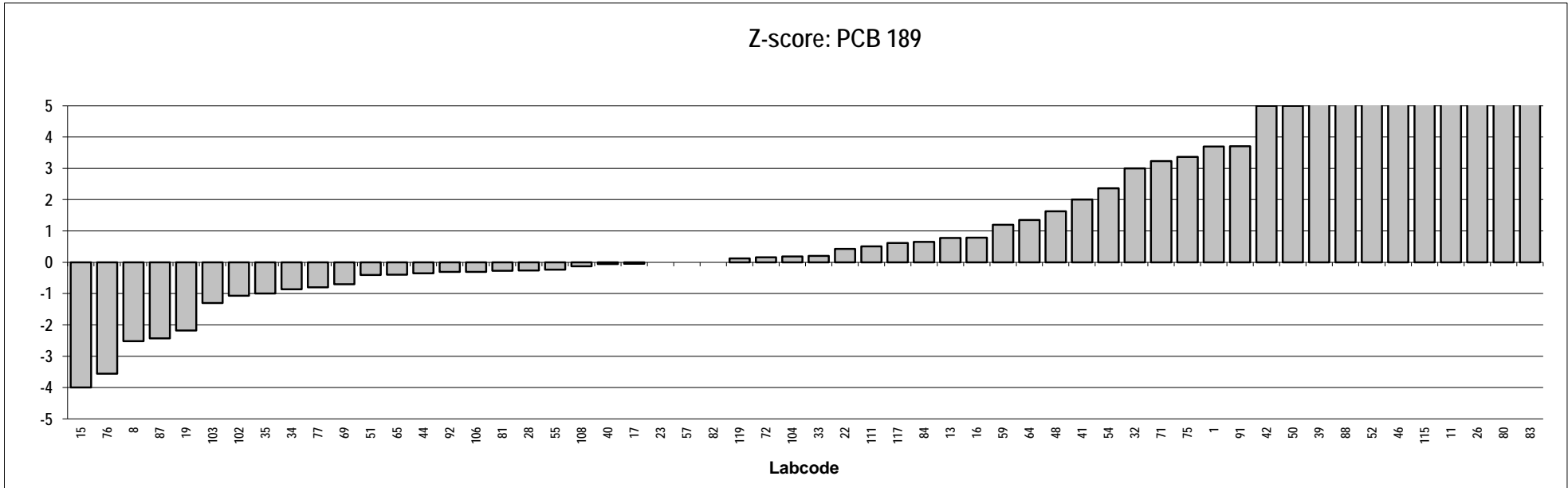
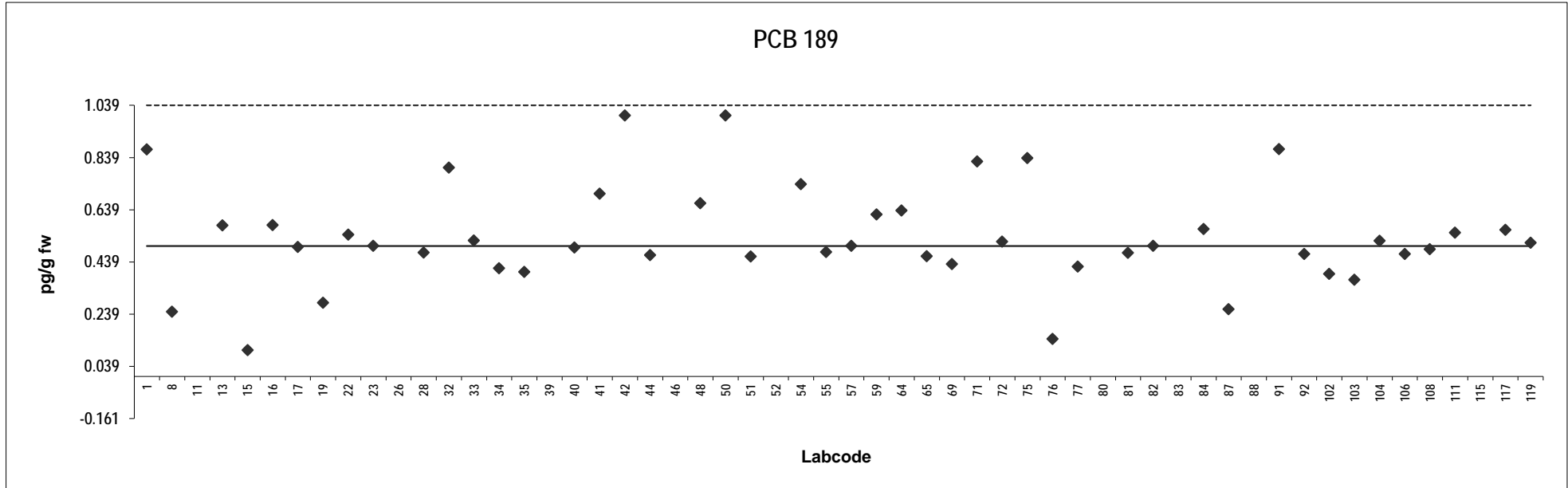


Sheep meat
Congener: PCB 189

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.87	3.7		91	0.87	3.7	
8	0.25	-2.5	ND	92	0.47	-0.31	
11	2.1	16	Outlier,ND	102	0.39	-1.1	
13	0.58	0.78		103	0.37	-1.3	
15	0.10	-4.0		104	0.52	0.19	
16	0.58	0.79		106	0.47	-0.31	
17	0.50	-0.043		108	0.49	-0.13	
19	0.28	-2.2		111	0.55	0.51	
22	0.54	0.43		115	2.0	15	Outlier,ND
23	0.50	0.00		117	0.56	0.62	
26	10	95	Outlier,ND	119	0.51	0.12	
28	0.47	-0.26					
32	0.80	3.0					
33	0.52	0.20					
34	0.41	-0.86					
35	0.40	-1.0					
39	1.1	6.0	Outlier				
40	0.49	-0.060					
41	0.70	2.0	ND				
42	1.0	5.0	ND				
44	0.46	-0.36	ND				
46	2.0	15	Outlier,ND				
48	0.66	1.6					
50	1.0	5.0	ND				
51	0.46	-0.41					
52	1.2	7.4	Outlier,ND				
54	0.74	2.4					
55	0.48	-0.23					
57	0.50	0.00					
59	0.62	1.2					
64	0.64	1.4					
65	0.46	-0.40					
69	0.43	-0.70					
71	0.82	3.2					
72	0.52	0.16					
75	0.84	3.4					
76	0.14	-3.6	ND				
77	0.42	-0.80					
80	10	95	Outlier,ND				
81	0.47	-0.27					
82	0.50	0.00	ND				
83	10	95	Outlier,ND				
84	0.57	0.65	ND				
87	0.26	-2.4					
88	1.2	6.6	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.50
Median all values pg/g	0.52
Consensus mean, pg/g	0.54
Standard deviation, pg/g	0.19
Relative standard deviation, %	36
No. of values reported	56
No. of values removed	9
No. of reported non-detects	16

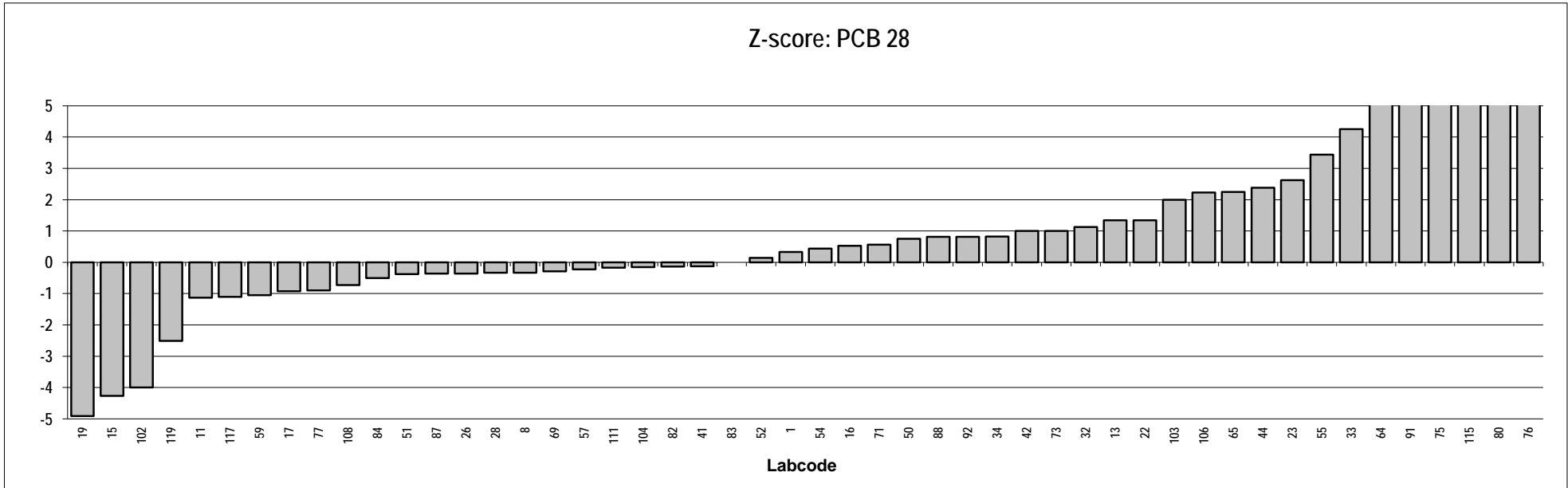
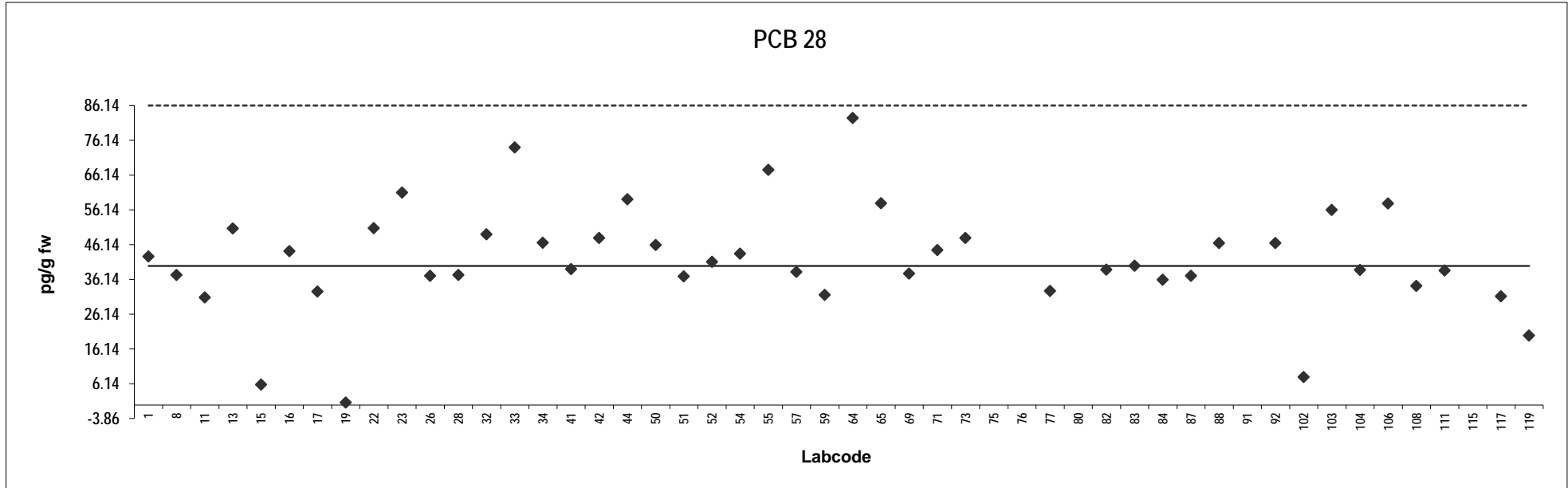


Sheep meat
Congener: PCB 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	43	0.33		108	34	-0.73	
8	37	-0.33		111	39	-0.18	
11	31	-1.1		115	125	11	Outlier
13	51	1.3		117	31	-1.1	
15	5.9	-4.3		119	20	-2.5	
16	44	0.53					
17	33	-0.93					
19	0.67	-4.9					
22	51	1.3					
23	61	2.6					
26	37	-0.36					
28	37	-0.34					
32	49	1.1					
33	74	4.3					
34	47	0.83					
41	39	-0.13					
42	48	1.0					
44	59	2.4					
50	46	0.75					
51	37	-0.38					
52	41	0.14					
54	44	0.44					
55	68	3.4					
57	38	-0.23					
59	32	-1.1					
64	82	5.3					
65	58	2.2					
69	38	-0.29					
71	45	0.56					
73	48	1.0					
75	119	9.8	Outlier				
76	317	35	Outlier				
77	33	-0.90					
80	221	23	Outlier				
82	39	-0.14					
83	40	0.00					
84	36	-0.50					
87	37	-0.36					
88	47	0.81					
91	91	6.4	Outlier				
92	47	0.81	ND				
102	8.0	-4.0	ND				
103	56	2.0					
104	39	-0.16					
106	58	2.2					

Consensus statistics

Consensus median, pg/g	40
Median all values pg/g	43
Consensus mean, pg/g	42
Standard deviation, pg/g	15
Relative standard deviation, %	37
No. of values reported	50
No. of values removed	5
No. of reported non-detects	2

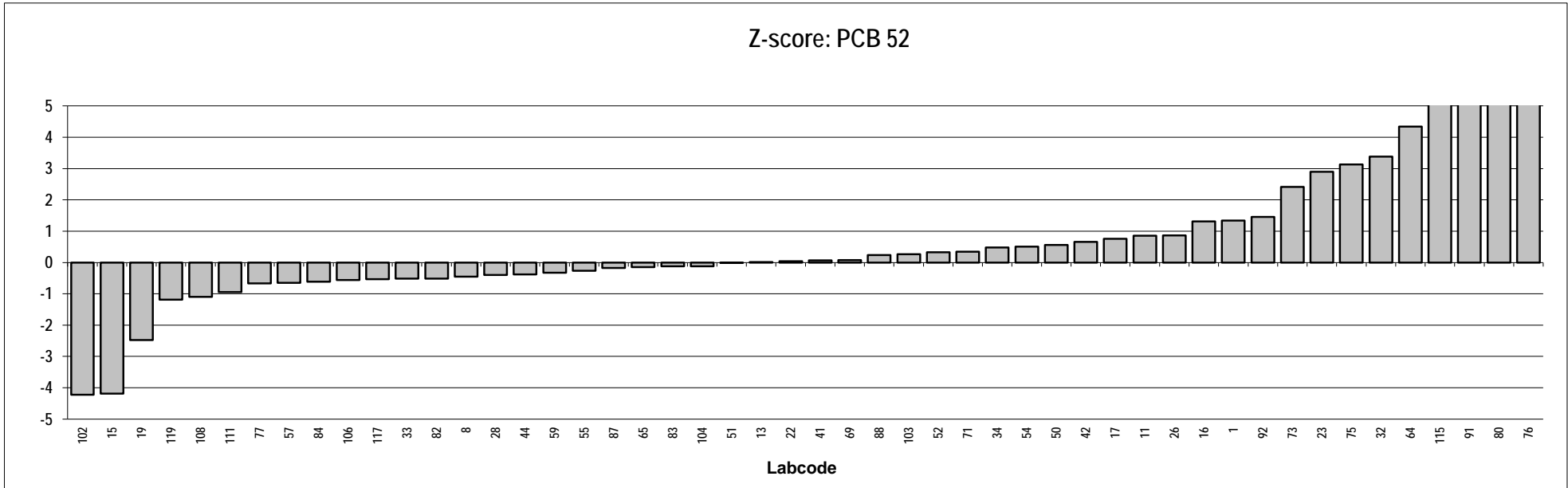
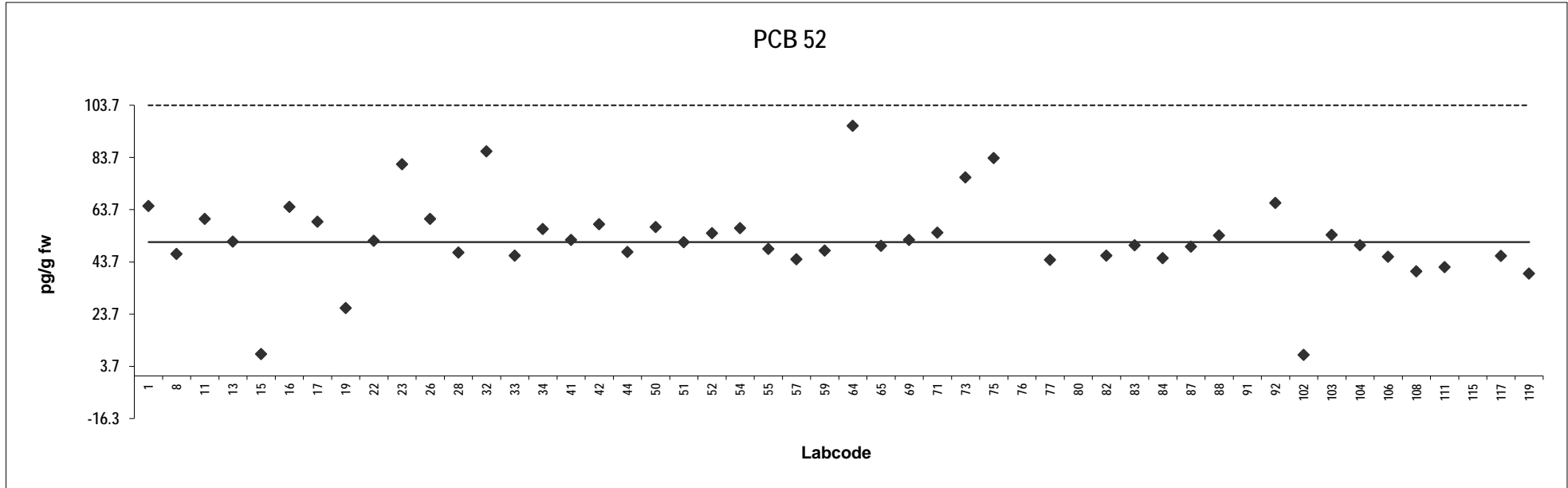


Sheep meat
Congener: PCB 52

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	65	1.3		108	40	-1.1	
8	47	-0.45		111	42	-0.94	
11	60	0.86		115	150	9.6	Outlier
13	51	0.014		117	46	-0.53	
15	8.4	-4.2		119	39	-1.2	
16	65	1.3					
17	59	0.76					
19	26	-2.5					
22	52	0.038					
23	81	2.9					
26	60	0.86					
28	47	-0.40					
32	86	3.4					
33	46	-0.51					
34	56	0.48					
41	52	0.071					
42	58	0.66					
44	47	-0.38					
50	57	0.56					
51	51	-0.014					
52	55	0.33					
54	57	0.51					
55	49	-0.27					
57	45	-0.65					
59	48	-0.33					
64	96	4.3					
65	50	-0.15					
69	52	0.075					
71	55	0.34					
73	76	2.4					
75	83	3.1					
76	325	27	Outlier				
77	44	-0.67					
80	287	23	Outlier				
82	46	-0.51					
83	50	-0.12					
84	45	-0.61					
87	49	-0.17					
88	54	0.24					
91	197	14	Outlier				
92	66	1.5	ND				
102	8.0	-4.2	ND				
103	54	0.27					
104	50	-0.12					
106	46	-0.56					

Consensus statistics

Consensus median, pg/g	51
Median all values pg/g	52
Consensus mean, pg/g	53
Standard deviation, pg/g	16
Relative standard deviation, %	31
No. of values reported	50
No. of values removed	4
No. of reported non-detects	2

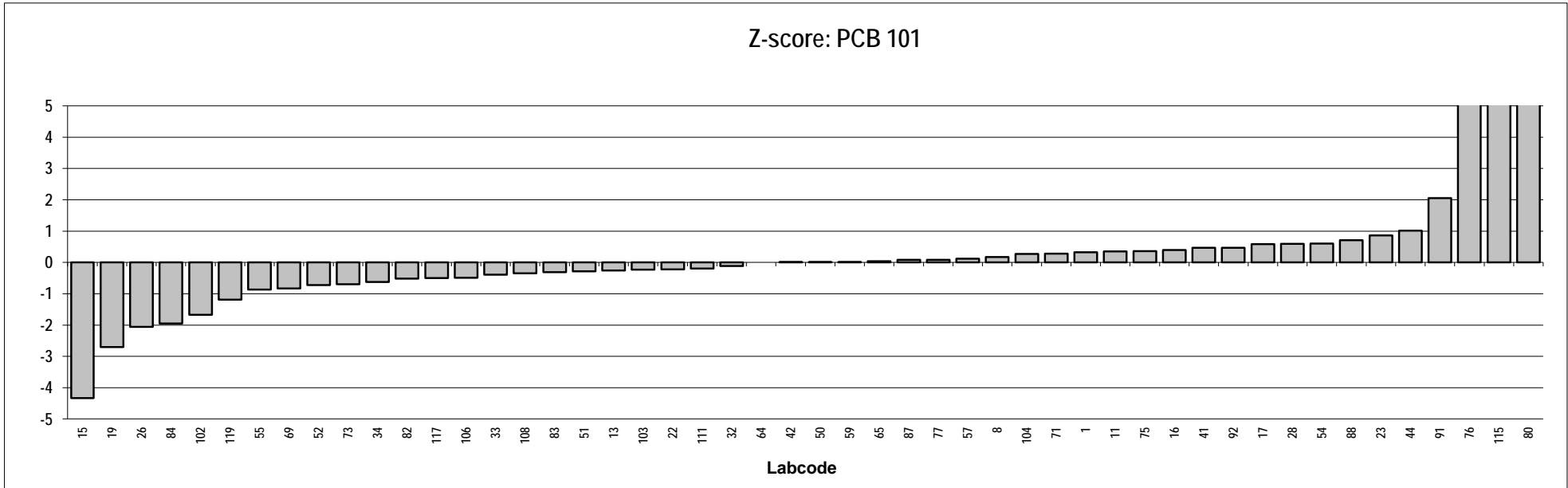
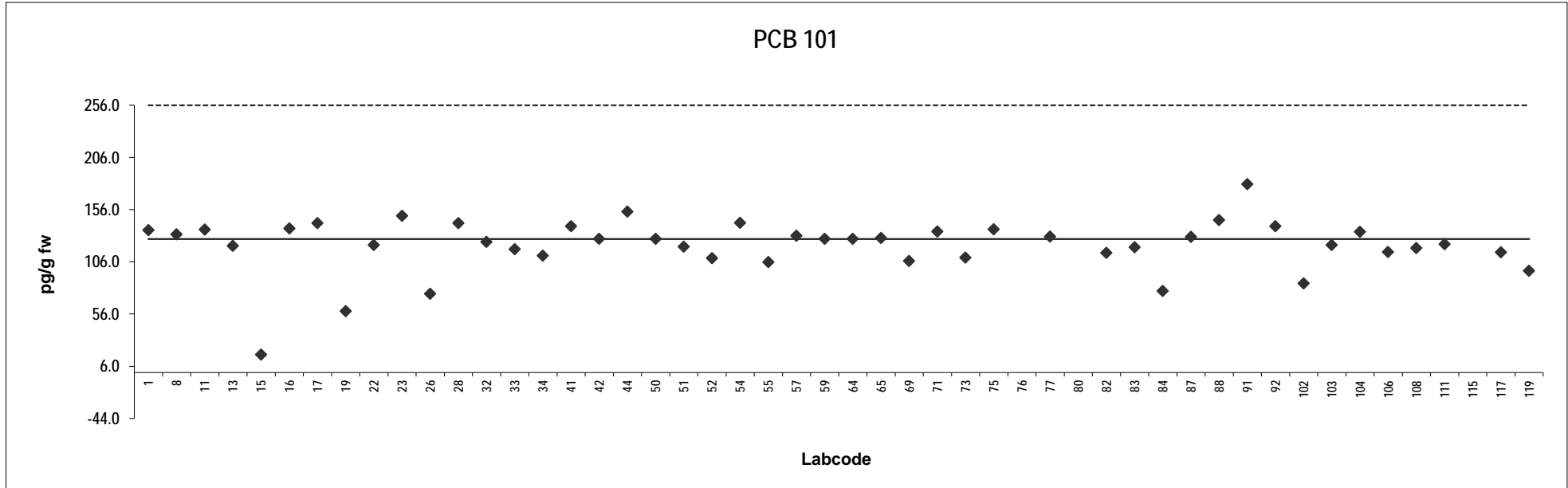


Sheep meat
Congener: PCB 101

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	136	0.33		108	119	-0.35	
8	132	0.17		111	123	-0.19	
11	137	0.35		115	380	9.9	Outlier
13	121	-0.26		117	115	-0.50	
15	17	-4.3		119	98	-1.2	
16	138	0.39					
17	143	0.59					
19	59	-2.7					
22	122	-0.22					
23	150	0.86					
26	75	-2.1					
28	143	0.59					
32	125	-0.11					
33	118	-0.39					
34	112	-0.62					
41	140	0.47					
42	128	0.0039					
44	154	1.0					
50	128	0.0039					
51	121	-0.29					
52	109	-0.73					
54	143	0.60					
55	106	-0.86					
57	131	0.12					
59	128	0.0039					
64	128	0.00					
65	129	0.036					
69	107	-0.83					
71	135	0.28					
73	110	-0.70					
75	137	0.36					
76	380	9.8	Outlier				
77	130	0.087					
80	722	23	Outlier				
82	115	-0.52					
83	120	-0.31					
84	78	-2.0					
87	130	0.080					
88	146	0.71					
91	180	2.1					
92	140	0.47					
102	85	-1.7					
103	122	-0.23					
104	135	0.27					
106	115	-0.49					

Consensus statistics

Consensus median, pg/g	128
Median all values pg/g	128
Consensus mean, pg/g	122
Standard deviation, pg/g	26
Relative standard deviation, %	22
No. of values reported	50
No. of values removed	3
No. of reported non-detects	0

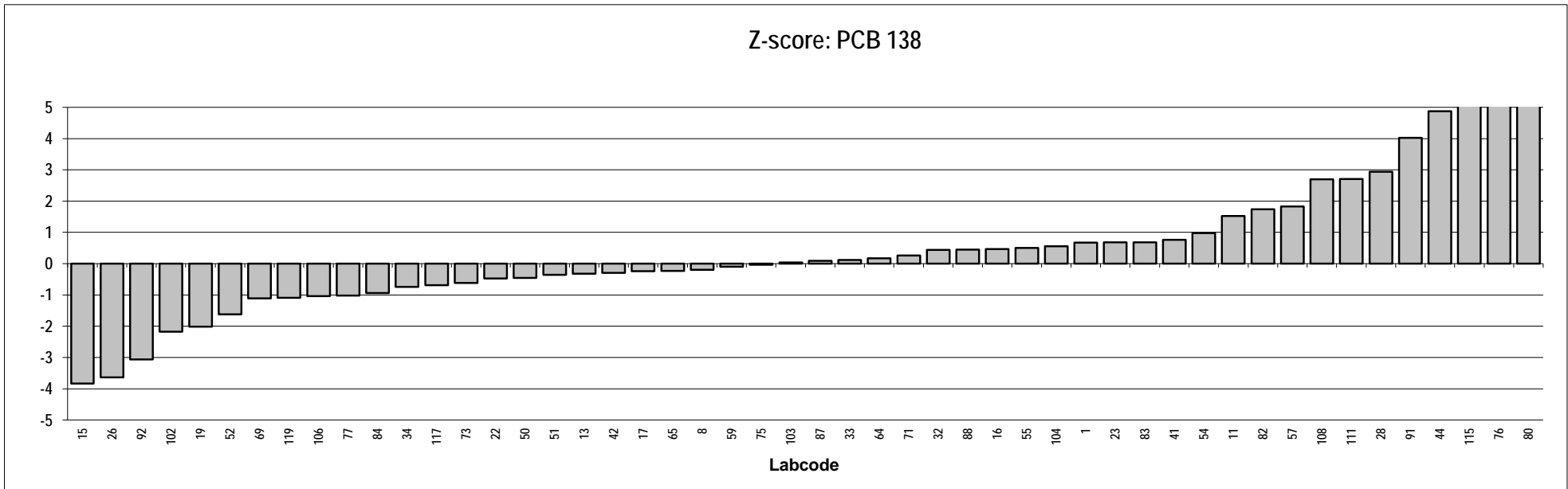
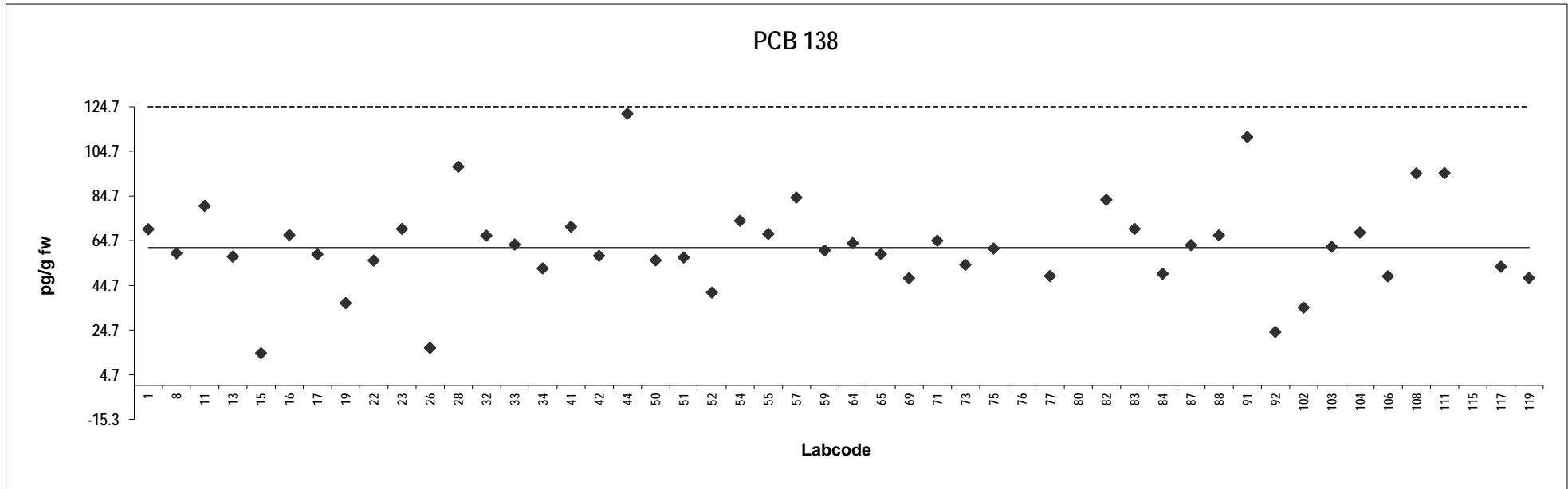


Sheep meat
Congener: PCB 138

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	70	0.67		108	95	2.7	
8	59	-0.20		111	95	2.7	
11	80	1.5		115	190	10	Outlier
13	58	-0.32		117	53	-0.69	
15	14	-3.8		119	48	-1.1	
16	67	0.46					
17	59	-0.24					
19	37	-2.0					
22	56	-0.47					
23	70	0.68					
26	17	-3.6					
28	98	2.9					
32	67	0.44					
33	63	0.11					
34	52	-0.75					
41	71	0.76					
42	58	-0.29					
44	122	4.9					
50	56	-0.45					
51	57	-0.36					
52	42	-1.6					
54	74	0.97					
55	68	0.51					
57	84	1.8					
59	60	-0.097					
64	64	0.17					
65	59	-0.23					
69	48	-1.1					
71	65	0.26					
73	54	-0.62					
75	61	-0.033					
76	232	14	Outlier				
77	49	-1.0					
80	369	25	Outlier				
82	83	1.7					
83	70	0.68					
84	50	-0.94					
87	63	0.093					
88	67	0.45					
91	111	4.0					
92	24	-3.1	ND				
102	35	-2.2					
103	62	0.033					
104	68	0.56					
106	49	-1.0					

Consensus statistics

Consensus median, pg/g	62
Median all values pg/g	62
Consensus mean, pg/g	62
Standard deviation, pg/g	21
Relative standard deviation, %	34
No. of values reported	50
No. of values removed	3
No. of reported non-detects	1

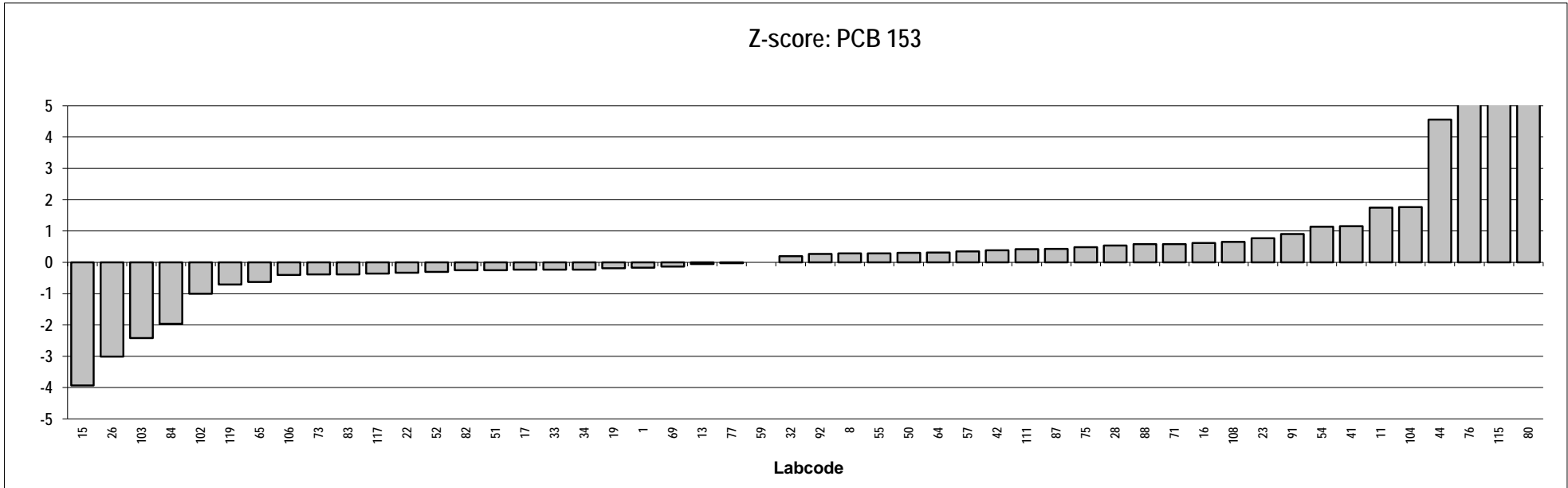
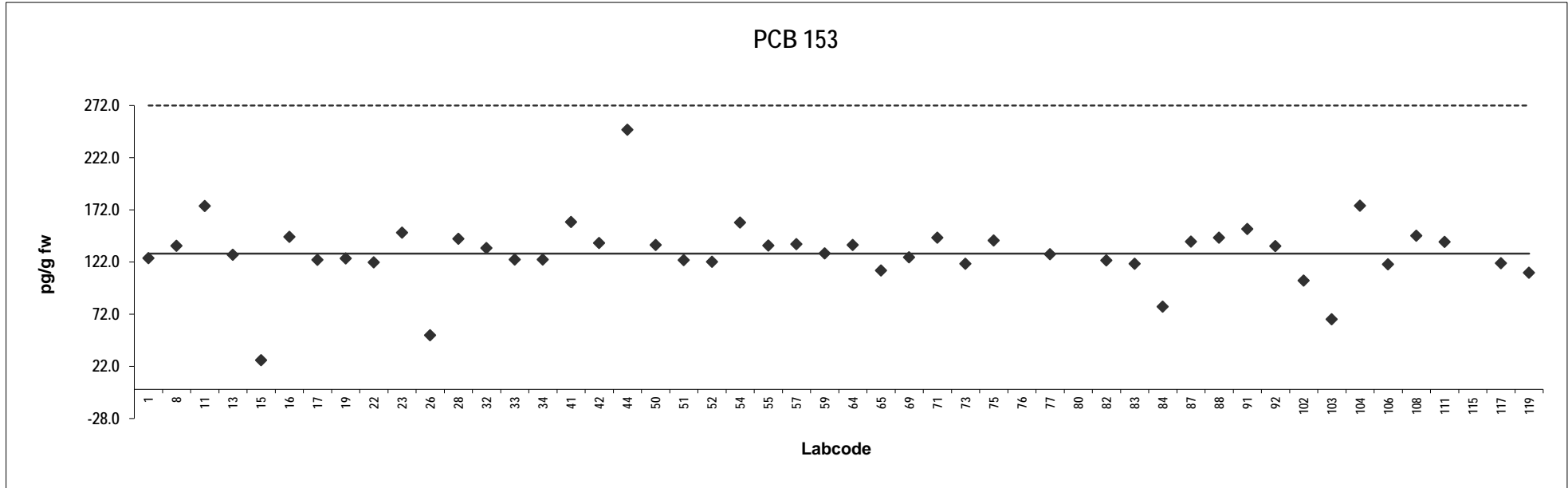


Sheep meat
Congener: PCB 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	125	-0.18		108	147	0.65	
8	137	0.28		111	141	0.42	
11	175	1.7		115	410	11	Outlier
13	129	-0.055		117	121	-0.36	
15	28	-3.9		119	112	-0.71	
16	146	0.62					
17	124	-0.24					
19	125	-0.19					
22	121	-0.33					
23	150	0.77					
26	52	-3.0					
28	144	0.54					
32	135	0.19					
33	124	-0.23					
34	124	-0.23					
41	160	1.2					
42	140	0.38					
44	249	4.6					
50	138	0.31					
51	123	-0.25					
52	122	-0.30					
54	160	1.1					
55	137	0.29					
57	139	0.35					
59	130	0.00					
64	138	0.31					
65	114	-0.63					
69	126	-0.14					
71	145	0.58					
73	120	-0.38					
75	142	0.48					
76	332	7.8	Outlier				
77	129	-0.027					
80	769	25	Outlier				
82	123	-0.26					
83	120	-0.38					
84	79	-2.0					
87	141	0.43					
88	145	0.58					
91	153	0.90					
92	137	0.27					
102	104	-1.0					
103	67	-2.4					
104	176	1.8					
106	120	-0.40					

Consensus statistics

Consensus median, pg/g	130
Median all values pg/g	136
Consensus mean, pg/g	131
Standard deviation, pg/g	32
Relative standard deviation, %	25
No. of values reported	50
No. of values removed	3
No. of reported non-detects	0

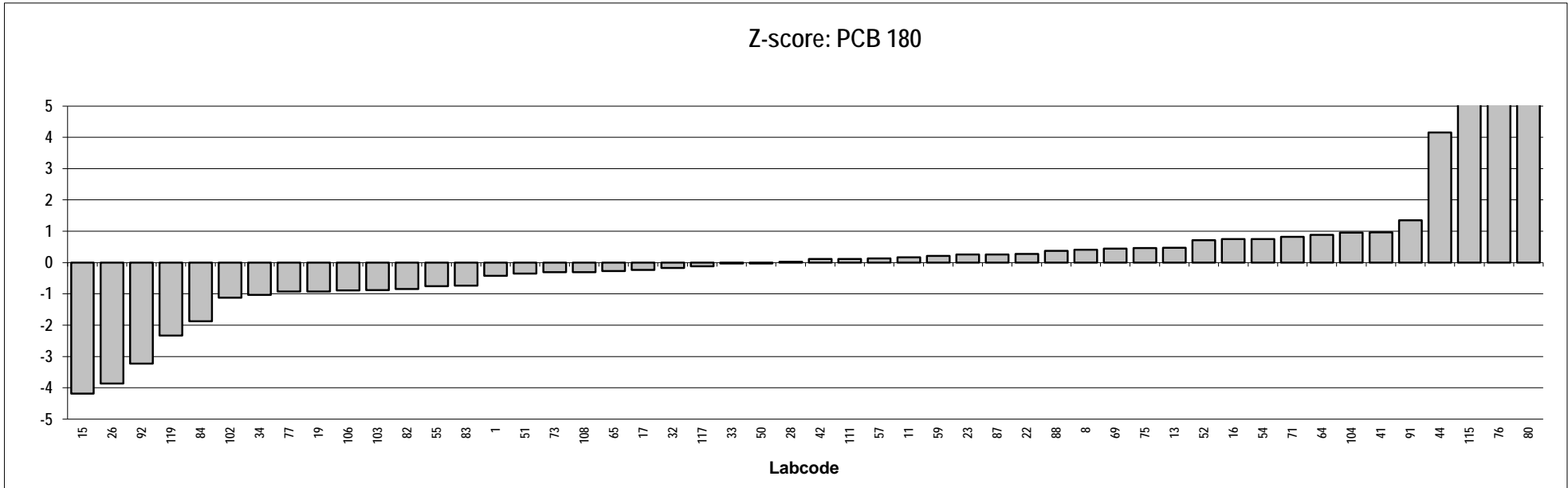
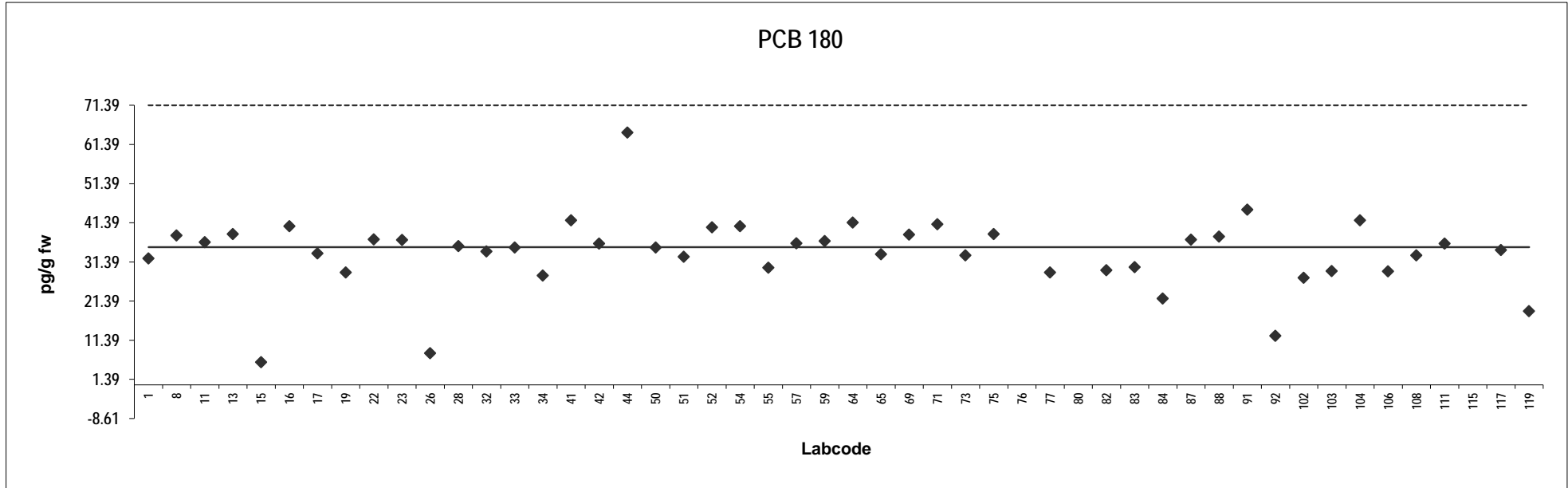


Sheep meat
Congener: PCB 180

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	32	-0.42		108	33	-0.31	
8	38	0.41		111	36	0.11	
11	36	0.17		115	120	12	Outlier
13	39	0.47		117	34	-0.12	
15	5.7	-4.2		119	19	-2.3	
16	41	0.75					
17	34	-0.24					
19	29	-0.93					
22	37	0.27					
23	37	0.26					
26	8.0	-3.9					
28	35	0.028					
32	34	-0.17					
33	35	-0.028					
34	28	-1.0					
41	42	0.97					
42	36	0.11					
44	64	4.2					
50	35	-0.028					
51	33	-0.35					
52	40	0.71					
54	41	0.75					
55	30	-0.75					
57	36	0.13					
59	37	0.21					
64	41	0.89					
65	33	-0.27					
69	38	0.44					
71	41	0.82					
73	33	-0.31					
75	38	0.46					
76	143	15	Outlier,ND				
77	29	-0.93					
80	187	22	Outlier				
82	29	-0.85					
83	30	-0.74					
84	22	-1.9					
87	37	0.26					
88	38	0.37					
91	45	1.35					
92	13	-3.2	ND				
102	27	-1.1					
103	29	-0.88					
104	42	0.96					
106	29	-0.89					

Consensus statistics

Consensus median, pg/g	35
Median all values pg/g	36
Consensus mean, pg/g	34
Standard deviation, pg/g	9.4
Relative standard deviation, %	28
No. of values reported	50
No. of values removed	3
No. of reported non-detects	2



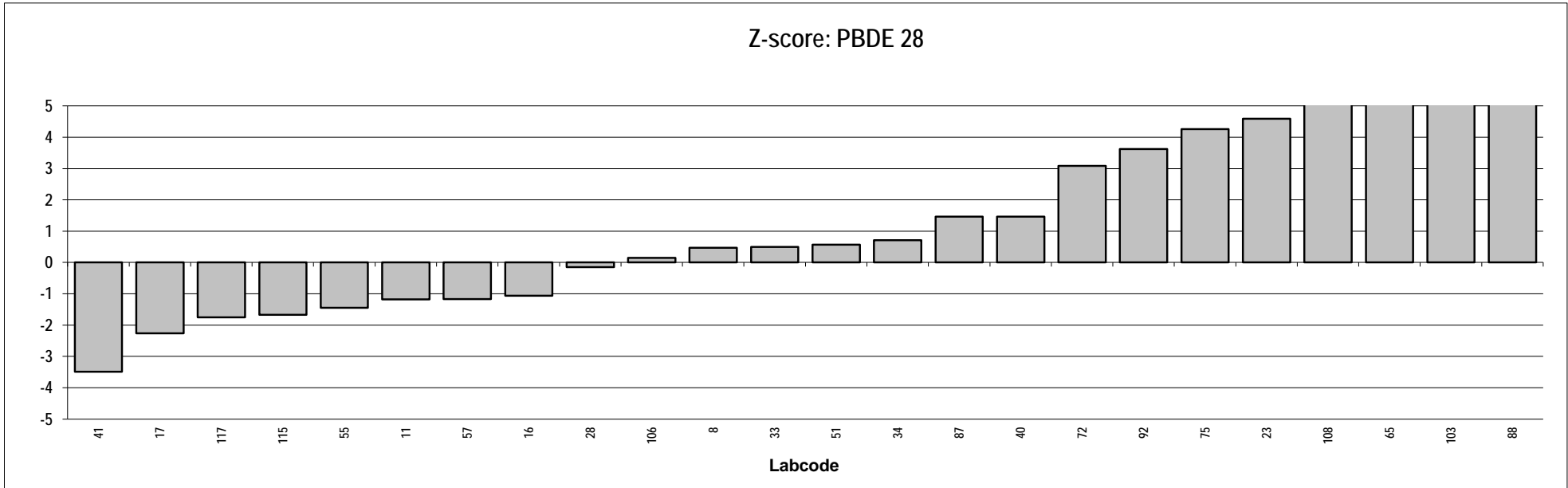
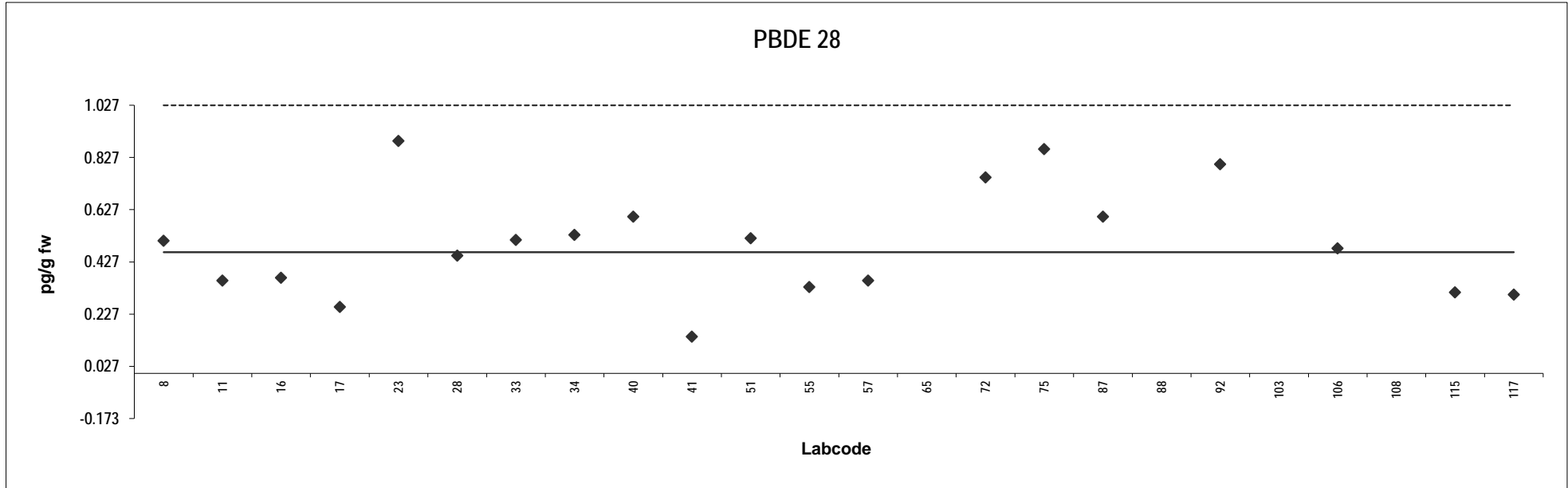
Sheep meat

Congener: PBDE 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	0.51	0.47					
11	0.35	-1.2					
16	0.37	-1.1					
17	0.25	-2.3					
23	0.89	4.6					
28	0.45	-0.15					
33	0.51	0.50					
34	0.53	0.71					
40	0.60	1.5	ND				
41	0.14	-3.5					
51	0.52	0.57					
55	0.33	-1.4					
57	0.36	-1.2					
65	1.7	13	Outlier				
72	0.75	3.1					
75	0.86	4.3					
87	0.60	1.5					
88	2.0	17	Outlier,ND				
92	0.80	3.6	ND				
103	1.9	15	Outlier				
106	0.48	0.15					
108	1.3	8.5	Outlier				
115	0.31	-1.7					
117	0.30	-1.8					

Consensus statistics

Consensus median, pg/g	0.46
Median all values pg/g	0.51
Consensus mean, pg/g	0.49
Standard deviation, pg/g	0.21
Relative standard deviation, %	42
No. of values reported	24
No. of values removed	4
No. of reported non-detects	3

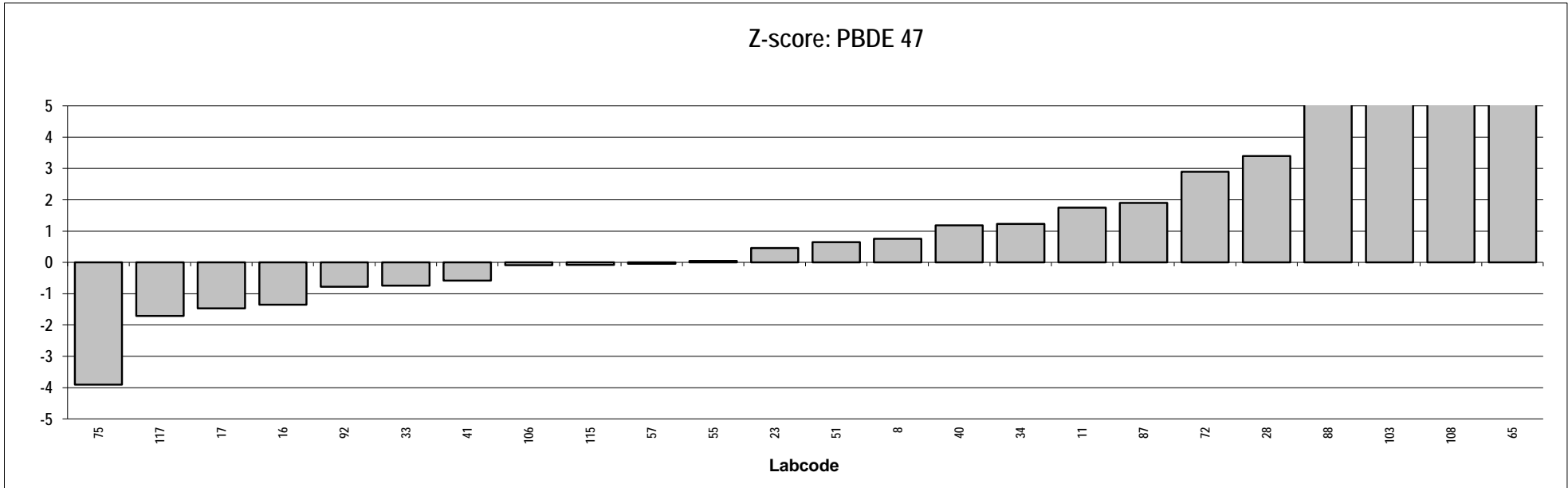
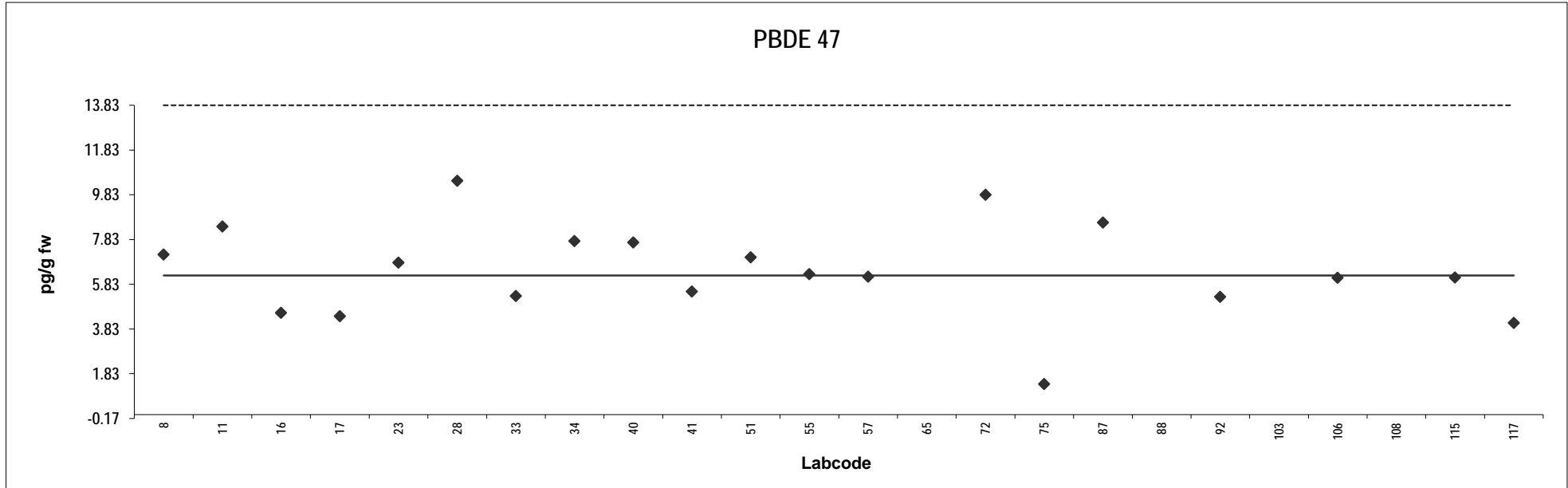


Sheep meat
Congener: PBDE 47

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	7.2	0.75					
11	8.4	1.8					
16	4.6	-1.3					
17	4.4	-1.5					
23	6.8	0.46					
28	10	3.4					
33	5.3	-0.74					
34	7.8	1.2					
40	7.7	1.2					
41	5.5	-0.58					
51	7.0	0.65					
55	6.3	0.046					
57	6.2	-0.046					
65	36	24	Outlier				
72	9.8	2.9					
75	1.4	-3.9					
87	8.6	1.9					
88	15	7.1	Outlier				
92	5.3	-0.78					
103	20	11	Outlier				
106	6.1	-0.084					
108	29	18	Outlier				
115	6.1	-0.080					
117	4.1	-1.7					

Consensus statistics

Consensus median, pg/g	6.2
Median all values pg/g	6.9
Consensus mean, pg/g	6.4
Standard deviation, pg/g	2.1
Relative standard deviation, %	32
No. of values reported	24
No. of values removed	4
No. of reported non-detects	0

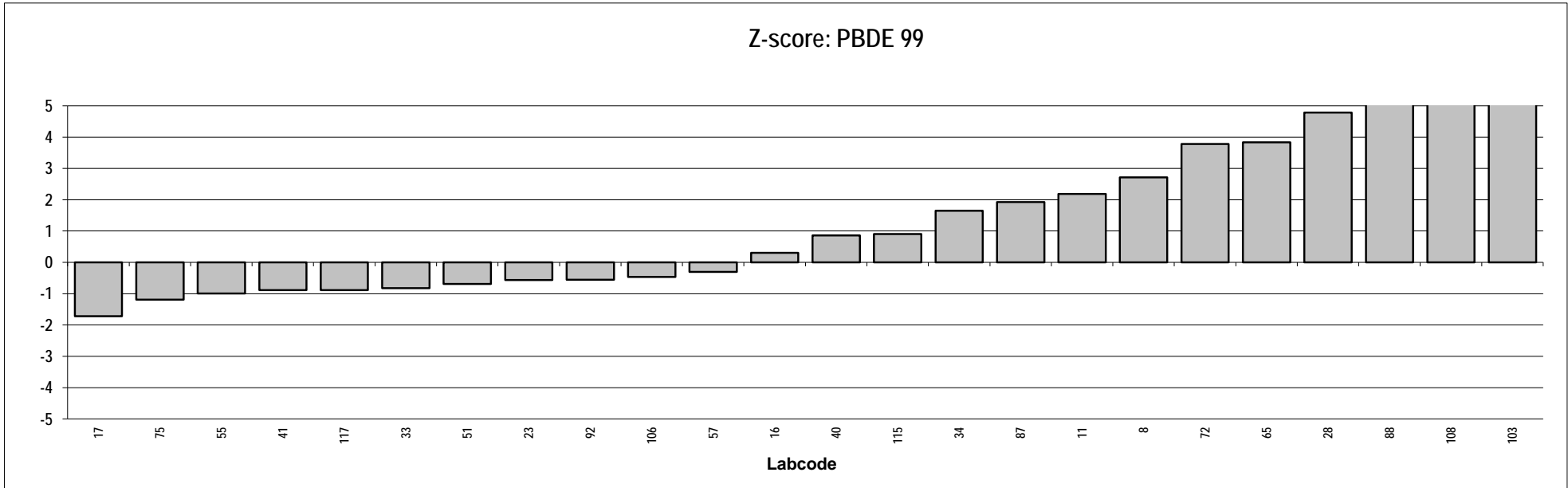
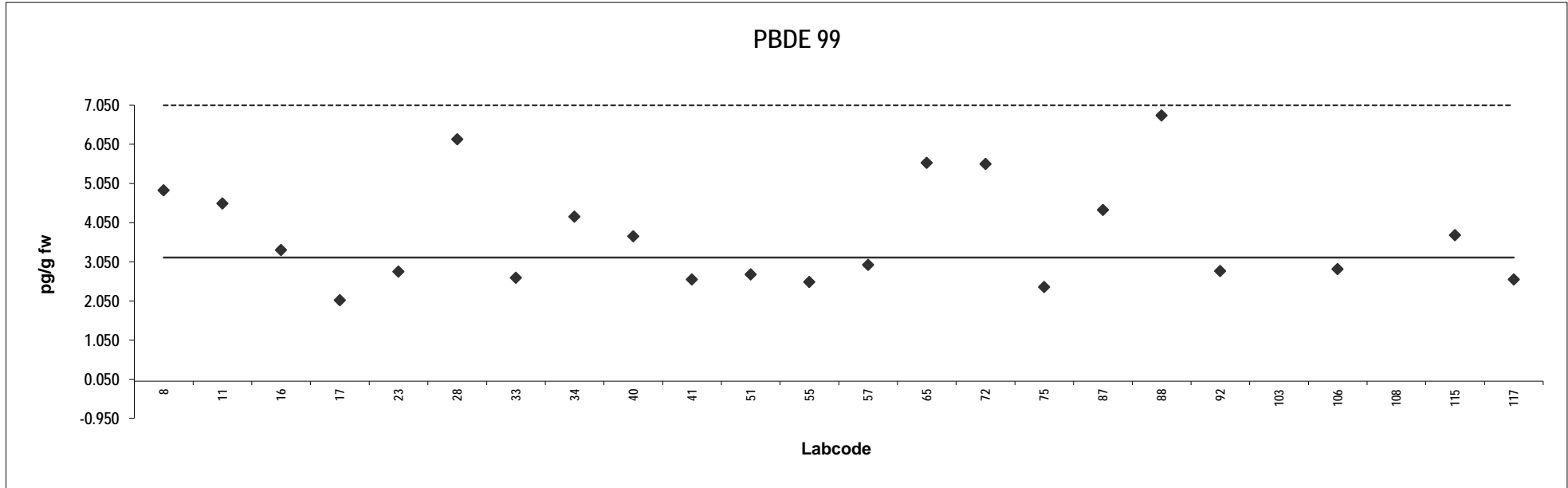


Sheep meat
Congener: PBDE 99

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	4.9	2.7					
11	4.5	2.2					
16	3.4	0.30					
17	2.1	-1.7					
23	2.8	-0.57					
28	6.2	4.8					
33	2.6	-0.82					
34	4.2	1.6					
40	3.7	0.86					
41	2.6	-0.88					
51	2.7	-0.69					
55	2.5	-0.99					
57	3.0	-0.30					
65	5.6	3.8					
72	5.6	3.8					
75	2.4	-1.2					
87	4.4	1.9					
88	6.8	5.7					
92	2.8	-0.55					
103	17	22	Outlier				
106	2.9	-0.47					
108	14	17	Outlier				
115	3.7	0.90					
117	2.6	-0.88					

Consensus statistics

Consensus median, pg/g	3.2
Median all values pg/g	3.5
Consensus mean, pg/g	3.7
Standard deviation, pg/g	1.4
Relative standard deviation, %	36
No. of values reported	24
No. of values removed	2
No. of reported non-detects	0

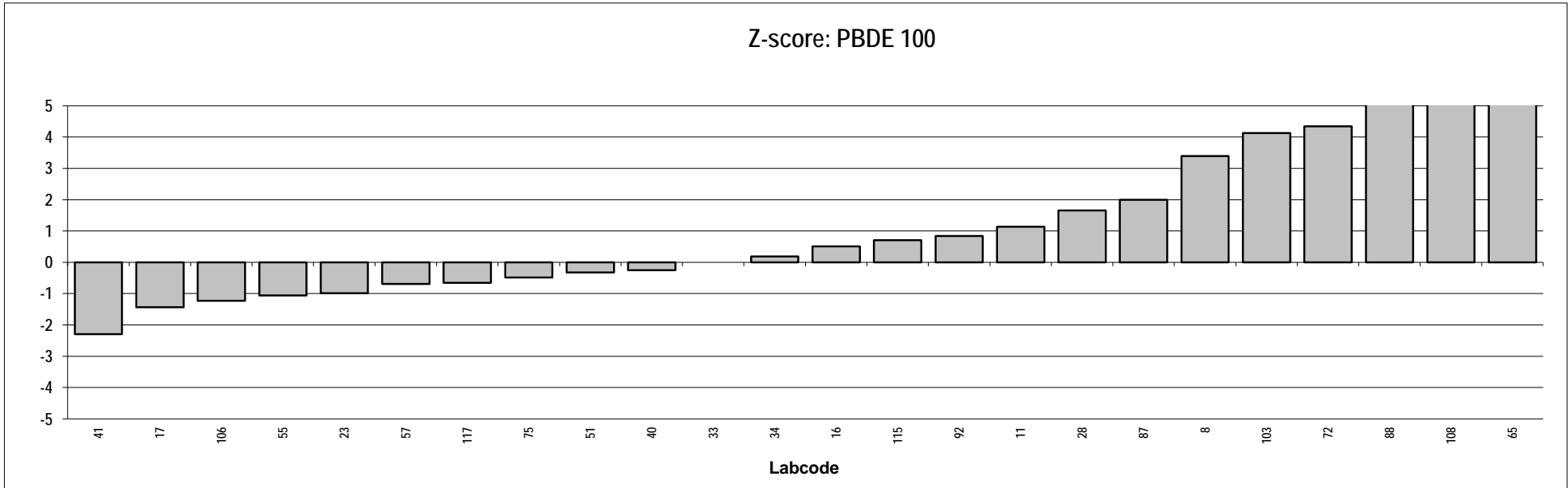
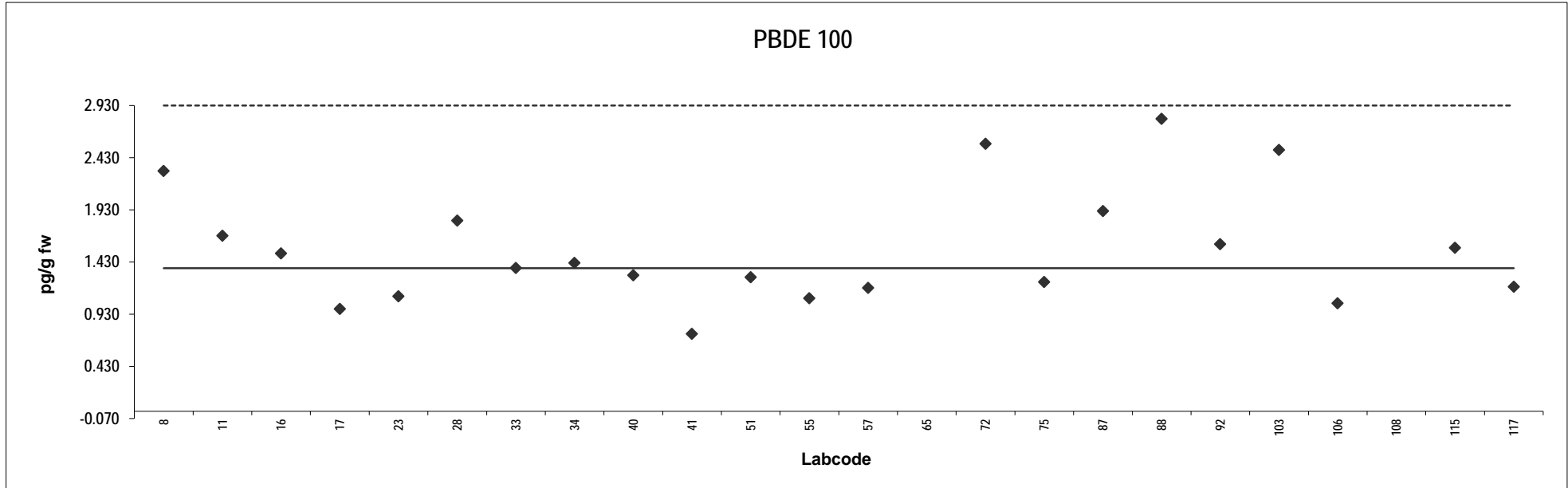


Sheep meat
Congener: PBDE 100

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	2.3	3.4					
11	1.7	1.1					
16	1.5	0.51					
17	0.98	-1.4					
23	1.1	-0.99					
28	1.8	1.7					
33	1.4	0.00					
34	1.4	0.18					
40	1.3	-0.26					
41	0.74	-2.3					
51	1.3	-0.32					
55	1.1	-1.1					
57	1.2	-0.69					
65	8.1	24	Outlier				
72	2.6	4.3					
75	1.2	-0.48					
87	1.9	2.0					
88	2.8	5.2					
92	1.6	0.84	ND				
103	2.5	4.1					
106	1.0	-1.2					
108	4.4	11	Outlier				
115	1.6	0.70					
117	1.2	-0.66					

Consensus statistics

Consensus median, pg/g	1.4
Median all values pg/g	1.5
Consensus mean, pg/g	1.6
Standard deviation, pg/g	0.56
Relative standard deviation, %	36
No. of values reported	24
No. of values removed	2
No. of reported non-detects	1

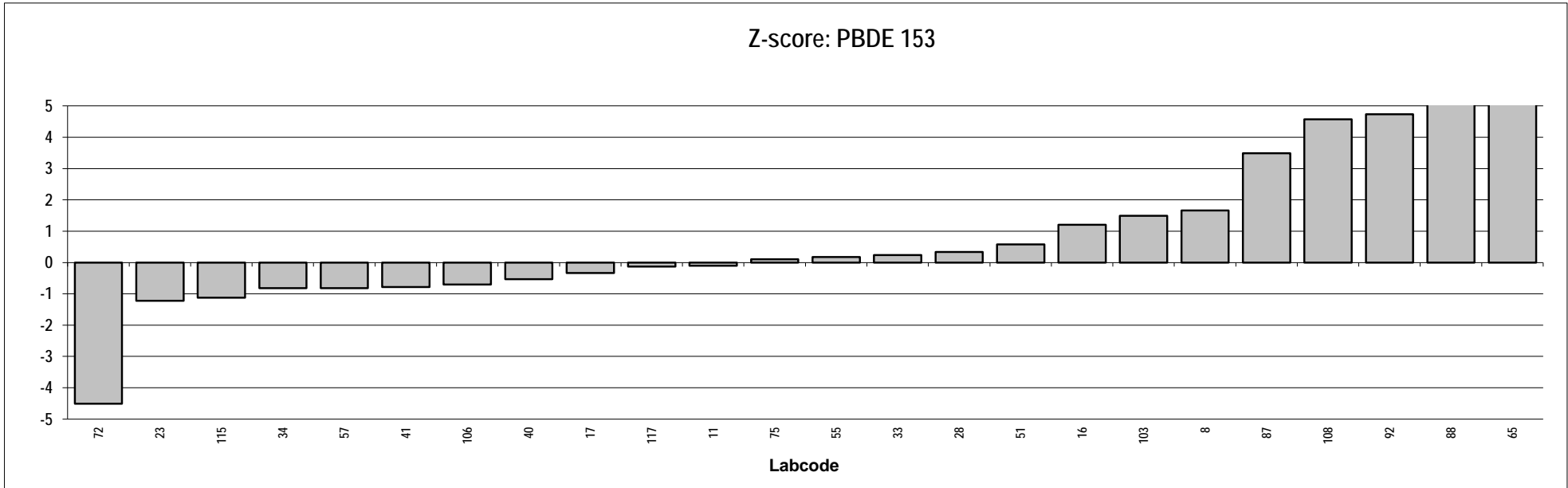
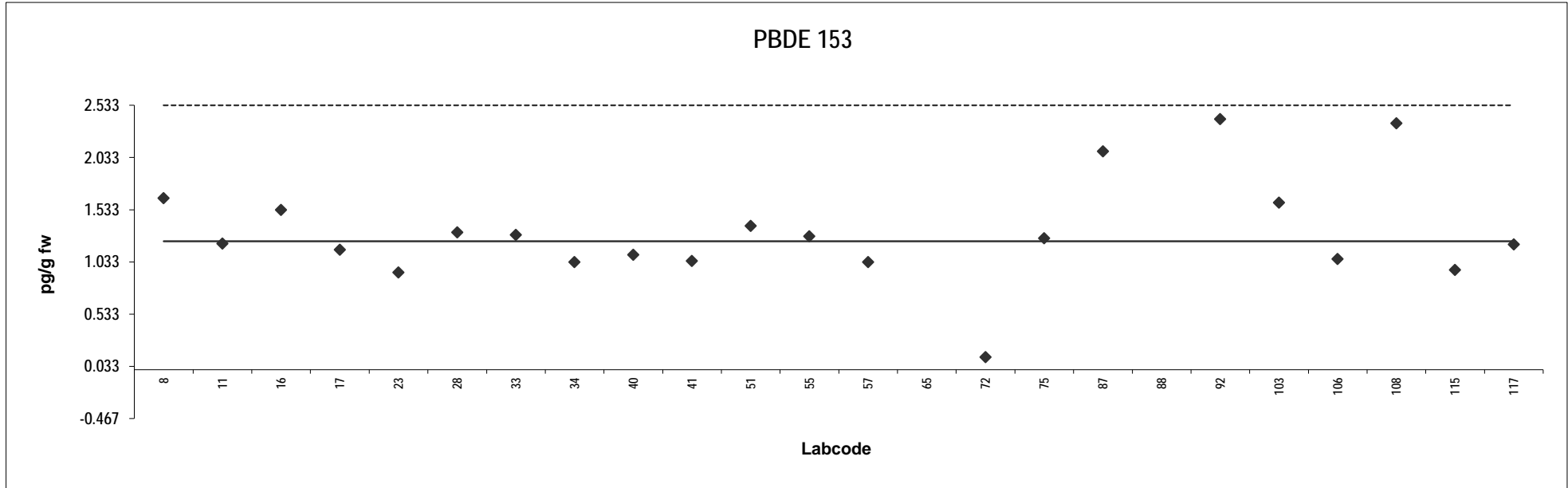


Sheep meat
Congener: PBDE 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	1.6	1.7					
11	1.2	-0.10					
16	1.5	1.2					
17	1.1	-0.34					
23	0.93	-1.2					
28	1.3	0.34					
33	1.3	0.24					
34	1.0	-0.82					
40	1.1	-0.54					
41	1.0	-0.78					
51	1.4	0.58					
55	1.3	0.18					
57	1.0	-0.82					
65	3.1	7.6	Outlier				
72	0.12	-4.5	ND				
75	1.3	0.10					
87	2.1	3.5					
88	3.1	7.6	Outlier				
92	2.4	4.7	ND				
103	1.6	1.5					
106	1.1	-0.70					
108	2.4	4.6					
115	0.96	-1.1					
117	1.2	-0.13					

Consensus statistics

Consensus median, pg/g	1.2
Median all values pg/g	1.3
Consensus mean, pg/g	1.3
Standard deviation, pg/g	0.50
Relative standard deviation, %	38
No. of values reported	24
No. of values removed	2
No. of reported non-detects	2

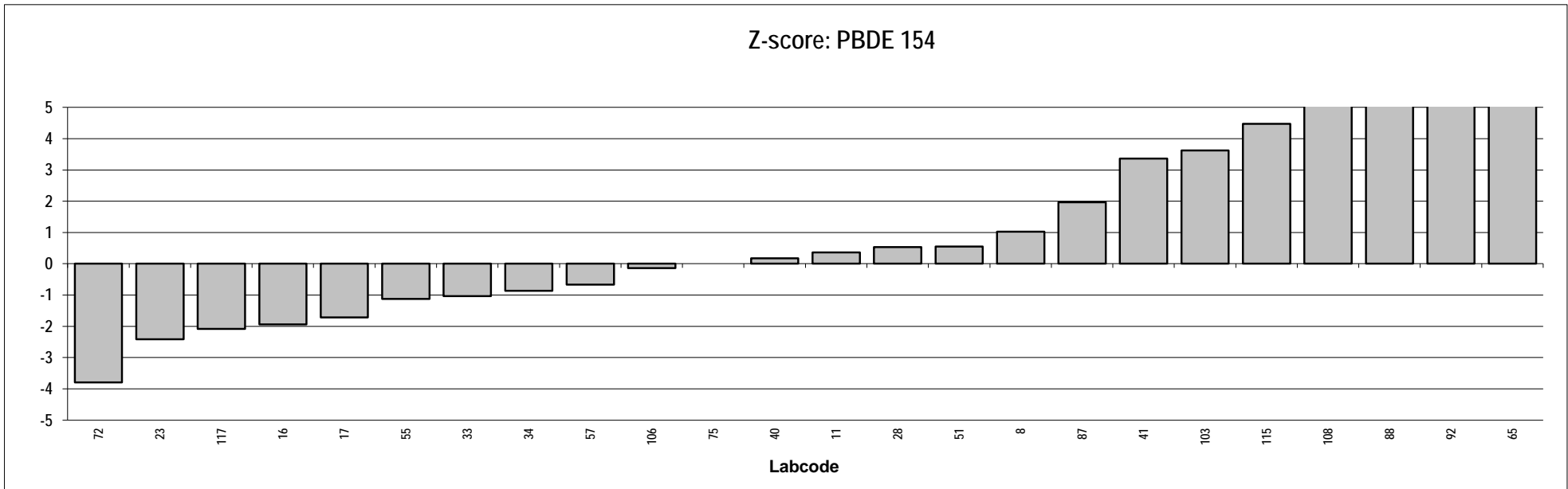
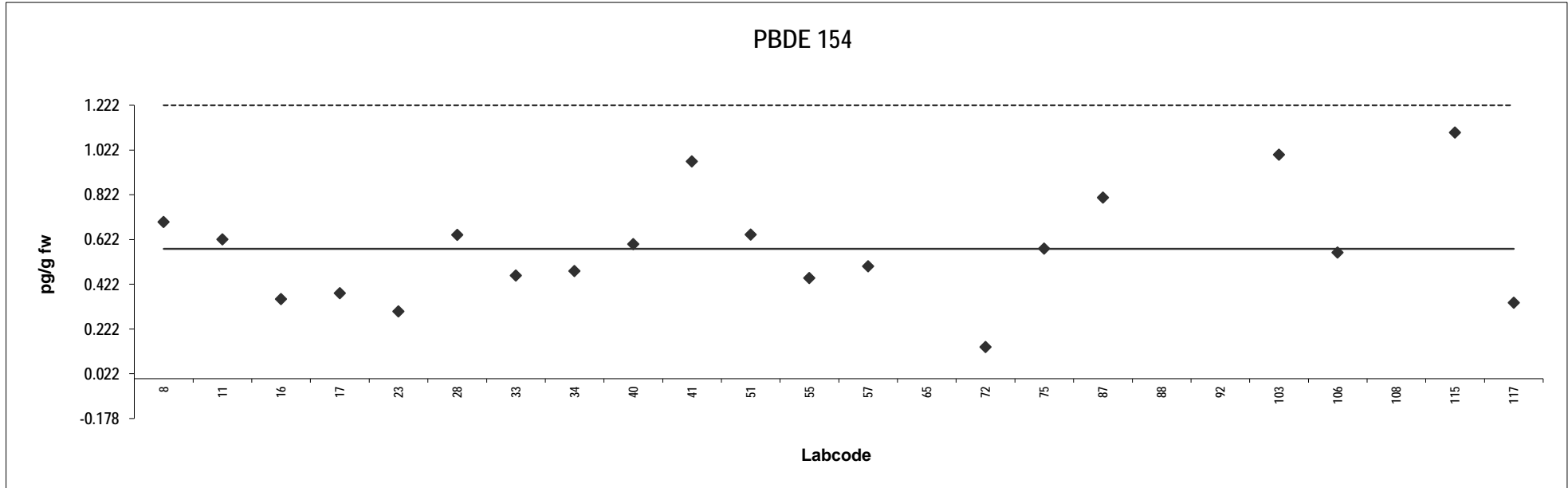


Sheep meat
Congener: PBDE 154

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	0.70	1.0					
11	0.62	0.36					
16	0.36	-1.9					
17	0.38	-1.7					
23	0.30	-2.4	ND				
28	0.64	0.53					
33	0.46	-1.0					
34	0.48	-0.86					
40	0.60	0.17	ND				
41	0.97	3.4					
51	0.64	0.55					
55	0.45	-1.1					
57	0.50	-0.67					
65	4.7	35	Outlier				
72	0.14	-3.8	ND				
75	0.58	0.00					
87	0.81	2.0					
88	2.0	12	Outlier,ND				
92	2.4	16	Outlier,ND				
103	1.0	3.6					
106	0.56	-0.14					
108	1.4	6.7	Outlier				
115	1.1	4.5					
117	0.34	-2.1					

Consensus statistics

Consensus median, pg/g	0.58
Median all values pg/g	0.61
Consensus mean, pg/g	0.58
Standard deviation, pg/g	0.25
Relative standard deviation, %	42
No. of values reported	24
No. of values removed	4
No. of reported non-detects	5

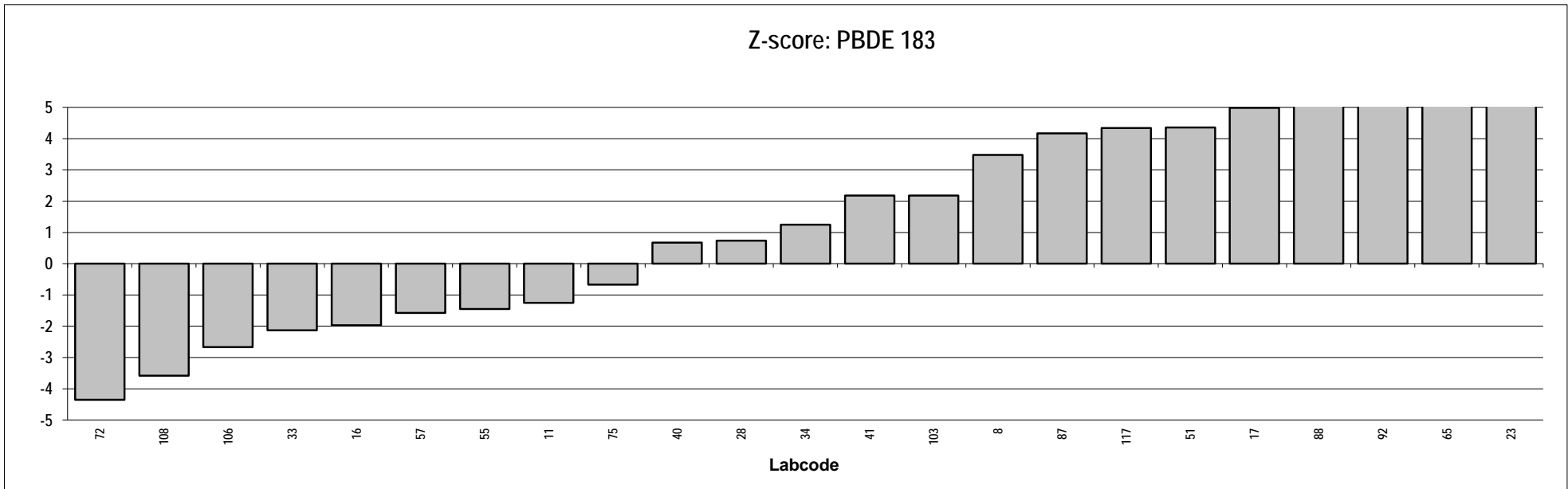
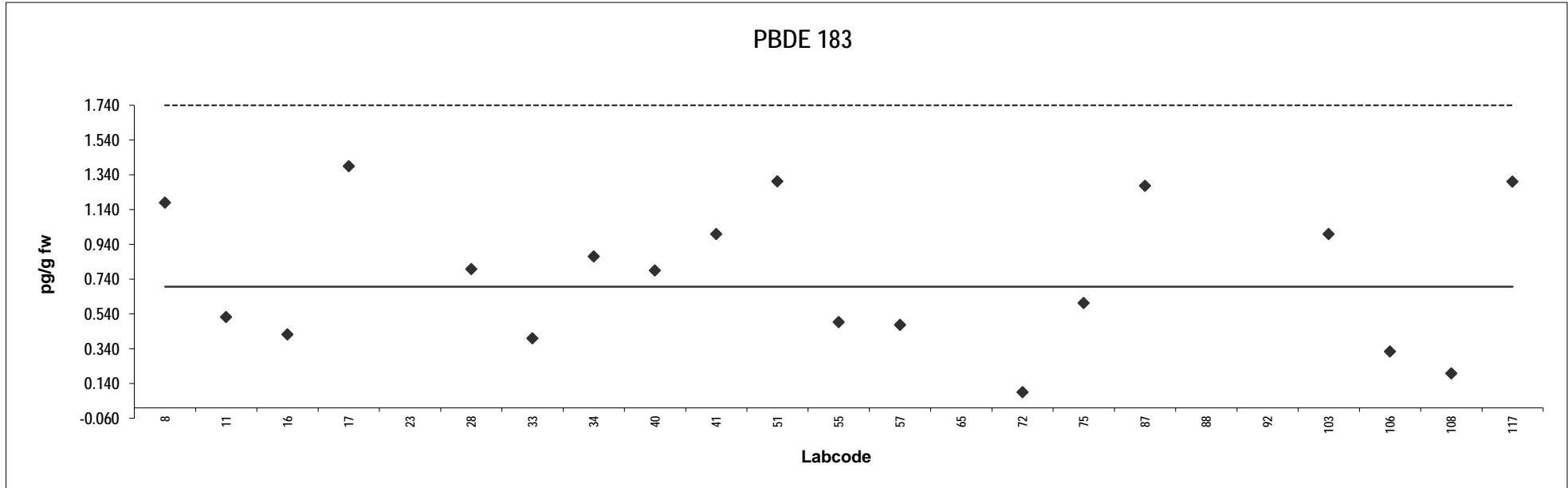


Sheep meat
Congener: PBDE 183

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	1.2	3.5					
11	0.52	-1.3					
16	0.42	-2.0					
17	1.4	5.0					
23	5.6	35	Outlier,ND				
28	0.80	0.73	ND				
33	0.40	-2.1					
34	0.87	1.2					
40	0.79	0.67					
41	1.0	2.2					
51	1.3	4.4					
55	0.49	-1.5					
57	0.48	-1.6					
65	4.6	28	Outlier				
72	0.090	-4.4	ND				
75	0.60	-0.67					
87	1.3	4.2					
88	2.0	9.4	Outlier,ND				
92	4.0	24	Outlier,ND				
103	1.0	2.2	ND				
106	0.32	-2.7					
108	0.20	-3.6	ND				
117	1.3	4.3	ND				

Consensus statistics

Consensus median, pg/g	0.70
Median all values pg/g	0.87
Consensus mean, pg/g	0.76
Standard deviation, pg/g	0.41
Relative standard deviation, %	54
No. of values reported	23
No. of values removed	4
No. of reported non-detects	8

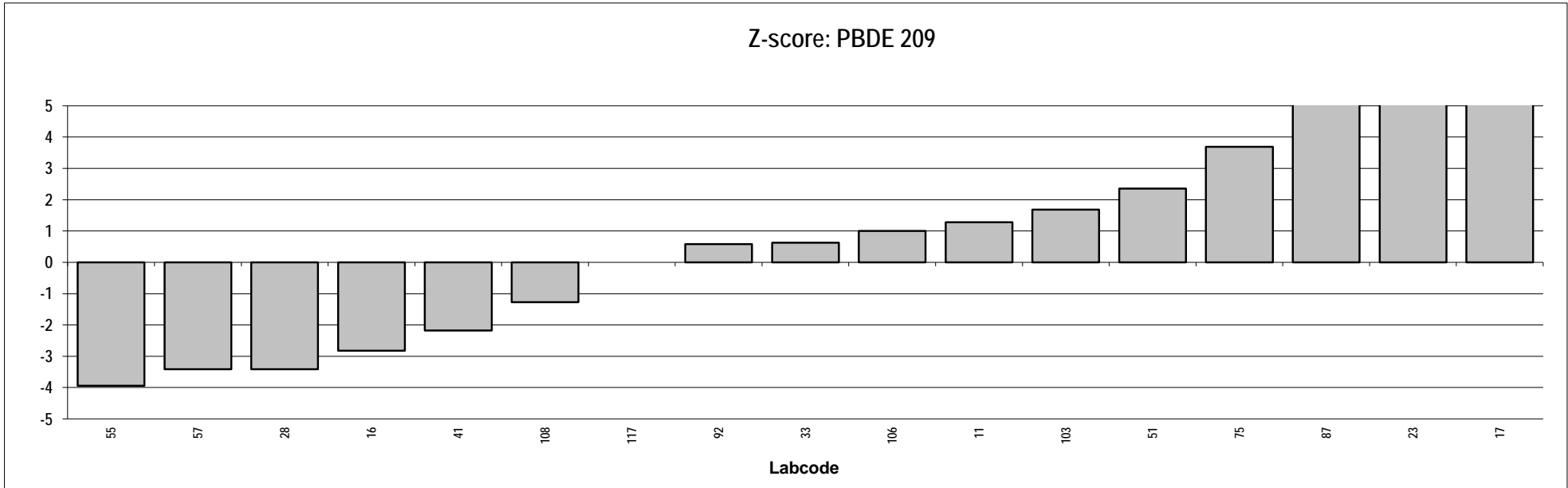
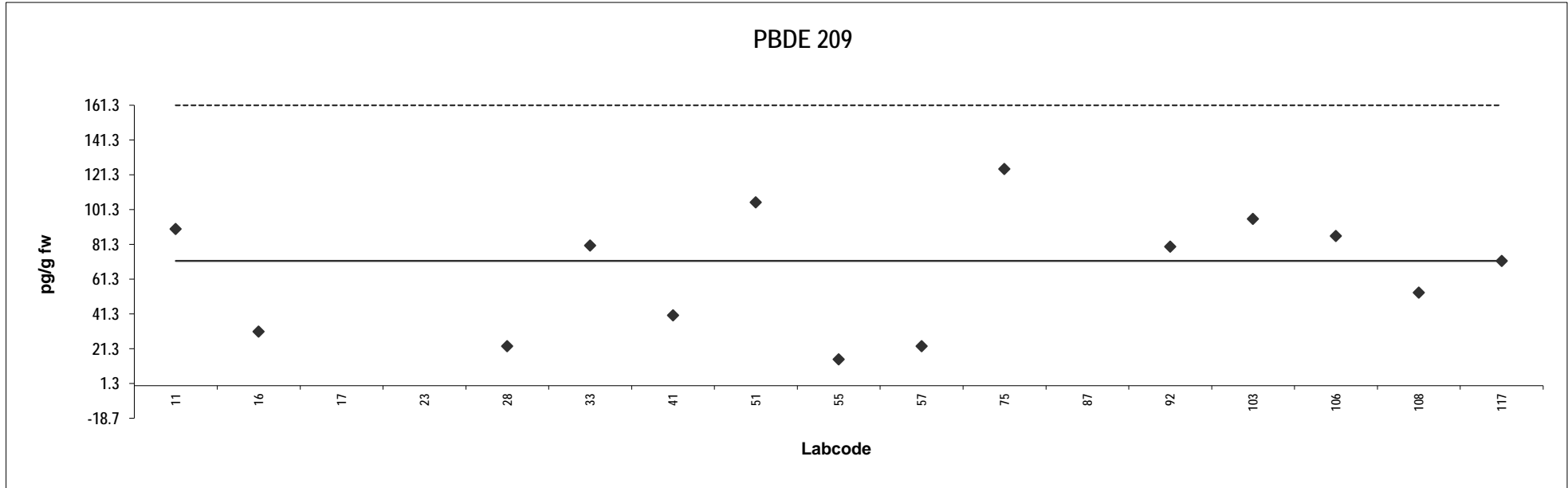


Sheep meat
Congener: PBDE 209

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
11	90	1.3					
16	31	-2.8					
17	11656	808	Outlier				
23	430	25	Outlier,ND				
28	23	-3.4					
33	81	0.62					
41	41	-2.2					
51	105	2.4					
55	15	-3.9					
57	23	-3.4					
75	125	3.7					
87	200	9.0	Outlier				
92	80	0.58	ND				
103	96	1.7					
106	86	1.0					
108	54	-1.3					
117	72	0.00					

Consensus statistics

Consensus median, pg/g	72
Median all values pg/g	81
Consensus mean, pg/g	66
Standard deviation, pg/g	35
Relative standard deviation, %	53
No. of values reported	17
No. of values removed	3
No. of reported non-detects	2

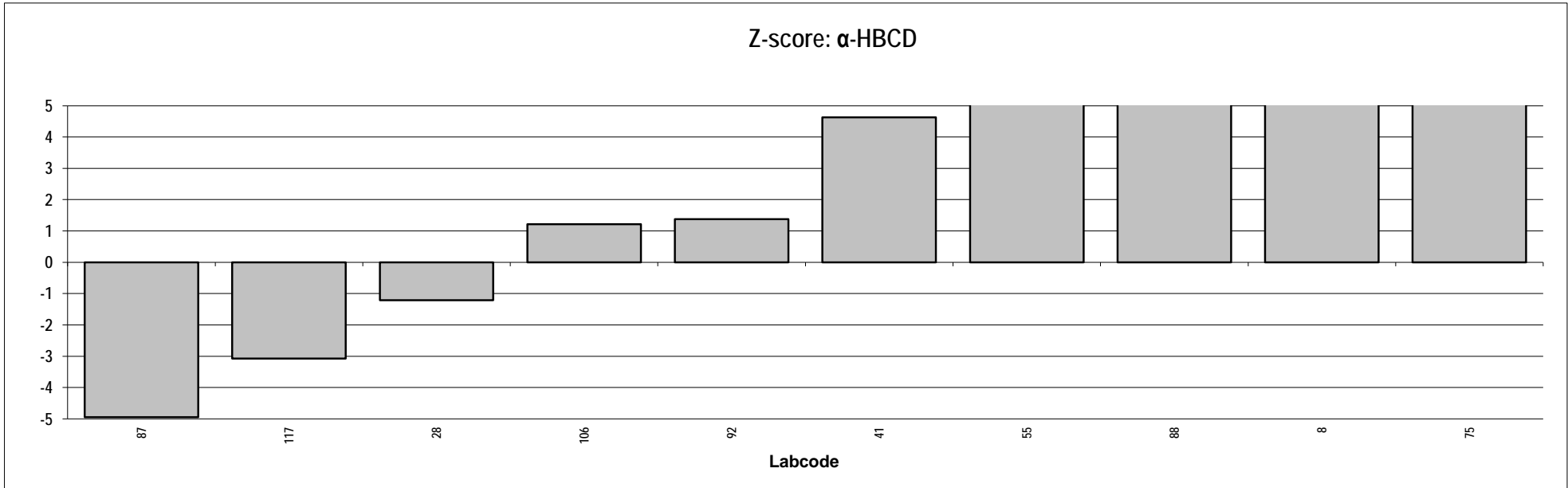
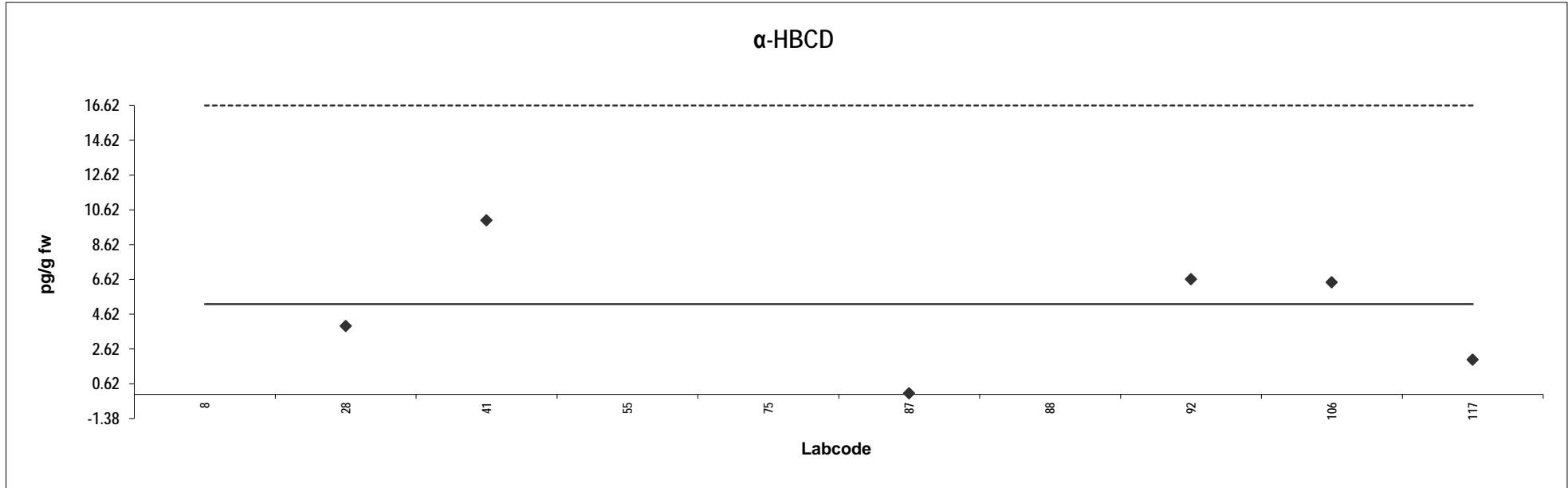


Sheep meat
Congener: α -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	200	188	Outlier,ND				
28	3.9	-1.2					
41	10	4.6	ND				
55	39	33	Outlier				
75	855	819	Outlier				
87	0.055	-4.9	ND				
88	100	91	Outlier,ND				
92	6.6	1.4					
106	6.4	1.2					
117	2.0	-3.1					

Consensus statistics

Consensus median, pg/g	5.2
Median all values pg/g	8.3
Consensus mean, pg/g	4.8
Standard deviation, pg/g	3.6
Relative standard deviation, %	74
No. of values reported	10
No. of values removed	4
No. of reported non-detects	4

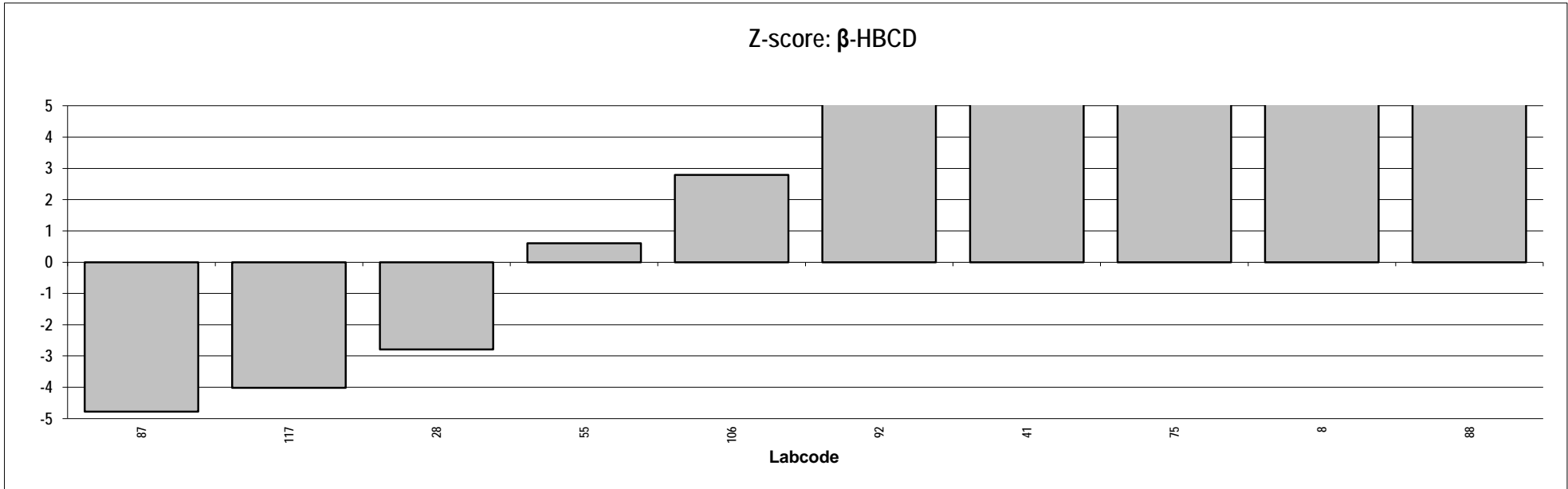
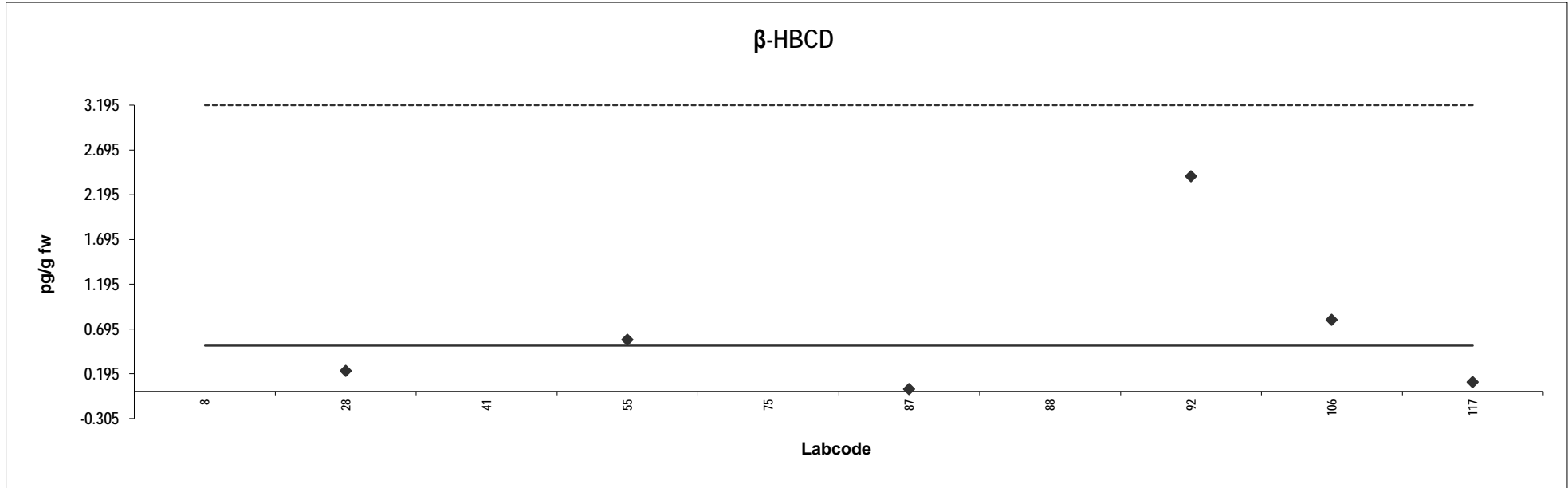


Sheep meat
Congener: β -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	100	975	Outlier,ND				
28	0.23	-2.8					
41	5.0	44	Outlier,ND				
55	0.57	0.61	ND				
75	8.0	73	Outlier				
87	0.023	-4.8	ND				
88	100	975	Outlier,ND				
92	2.4	19	ND				
106	0.79	2.8					
117	0.10	-4.0	ND				

Consensus statistics

Consensus median, pg/g	0.51
Median all values pg/g	1.6
Consensus mean, pg/g	0.69
Standard deviation, pg/g	0.89
Relative standard deviation, %	130
No. of values reported	10
No. of values removed	4
No. of reported non-detects	7

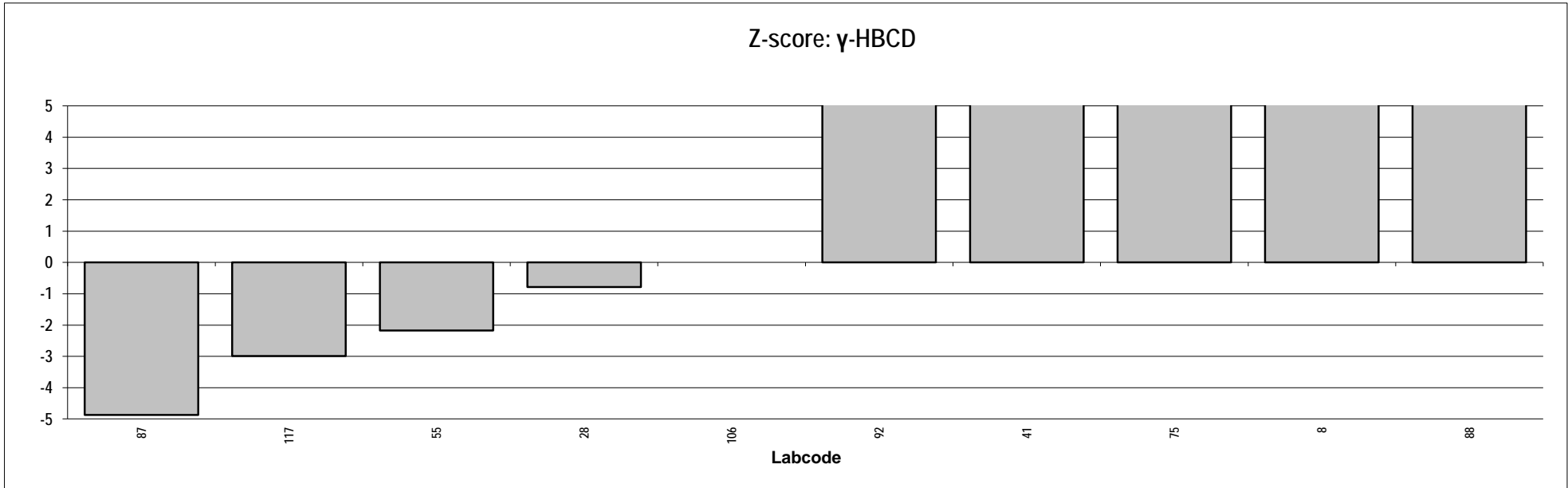
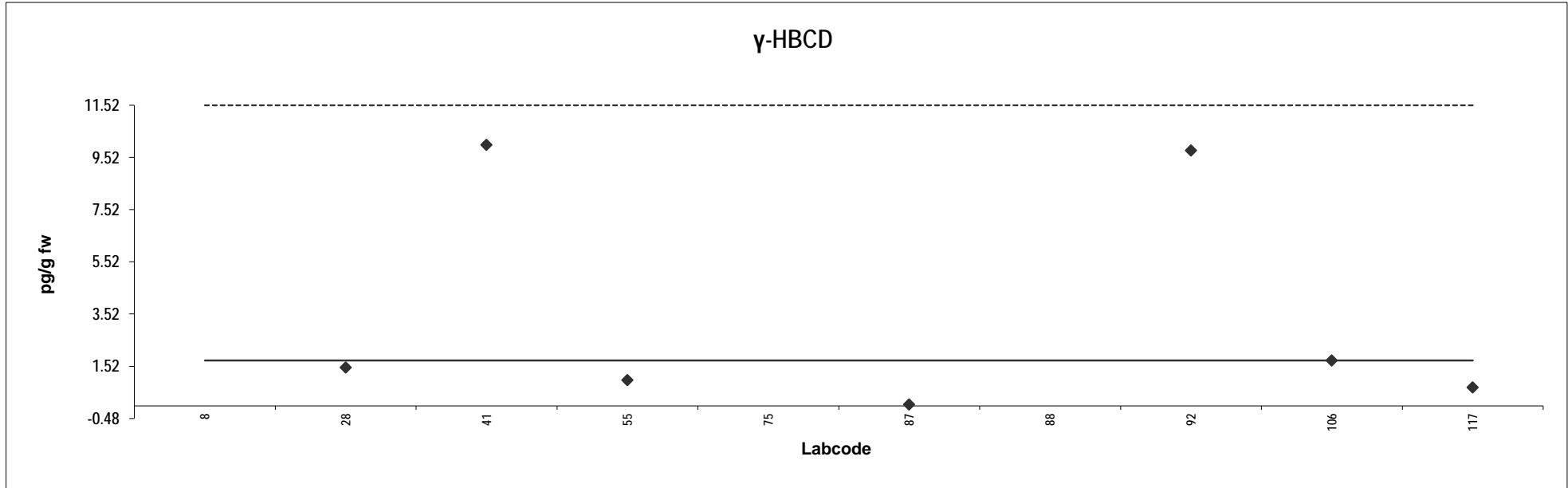


Sheep meat
Congener: γ -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	100	283	Outlier,ND				
28	1.5	-0.78					
41	10	24	ND				
55	0.98	-2.2	ND				
75	73	205	Outlier				
87	0.044	-4.9	ND				
88	100	283	Outlier,ND				
92	9.8	23					
106	1.7	0.00					
117	0.70	-3.0	ND				

Consensus statistics

Consensus median, pg/g	1.7
Median all values pg/g	5.8
Consensus mean, pg/g	3.5
Standard deviation, pg/g	4.4
Relative standard deviation, %	124
No. of values reported	10
No. of values removed	3
No. of reported non-detects	6

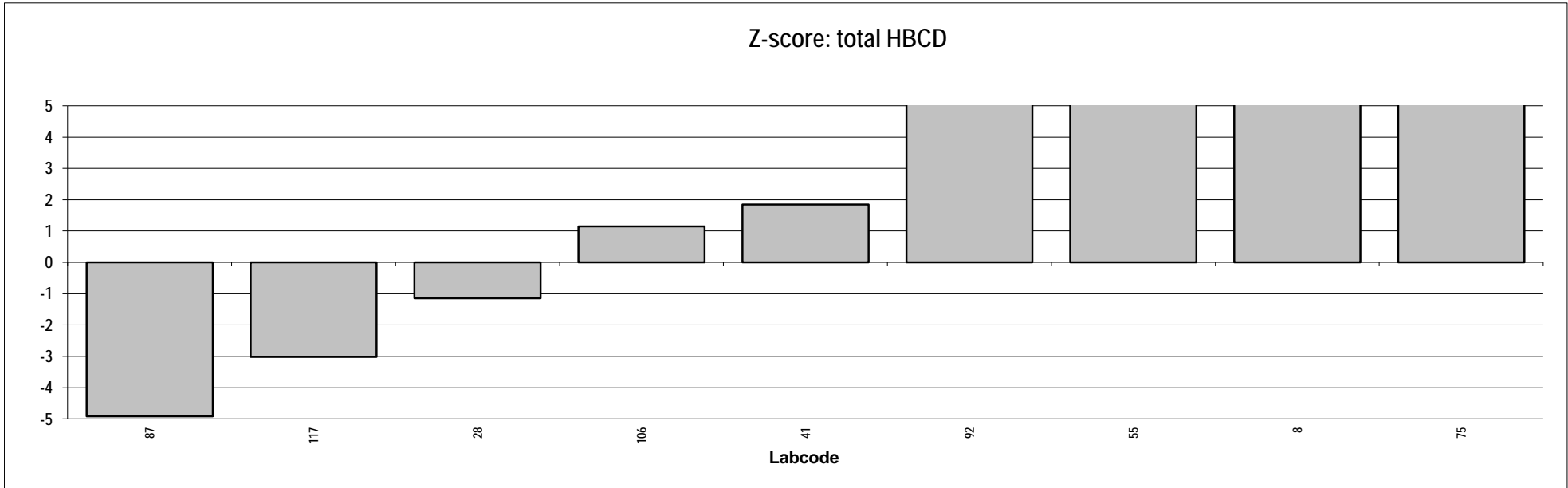
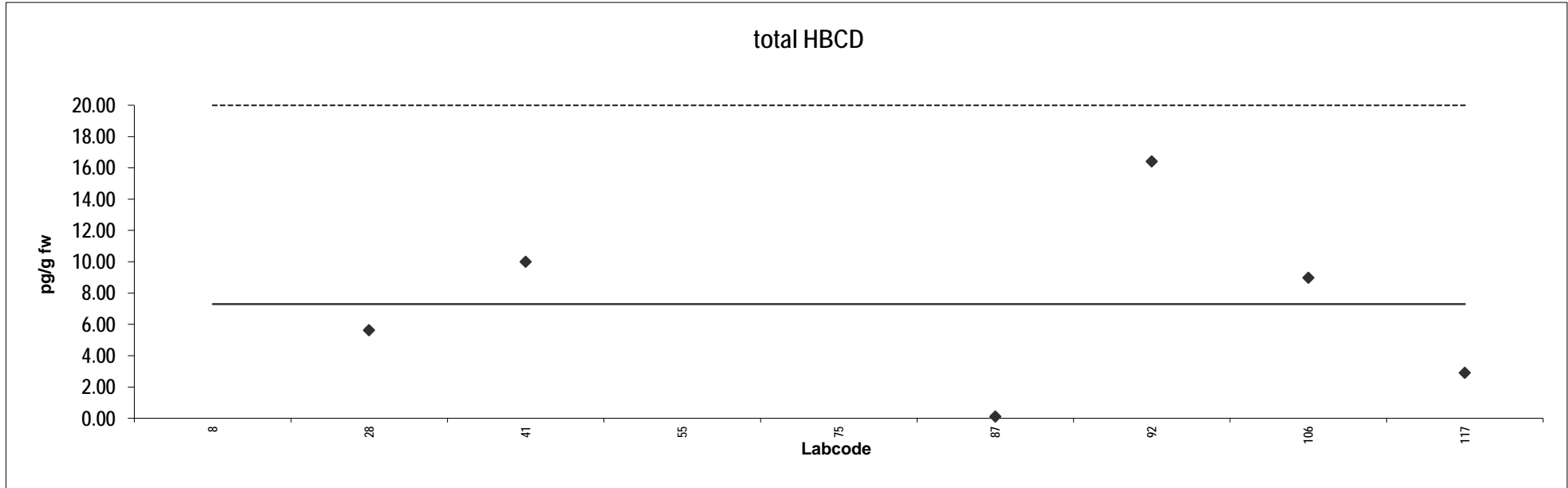


Sheep meat
Congener: total HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	200	132	Outlier,ND				
28	5.6	-1.1					
41	10	1.8	ND				
55	39	22	Outlier				
75	936	636	Outlier				
87	0.12	-4.9	ND				
92	16	6.2					
106	9.0	1.1					
117	2.9	-3.0					

Consensus statistics

Consensus median, pg/g	7.3
Median all values pg/g	10
Consensus mean, pg/g	7.3
Standard deviation, pg/g	5.8
Relative standard deviation, %	79
No. of values reported	9
No. of values removed	3
No. of reported non-detects	3



Appendix 3:

Presentation of results
for Cod liver-2017

Appendix 3: Presentation of results: Fish oil-2017

Statistic calculations for PCDDs, PCDFs and dioxin-like PCBs

For each congener, the outliers were removed and the consensus value was calculated according to the following procedure:

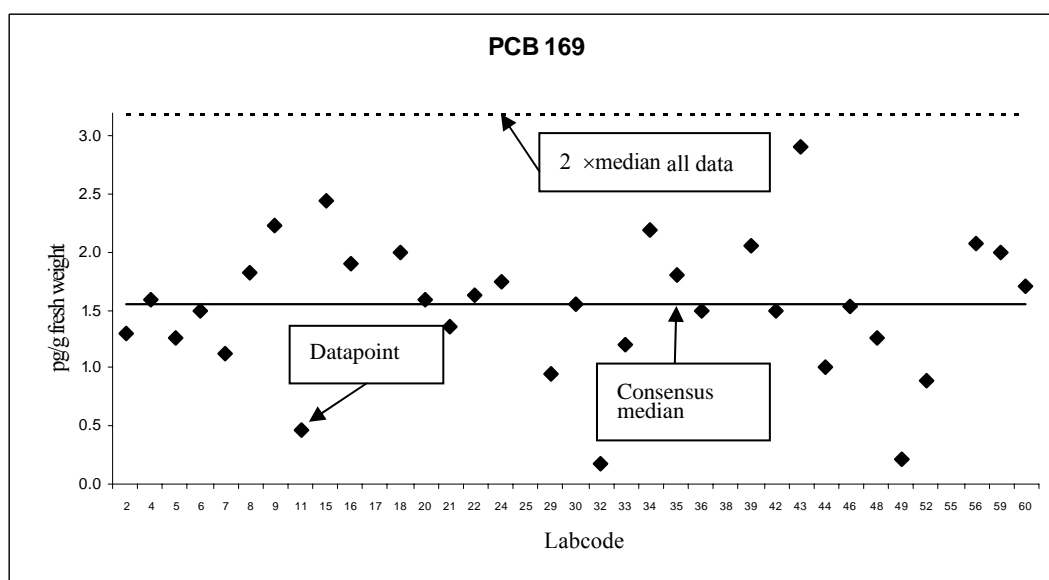
1. The median was calculated from all the reported data, using the detection limit as concentration for non-detected congeners.
2. Values exceeding $2 \times$ this median were defined as outliers and removed from the data set.
3. Median, mean and standard deviation were re-calculated from the remaining data. This second median was called consensus.

Statistic calculations for indicator PCBs, PBDEs and HBCD

For each congener, the outliers were removed and the consensus value was calculated according to the following procedure:

1. The median was calculated from all the reported data, using the detection limit as concentration for non-detected congeners (NDs).
2. Values exceeding $2 \times$ this median were defined as outliers and removed from the data set. The NDs were also removed.
3. Median, mean and standard deviation were re-calculated from the remaining data. This second median was called consensus.
4. For comparison, median, mean and standard deviation were also calculated without removing NDs.

The diagram shows the reported data up to approximately the limit for outliers ($2 \times$ the first median).



Z-Scores of individual congeners

Z-scores of each congener were calculated for each laboratory according to the following equation:

$$z = (x - X)/\sigma$$

where x = reported value; X = assigned value (consensus); σ = target value for standard deviation. A σ of 20% of the consensus was used, i.e. z-scores between +1 and -1 reflect a deviation of $\pm 20\%$ from the consensus value.

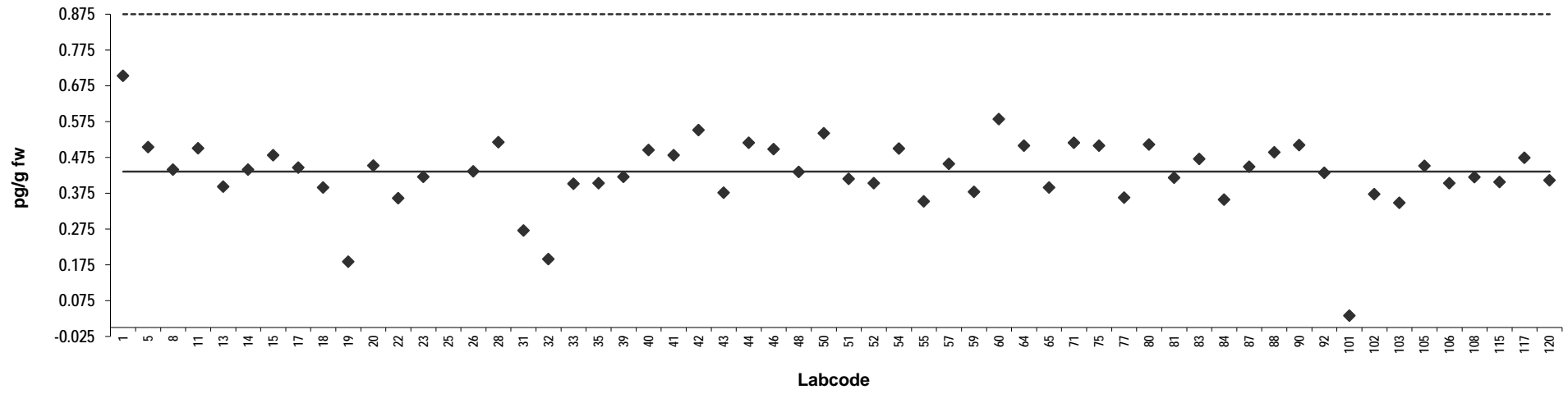
Cod liver
Congener: 2,3,7,8 TCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.70	3.1		87	0.45	0.14	
5	0.50	0.78		88	0.49	0.61	
8	0.44	0.053		90	0.51	0.84	
11	0.50	0.74		92	0.43	-0.046	
13	0.39	-0.49		101	0.032	-4.6	ND
14	0.44	0.057		102	0.37	-0.74	
15	0.48	0.52		103	0.35	-1.0	
17	0.45	0.12		105	0.45	0.17	
18	0.39	-0.52		106	0.40	-0.38	
19	0.18	-2.9		108	0.42	-0.18	
20	0.45	0.18		115	0.41	-0.34	
22	0.36	-0.86		117	0.47	0.43	
23	0.42	-0.17		120	0.41	-0.29	
25	2.9	29	Outlier				
26	0.44	0.00					
28	0.52	0.93					
31	0.27	-1.9					
32	0.19	-2.8					
33	0.40	-0.40					
35	0.40	-0.38					
39	0.42	-0.17					
40	0.49	0.69					
41	0.48	0.52					
42	0.55	1.3					
43	0.38	-0.69					
44	0.52	0.92					
46	0.50	0.71					
48	0.43	-0.022					
50	0.54	1.2					
51	0.41	-0.24					
52	0.40	-0.38					
54	0.50	0.74					
55	0.35	-0.96					
57	0.46	0.24					
59	0.38	-0.66					
60	0.58	1.7					
64	0.51	0.83					
65	0.39	-0.52					
71	0.51	0.92					
75	0.51	0.82					
77	0.36	-0.84					
80	0.51	0.86					
81	0.42	-0.21					
83	0.47	0.40					
84	0.36	-0.91					

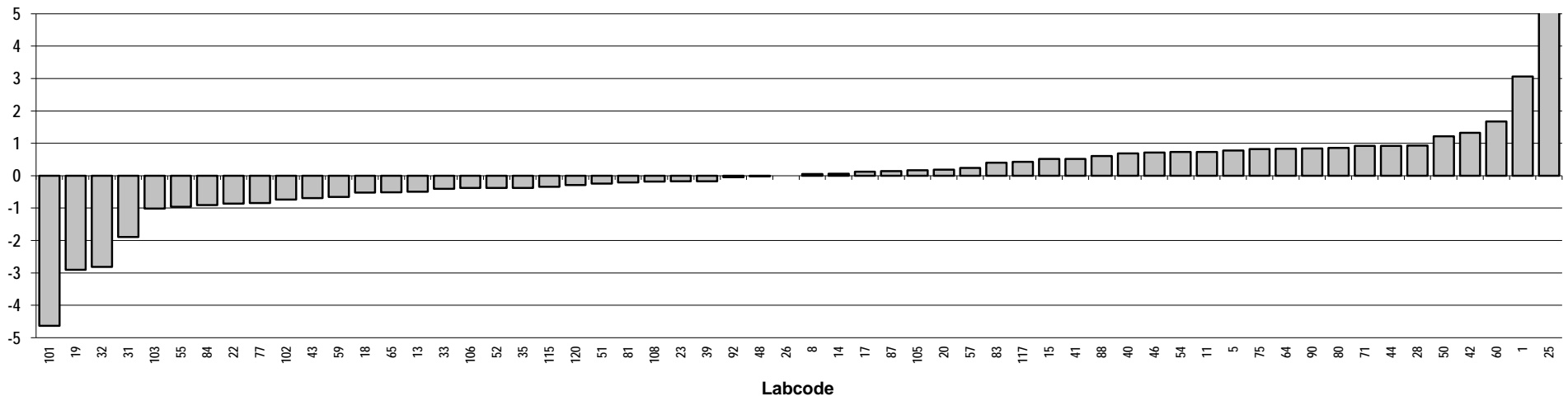
Consensus statistics

Consensus median, pg/g	0.44
Median all values pg/g	0.44
Consensus mean, pg/g	0.43
Standard deviation, pg/g	0.10
Relative standard deviation, %	23
No. of values reported	58
No. of values removed	1
No. of reported non-detects	1

2,3,7,8 TCDD



Z-score: 2,3,7,8 TCDD

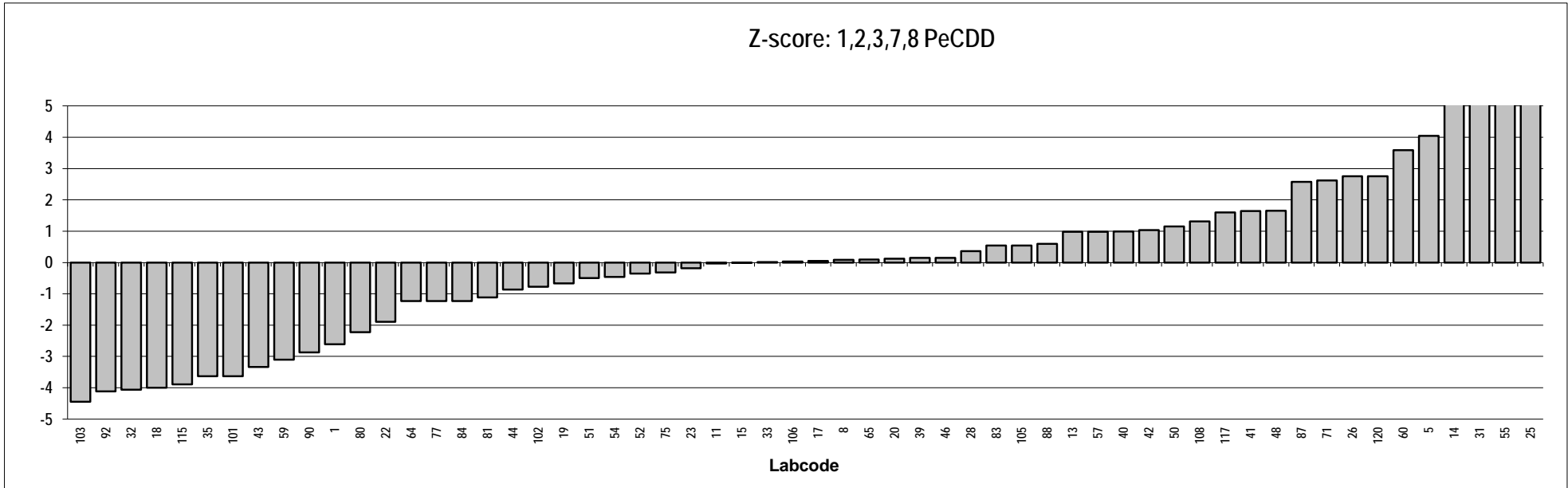
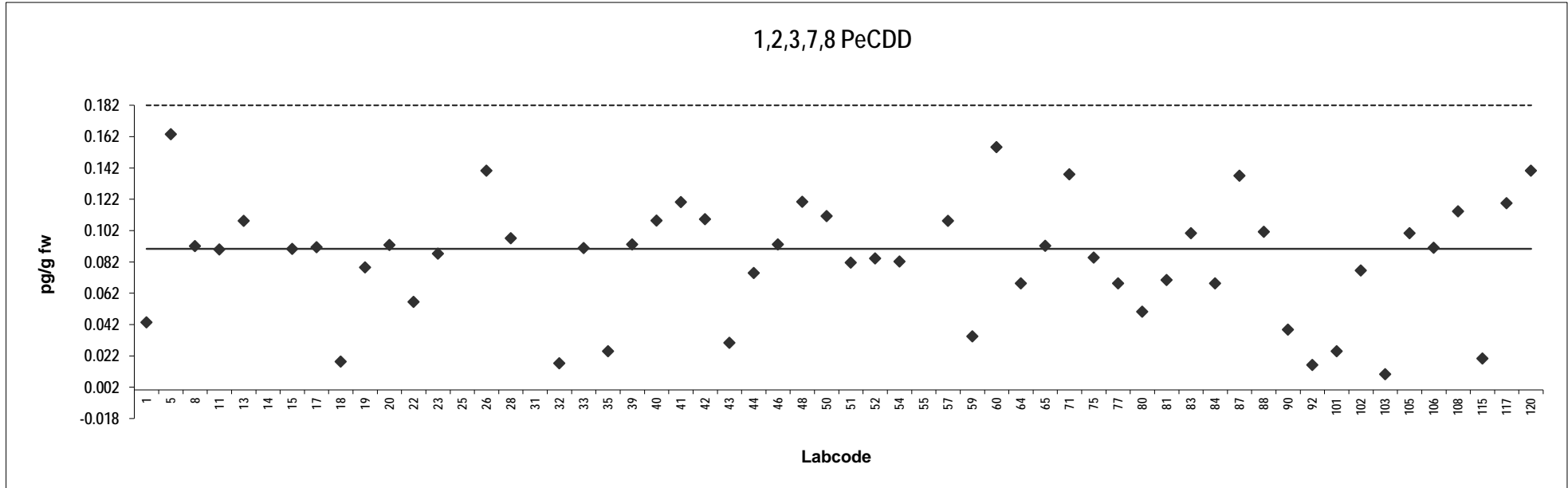


Cod liver
Congener: 1,2,3,7,8 PeCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.043	-2.6		87	0.14	2.6	
5	0.16	4.0		88	0.10	0.60	
8	0.092	0.087		90	0.038	-2.9	
11	0.090	-0.027		92	0.016	-4.1	ND
13	0.11	0.98		101	0.025	-3.6	ND
14	0.20	6.1	Outlier,ND	102	0.076	-0.8	
15	0.090	-0.014		103	0.010	-4.4	ND
17	0.091	0.046		105	0.10	0.54	
18	0.018	-4.0	ND	106	0.091	0.028	
19	0.078	-0.67		108	0.11	1.3	
20	0.093	0.12		115	0.020	-3.9	ND
22	0.056	-1.9	ND	117	0.12	1.6	
23	0.087	-0.18		120	0.14	2.8	
25	2.1	111	Outlier				
26	0.14	2.8					
28	0.097	0.36					
31	0.21	6.6	Outlier,ND				
32	0.017	-4.1					
33	0.091	0.014					
35	0.025	-3.6	ND				
39	0.093	0.15					
40	0.11	0.99					
41	0.12	1.6					
42	0.11	1.0					
43	0.030	-3.3	ND				
44	0.075	-0.86	ND				
46	0.093	0.15					
48	0.12	1.7					
50	0.11	1.1					
51	0.081	-0.50					
52	0.084	-0.35					
54	0.082	-0.46					
55	0.38	16	Outlier				
57	0.11	0.98					
59	0.034	-3.1	ND				
60	0.16	3.6					
64	0.068	-1.2					
65	0.092	0.097					
71	0.14	2.6					
75	0.084	-0.32					
77	0.068	-1.2					
80	0.050	-2.2	ND				
81	0.070	-1.1					
83	0.10	0.54					
84	0.068	-1.2					

Consensus statistics

Consensus median, pg/g	0.090
Median all values pg/g	0.091
Consensus mean, pg/g	0.083
Standard deviation, pg/g	0.038
Relative standard deviation, %	45
No. of values reported	58
No. of values removed	4
No. of reported non-detects	13



Cod liver

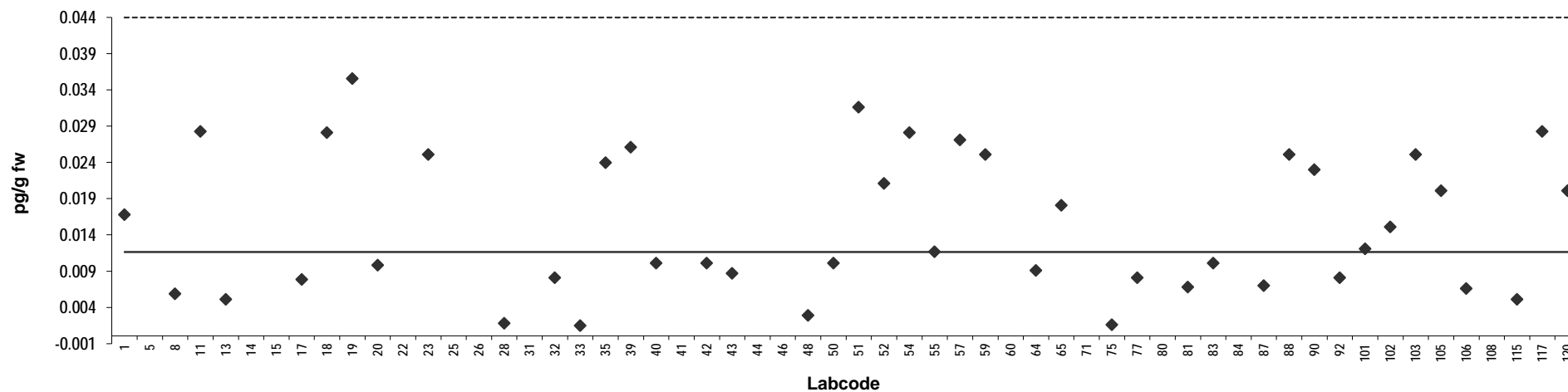
Congener: 1,2,3,4,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.017	2.2		87	0.0069	-2.0	
5	0.054	18	Outlier,ND	88	0.025	5.8	ND
8	0.0058	-2.5	ND	90	0.023	4.9	
11	0.028	7.2	ND	92	0.0080	-1.5	ND
13	0.0050	-2.8	ND	101	0.012	0.19	ND
14	0.23	93	Outlier	102	0.015	1.5	ND
15	0.050	17	Outlier,ND	103	0.025	5.8	ND
17	0.0077	-1.7		105	0.020	3.6	ND
18	0.028	7.1	ND	106	0.0065	-2.2	
19	0.035	10		108	0.067	24	Outlier
20	0.0097	-0.79		115	0.0050	-2.8	ND
22	0.076	28	Outlier	117	0.028	7.2	
23	0.025	5.8	ND	120	0.020	3.6	ND
25	1.7	720	Outlier				
26	0.050	17	Outlier,ND				
28	0.0017	-4.3	ND				
31	0.49	207	Outlier,ND				
32	0.0080	-1.5	ND				
33	0.0014	-4.4					
35	0.024	5.3	ND				
39	0.026	6.2	ND				
40	0.010	-0.68	ND				
41	0.10	38	Outlier,ND				
42	0.010	-0.68	ND				
43	0.0086	-1.3	ND				
44	0.075	27	Outlier,ND				
46	0.10	38	Outlier,ND				
48	0.0028	-3.8					
50	0.010	-0.68	ND				
51	0.032	8.6	ND				
52	0.021	4.1	ND				
54	0.028	7.1	ND				
55	0.012	0.00	ND				
57	0.027	6.7	ND				
59	0.025	5.8	ND				
60	0.094	36	Outlier,ND				
64	0.0090	-1.1	ND				
65	0.018	2.8					
71	0.068	25	Outlier,ND				
75	0.0015	-4.3	ND				
77	0.0080	-1.6	ND				
80	0.050	17	Outlier,ND				
81	0.0067	-2.1					
83	0.010	-0.68	ND				
84	0.050	17	Outlier,ND				

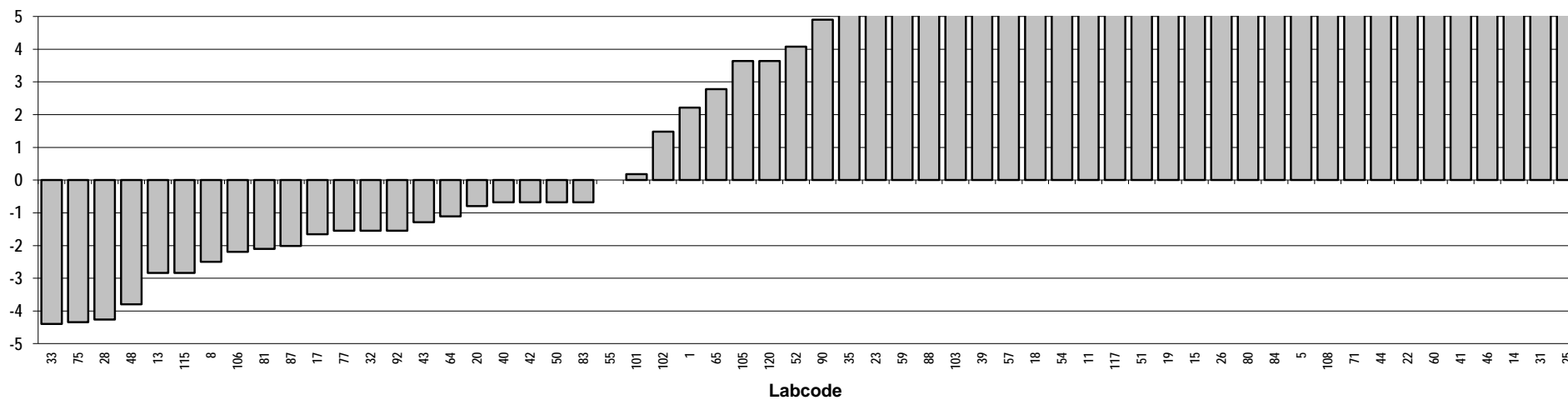
Consensus statistics

Consensus median, pg/g	0.012
Median all values pg/g	0.022
Consensus mean, pg/g	0.015
Standard deviation, pg/g	0.0096
Relative standard deviation, %	63
No. of values reported	58
No. of values removed	15
No. of reported non-detects	42

1,2,3,4,7,8 HxCDD



Z-score: 1,2,3,4,7,8 HxCDD



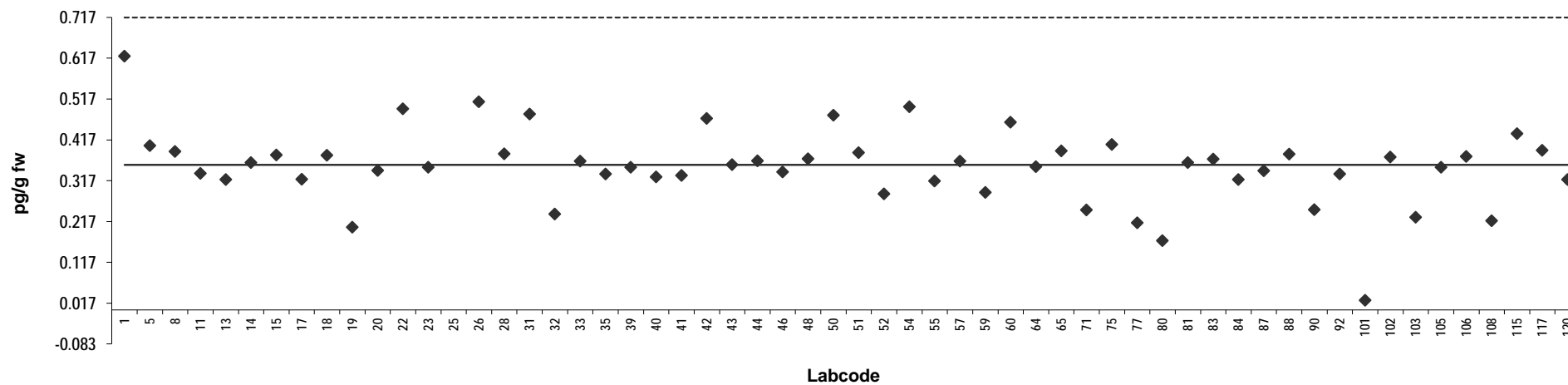
Cod liver
Congener: 1,2,3,6,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.62	3.7		87	0.34	-0.21	
5	0.40	0.66		88	0.38	0.37	
8	0.39	0.45		90	0.25	-1.5	
11	0.33	-0.30		92	0.33	-0.32	
13	0.32	-0.51		101	0.024	-4.7	ND
14	0.36	0.070		102	0.38	0.27	
15	0.38	0.34		103	0.23	-1.8	
17	0.32	-0.50		105	0.35	-0.084	
18	0.38	0.32		106	0.38	0.28	
19	0.20	-2.2		108	0.22	-1.9	
20	0.34	-0.20		115	0.43	1.1	
22	0.49	1.9		117	0.39	0.49	
23	0.35	-0.084		120	0.32	-0.51	
25	2.8	34	Outlier				
26	0.51	2.2					
28	0.38	0.38					
31	0.48	1.7	ND				
32	0.24	-1.7					
33	0.37	0.13					
35	0.33	-0.32					
39	0.35	-0.084					
40	0.33	-0.42					
41	0.33	-0.37					
42	0.47	1.6					
43	0.36	0.00					
44	0.37	0.14					
46	0.34	-0.25					
48	0.37	0.20					
50	0.48	1.7					
51	0.39	0.41					
52	0.28	-1.0					
54	0.50	2.0					
55	0.32	-0.56					
57	0.37	0.13					
59	0.29	-0.96					
60	0.46	1.5					
64	0.35	-0.070					
65	0.39	0.48					
71	0.25	-1.6					
75	0.41	0.69					
77	0.21	-2.0					
80	0.17	-2.6					
81	0.36	0.069					
83	0.37	0.20					
84	0.32	-0.51					

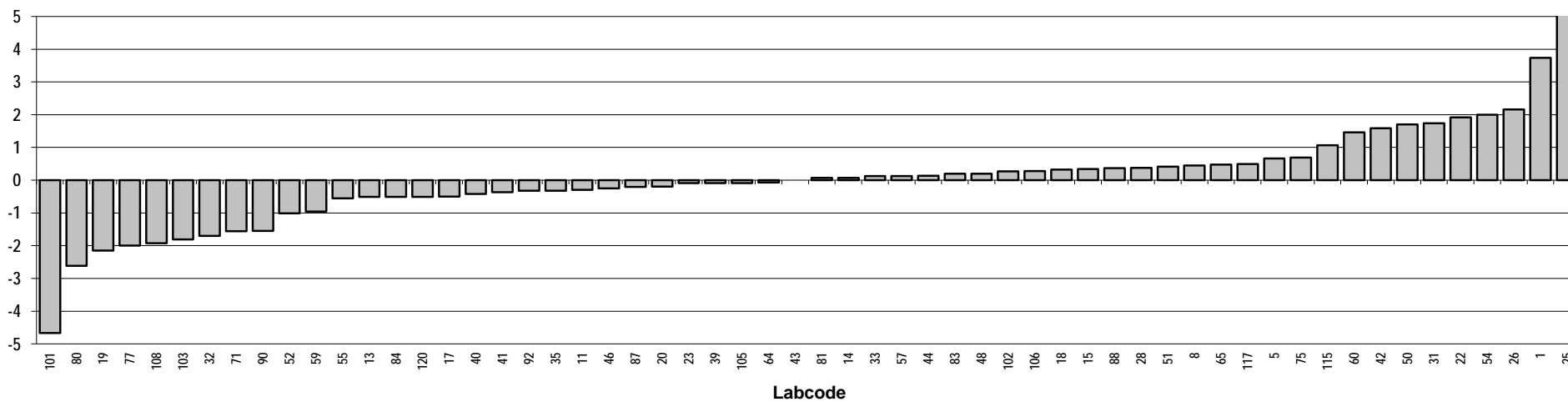
Consensus statistics

Consensus median, pg/g	0.36
Median all values pg/g	0.36
Consensus mean, pg/g	0.35
Standard deviation, pg/g	0.093
Relative standard deviation, %	27
No. of values reported	58
No. of values removed	1
No. of reported non-detects	2

1,2,3,6,7,8 HxCDD



Z-score: 1,2,3,6,7,8 HxCDD

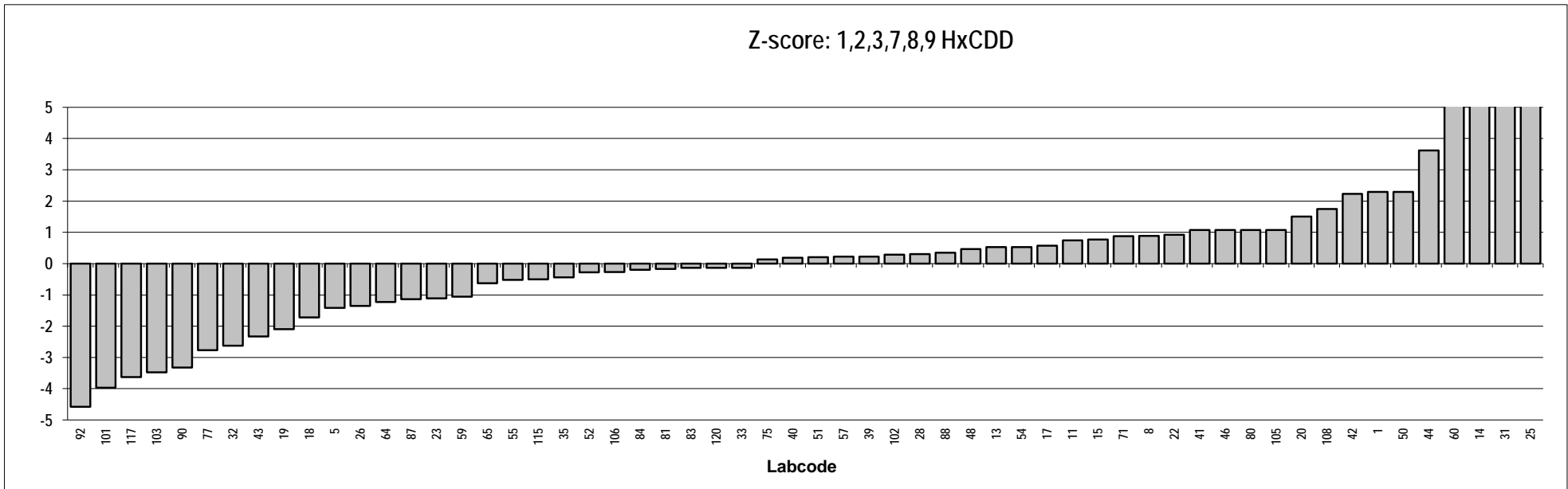
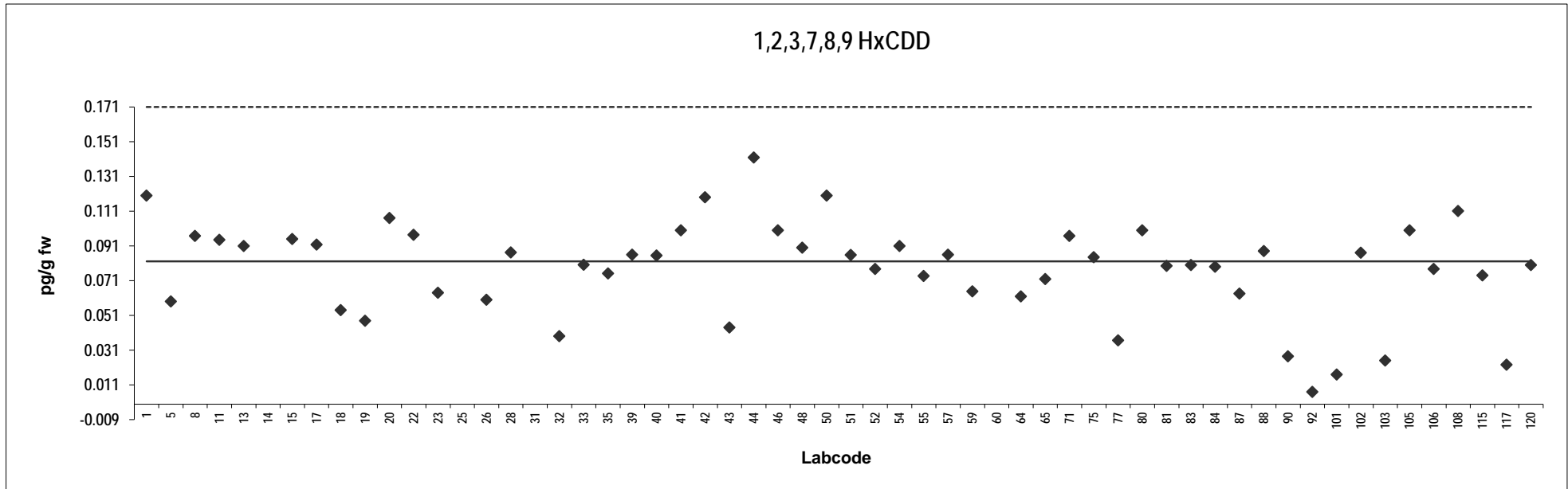


Cod liver
Congener: 1,2,3,7,8,9 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.12	2.3		87	0.064	-1.1	
5	0.059	-1.4	ND	88	0.088	0.35	
8	0.097	0.88		90	0.028	-3.3	
11	0.094	0.74		92	0.0070	-4.6	ND
13	0.091	0.53		101	0.017	-4.0	ND
14	0.20	7.2	Outlier,ND	102	0.087	0.29	
15	0.095	0.77		103	0.025	-3.5	ND
17	0.092	0.57		105	0.10	1.1	
18	0.054	-1.7		106	0.078	-0.27	
19	0.048	-2.1		108	0.11	1.7	
20	0.11	1.5		115	0.074	-0.50	
22	0.097	0.92		117	0.023	-3.6	ND
23	0.064	-1.1		120	0.080	-0.14	
25	5.9	352	Outlier				
26	0.060	-1.4					
28	0.087	0.31					
31	0.50	25	Outlier,ND				
32	0.039	-2.6					
33	0.080	-0.13					
35	0.075	-0.44					
39	0.086	0.23					
40	0.085	0.19					
41	0.10	1.1	ND				
42	0.12	2.2					
43	0.044	-2.3	ND				
44	0.14	3.6					
46	0.10	1.1	ND				
48	0.090	0.46					
50	0.12	2.3					
51	0.086	0.21					
52	0.078	-0.28					
54	0.091	0.53					
55	0.074	-0.52					
57	0.086	0.22					
59	0.065	-1.1					
60	0.18	5.9	Outlier				
64	0.062	-1.2					
65	0.072	-0.62					
71	0.097	0.88					
75	0.084	0.13					
77	0.037	-2.8					
80	0.10	1.1					
81	0.080	-0.17					
83	0.080	-0.14					
84	0.079	-0.20					

Consensus statistics

Consensus median, pg/g	0.082
Median all values pg/g	0.086
Consensus mean, pg/g	0.078
Standard deviation, pg/g	0.028
Relative standard deviation, %	36
No. of values reported	58
No. of values removed	4
No. of reported non-detects	10



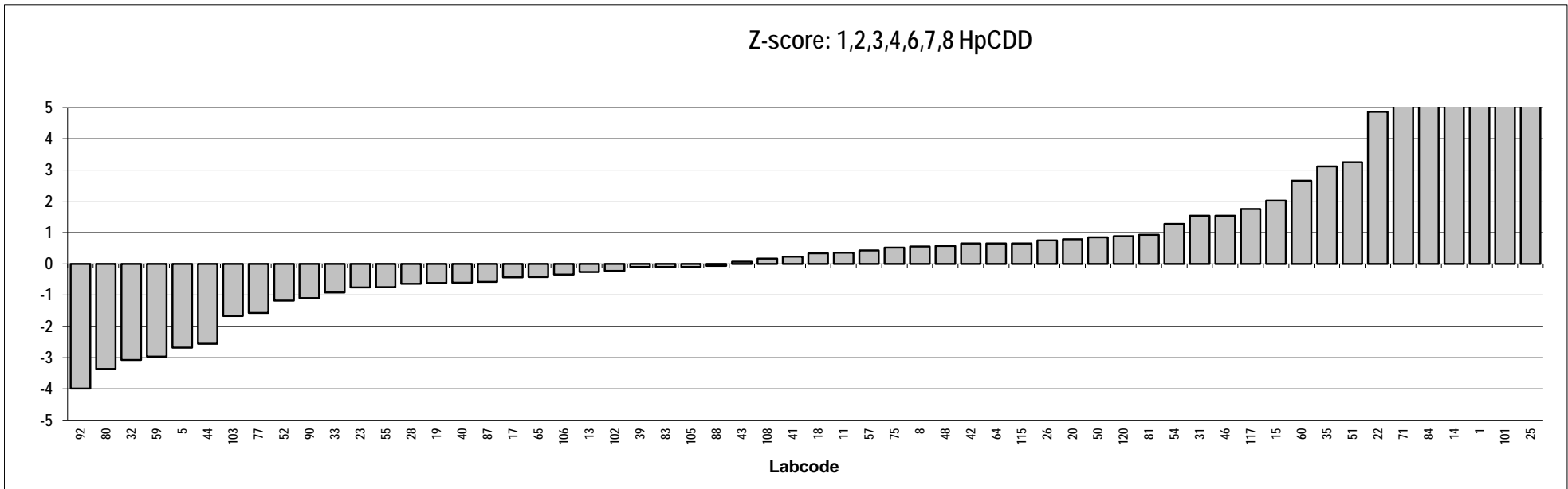
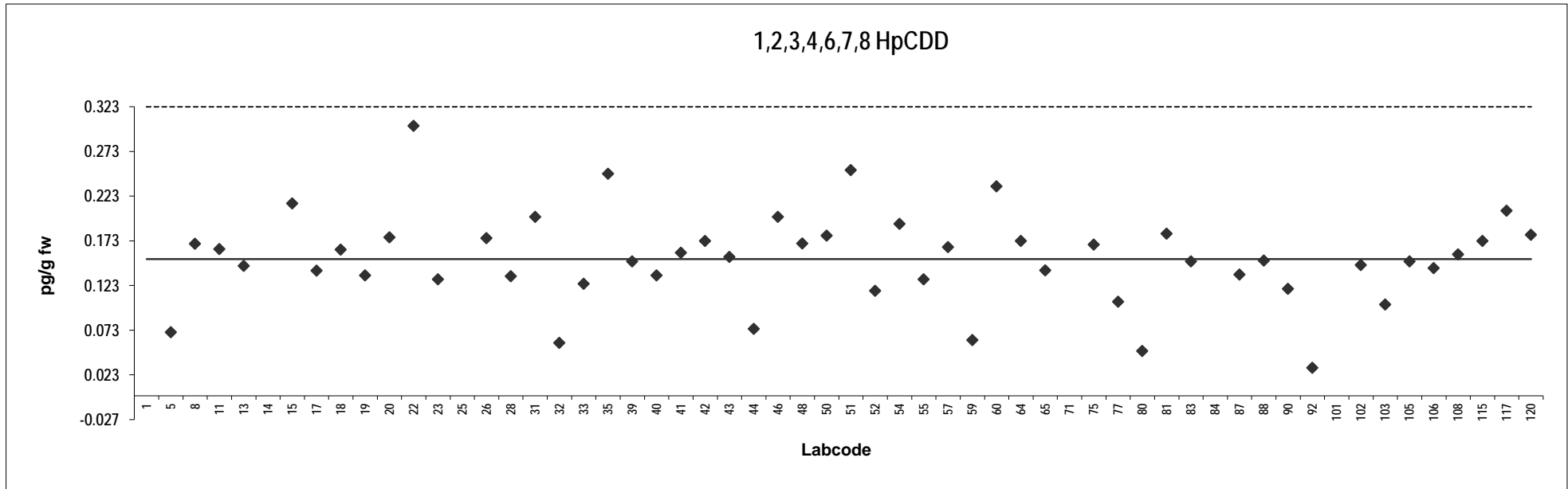
Cod liver

Congener: 1,2,3,4,6,7,8 HpCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.55	13	Outlier	87	0.14	-0.58	
5	0.071	-2.7	ND	88	0.15	-0.065	ND
8	0.17	0.55		90	0.12	-1.1	
11	0.16	0.35		92	0.031	-4.0	ND
13	0.15	-0.26		101	0.89	24	Outlier
14	0.40	8.1	Outlier,ND	102	0.15	-0.23	
15	0.22	2.0		103	0.10	-1.7	
17	0.14	-0.43		105	0.15	-0.098	
18	0.16	0.34		106	0.14	-0.34	
19	0.13	-0.61		108	0.16	0.16	
20	0.18	0.78		115	0.17	0.65	
22	0.30	4.9		117	0.21	1.8	
23	0.13	-0.75		120	0.18	0.88	
25	1.5	44	Outlier				
26	0.18	0.75					
28	0.13	-0.64					
31	0.20	1.5					
32	0.059	-3.1					
33	0.13	-0.92					
35	0.25	3.1					
39	0.15	-0.098					
40	0.13	-0.60					
41	0.16	0.23					
42	0.17	0.65					
43	0.16	0.065					
44	0.075	-2.6	ND				
46	0.20	1.5	ND				
48	0.17	0.57					
50	0.18	0.85					
51	0.25	3.2	ND				
52	0.12	-1.2					
54	0.19	1.3					
55	0.13	-0.75					
57	0.17	0.42					
59	0.062	-3.0	ND				
60	0.23	2.7					
64	0.17	0.65					
65	0.14	-0.42					
71	0.34	6.1	Outlier				
75	0.17	0.52					
77	0.11	-1.6					
80	0.050	-3.4	ND				
81	0.18	0.92					
83	0.15	-0.098					
84	0.34	6.1	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.15
Median all values pg/g	0.16
Consensus mean, pg/g	0.15
Standard deviation, pg/g	0.051
Relative standard deviation, %	33
No. of values reported	58
No. of values removed	6
No. of reported non-detects	10

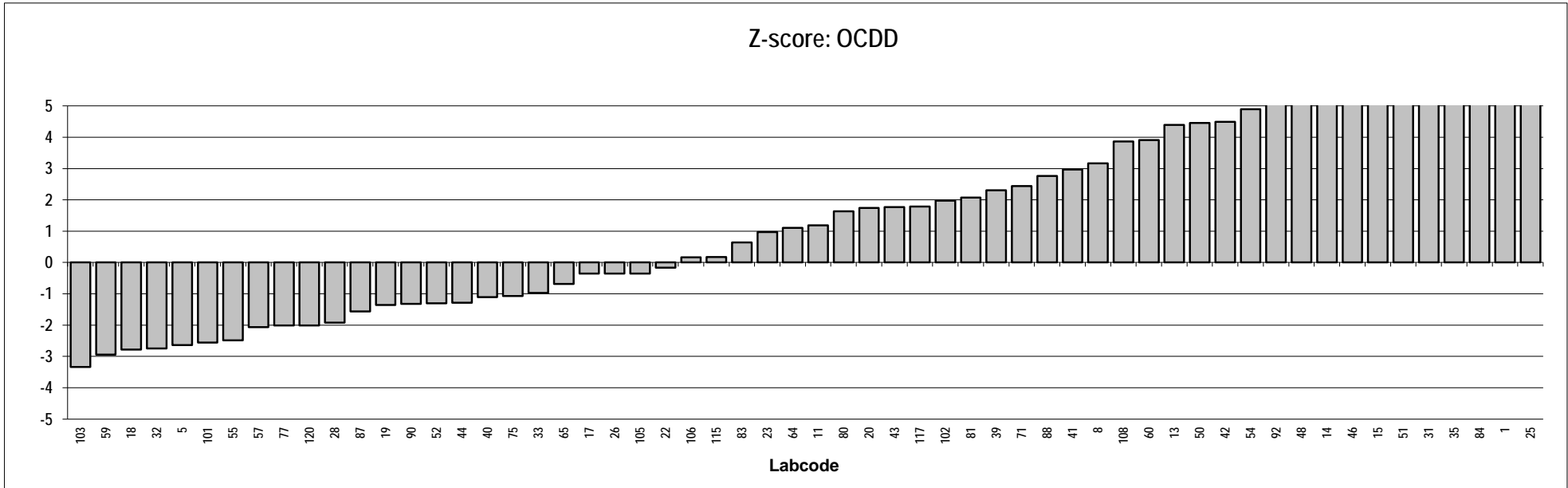
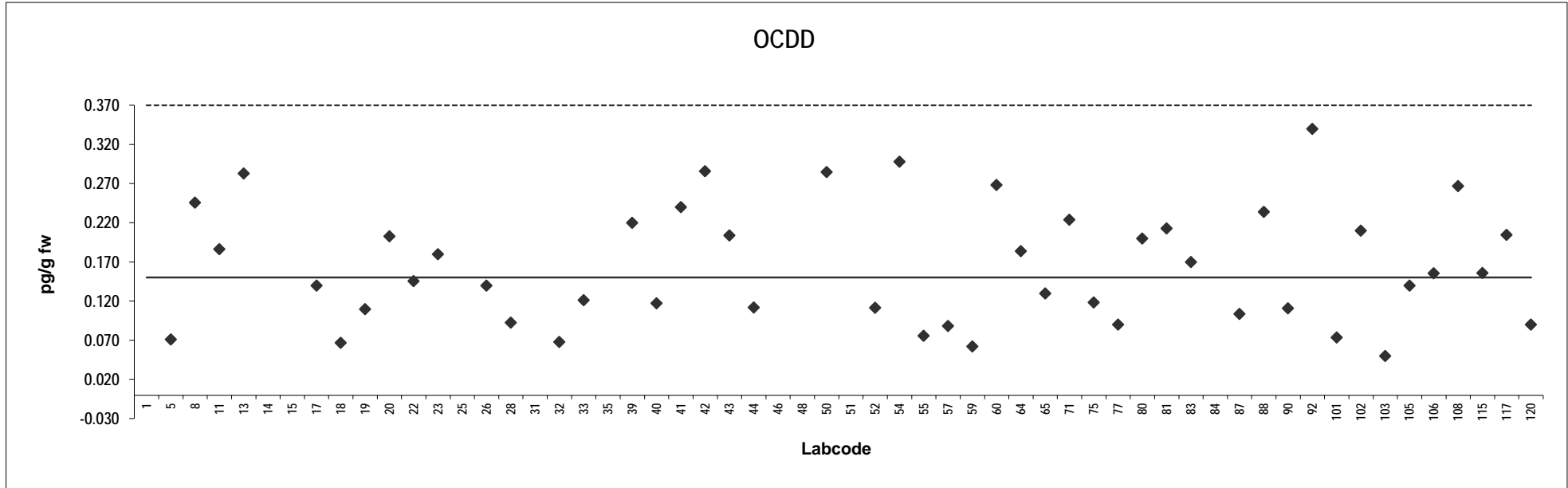


Cod liver
Congener: OCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1.1	32	Outlier	87	0.10	-1.6	
5	0.071	-2.6	ND	88	0.23	2.8	
8	0.25	3.2		90	0.11	-1.3	
11	0.19	1.2		92	0.34	6.3	ND
13	0.28	4.4		101	0.074	-2.6	ND
14	0.40	8.3	Outlier,ND	102	0.21	2.0	
15	0.43	9.3	Outlier	103	0.050	-3.3	ND
17	0.14	-0.35		105	0.14	-0.35	
18	0.067	-2.8		106	0.16	0.16	
19	0.11	-1.4		108	0.27	3.9	
20	0.20	1.7		115	0.16	0.18	
22	0.15	-0.16	ND	117	0.20	1.8	
23	0.18	0.98	ND	120	0.090	-2.0	
25	3.6	115	Outlier				
26	0.14	-0.35					
28	0.093	-1.9					
31	0.56	14	Outlier,ND				
32	0.068	-2.7					
33	0.12	-0.97					
35	0.57	14	Outlier				
39	0.22	2.3					
40	0.12	-1.1					
41	0.24	3.0					
42	0.29	4.5					
43	0.20	1.8					
44	0.11	-1.3					
46	0.40	8.3	Outlier,ND				
48	0.40	8.3	Outlier				
50	0.29	4.5					
51	0.50	12	Outlier,ND				
52	0.11	-1.3					
54	0.30	4.9					
55	0.076	-2.5					
57	0.088	-2.1					
59	0.062	-2.9	ND				
60	0.27	3.9					
64	0.18	1.1					
65	0.13	-0.68					
71	0.22	2.4					
75	0.12	-1.1					
77	0.090	-2.0					
80	0.20	1.6					
81	0.21	2.1					
83	0.17	0.64					
84	1.0	29	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.15
Median all values pg/g	0.19
Consensus mean, pg/g	0.16
Standard deviation, pg/g	0.075
Relative standard deviation, %	46
No. of values reported	58
No. of values removed	10
No. of reported non-detects	12



Cod liver

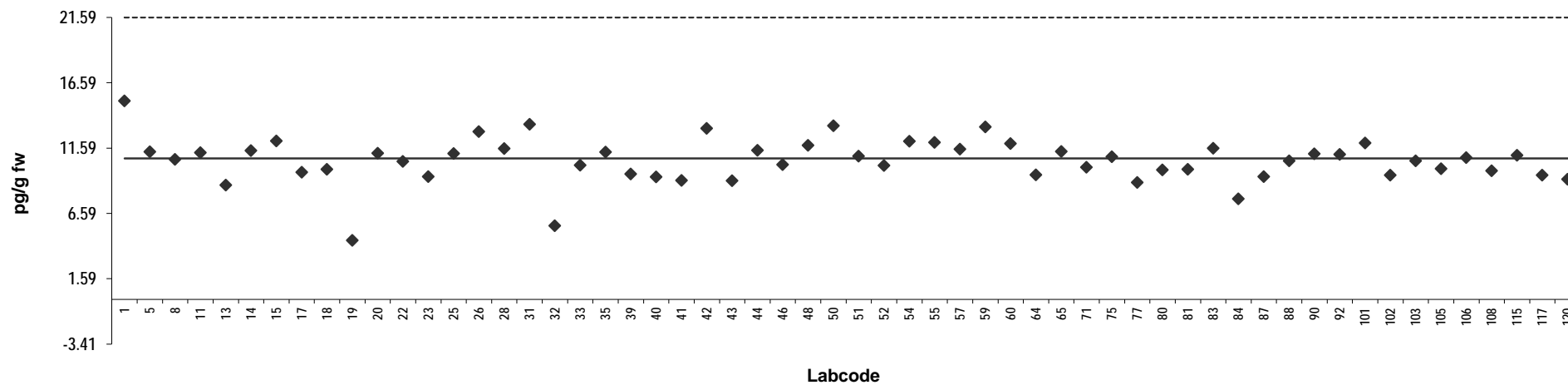
Congener: 2,3,7,8 TCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	15	2.0		87	9.4	-0.65	
5	11	0.23		88	11	-0.090	
8	11	-0.033		90	11	0.17	
11	11	0.21		92	11	0.14	
13	8.8	-0.94		101	12	0.54	
14	11	0.28		102	9.5	-0.60	
15	12	0.62		103	11	-0.082	
17	9.7	-0.49		105	10	-0.37	
18	10	-0.38		106	11	0.033	
19	4.5	-2.9		108	9.8	-0.44	
20	11	0.19		115	11	0.11	
22	11	-0.11		117	9.5	-0.59	
23	9.4	-0.65		120	9.2	-0.73	
25	11	0.18					
26	13	0.95					
28	12	0.35					
31	13	1.2					
32	5.6	-2.4					
33	10	-0.24					
35	11	0.23					
39	9.6	-0.55					
40	9.4	-0.65					
41	9.1	-0.79					
42	13	1.1					
43	9.1	-0.79					
44	11	0.28					
46	10	-0.22					
48	12	0.46					
50	13	1.2					
51	11	0.076					
52	10	-0.25					
54	12	0.60					
55	12	0.57					
57	12	0.33					
59	13	1.1					
60	12	0.53					
64	9.5	-0.58					
65	11	0.24					
71	10	-0.32					
75	11	0.06					
77	9.0	-0.85					
80	9.9	-0.41					
81	10	-0.38					
83	12	0.36					
84	7.7	-1.4					

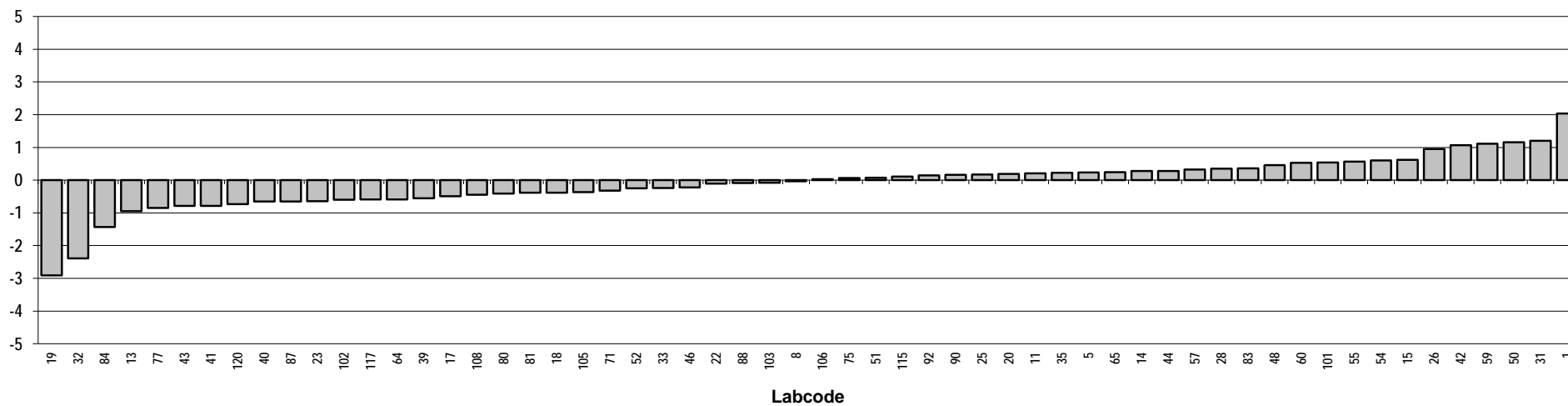
Consensus statistics

Consensus median, pg/g	11
Median all values pg/g	11
Consensus mean, pg/g	11
Standard deviation, pg/g	1.7
Relative standard deviation, %	16
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

2,3,7,8 TCDF



Z-score: 2,3,7,8 TCDF

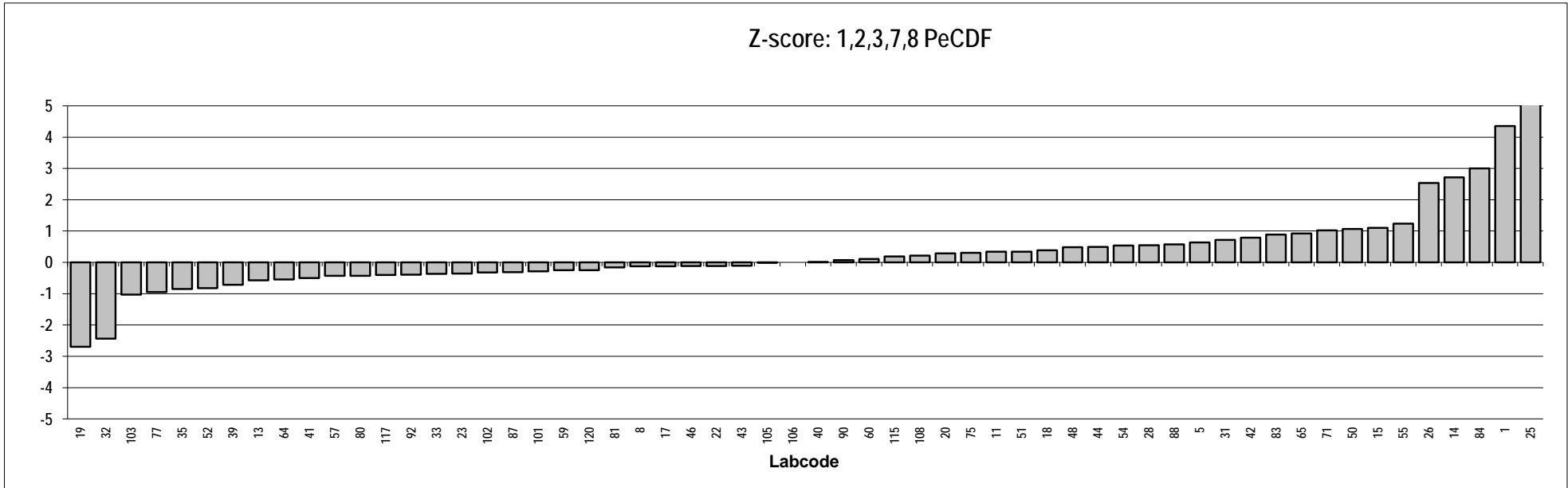
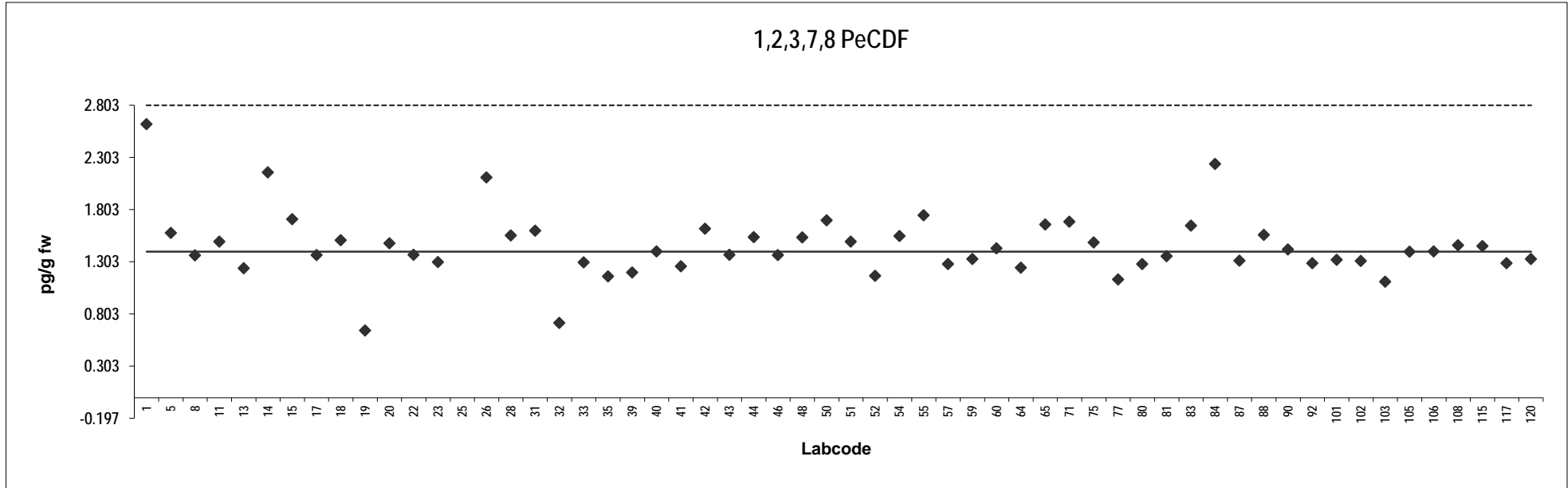


Cod liver
Congener: 1,2,3,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2.6	4.4		87	1.3	-0.31	
5	1.6	0.64		88	1.6	0.57	
8	1.4	-0.13		90	1.4	0.072	
11	1.5	0.34		92	1.3	-0.39	
13	1.2	-0.57		101	1.3	-0.29	
14	2.2	2.7		102	1.3	-0.32	
15	1.7	1.1		103	1.1	-1.0	
17	1.4	-0.12		105	1.4	-0.0011	
18	1.5	0.39		106	1.4	0.00	
19	0.65	-2.7		108	1.5	0.21	
20	1.5	0.28		115	1.5	0.19	
22	1.4	-0.11		117	1.3	-0.40	
23	1.3	-0.36		120	1.3	-0.25	
25	3.1	6.1	Outlier				
26	2.1	2.5					
28	1.6	0.55					
31	1.6	0.71					
32	0.72	-2.4					
33	1.3	-0.37					
35	1.2	-0.85					
39	1.2	-0.72					
40	1.4	0.0071					
41	1.3	-0.50					
42	1.6	0.78					
43	1.4	-0.11					
44	1.5	0.49					
46	1.4	-0.12					
48	1.5	0.49					
50	1.7	1.1					
51	1.5	0.34					
52	1.2	-0.83					
54	1.6	0.53					
55	1.7	1.2					
57	1.3	-0.43					
59	1.3	-0.25					
60	1.4	0.11					
64	1.2	-0.55					
65	1.7	0.93					
71	1.7	1.0					
75	1.5	0.31					
77	1.1	-0.95					
80	1.3	-0.43					
81	1.4	-0.16					
83	1.7	0.89					
84	2.2	3.0					

Consensus statistics

Consensus median, pg/g	1.4
Median all values pg/g	1.4
Consensus mean, pg/g	1.5
Standard deviation, pg/g	0.31
Relative standard deviation, %	22
No. of values reported	58
No. of values removed	1
No. of reported non-detects	0

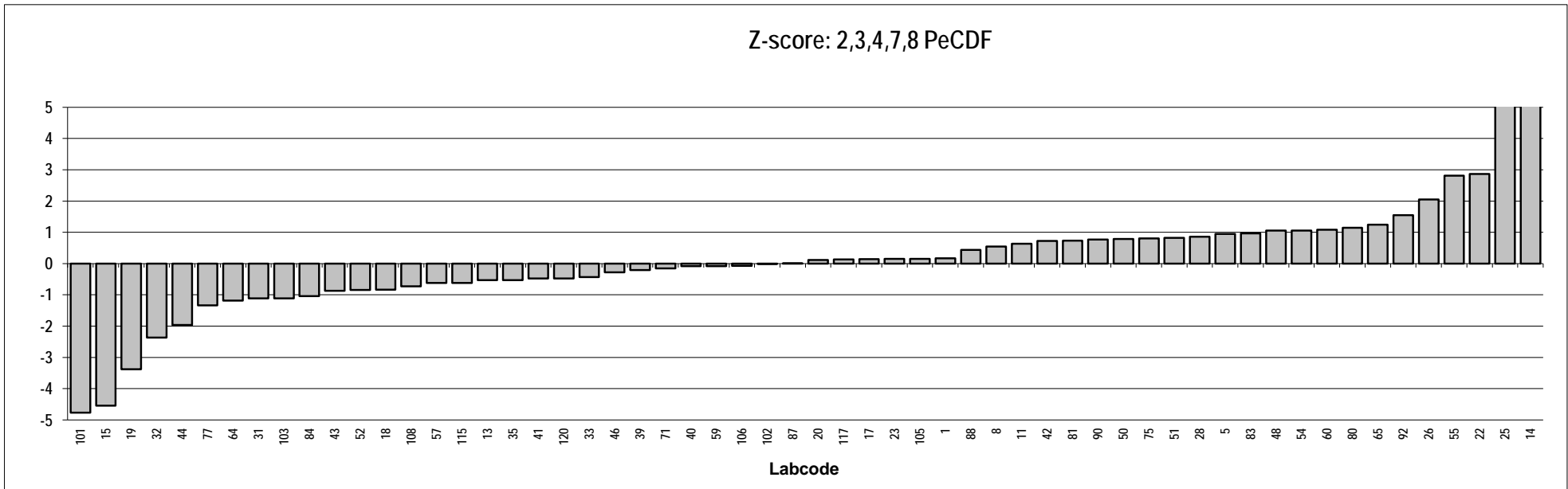
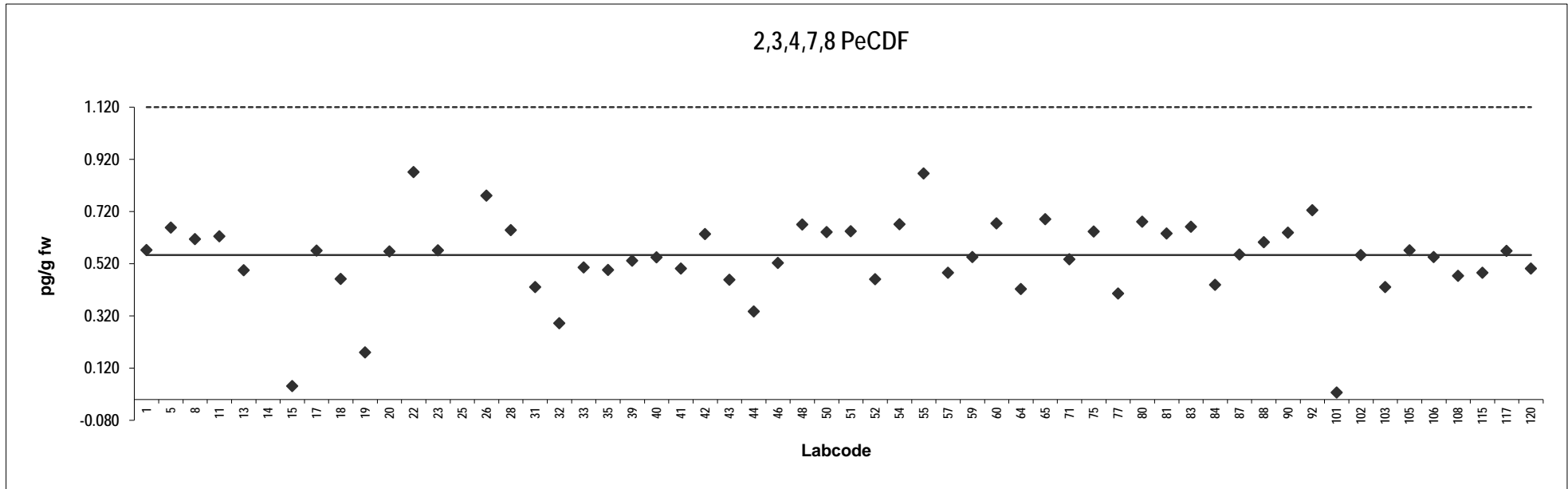


Cod liver
Congener: 2,3,4,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.57	0.17		87	0.55	0.0086	
5	0.66	0.95		88	0.60	0.43	
8	0.61	0.54		90	0.64	0.77	
11	0.62	0.64		92	0.72	1.5	
13	0.49	-0.53		101	0.026	-4.8	ND
14	2.3	16	Outlier	102	0.55	-0.0086	
15	0.050	-4.5	ND	103	0.43	-1.1	
17	0.57	0.15		105	0.57	0.15	
18	0.46	-0.83		106	0.54	-0.076	
19	0.18	-3.4		108	0.47	-0.72	
20	0.57	0.12		115	0.48	-0.62	
22	0.87	2.9		117	0.57	0.13	
23	0.57	0.15		120	0.50	-0.48	
25	2.2	15	Outlier				
26	0.78	2.1					
28	0.65	0.86					
31	0.43	-1.1					
32	0.29	-2.4					
33	0.51	-0.43					
35	0.49	-0.53					
39	0.53	-0.21					
40	0.54	-0.083					
41	0.50	-0.48					
42	0.63	0.72					
43	0.46	-0.87					
44	0.34	-2.0					
46	0.52	-0.28					
48	0.67	1.1					
50	0.64	0.79					
51	0.64	0.82					
52	0.46	-0.84					
54	0.67	1.1					
55	0.86	2.8					
57	0.48	-0.62					
59	0.54	-0.081					
60	0.67	1.1					
64	0.42	-1.2					
65	0.69	1.2					
71	0.54	-0.15					
75	0.64	0.80					
77	0.41	-1.3					
80	0.68	1.1					
81	0.63	0.74					
83	0.66	0.97					
84	0.44	-1.0					

Consensus statistics

Consensus median, pg/g	0.55
Median all values pg/g	0.56
Consensus mean, pg/g	0.54
Standard deviation, pg/g	0.16
Relative standard deviation, %	29
No. of values reported	58
No. of values removed	2
No. of reported non-detects	2

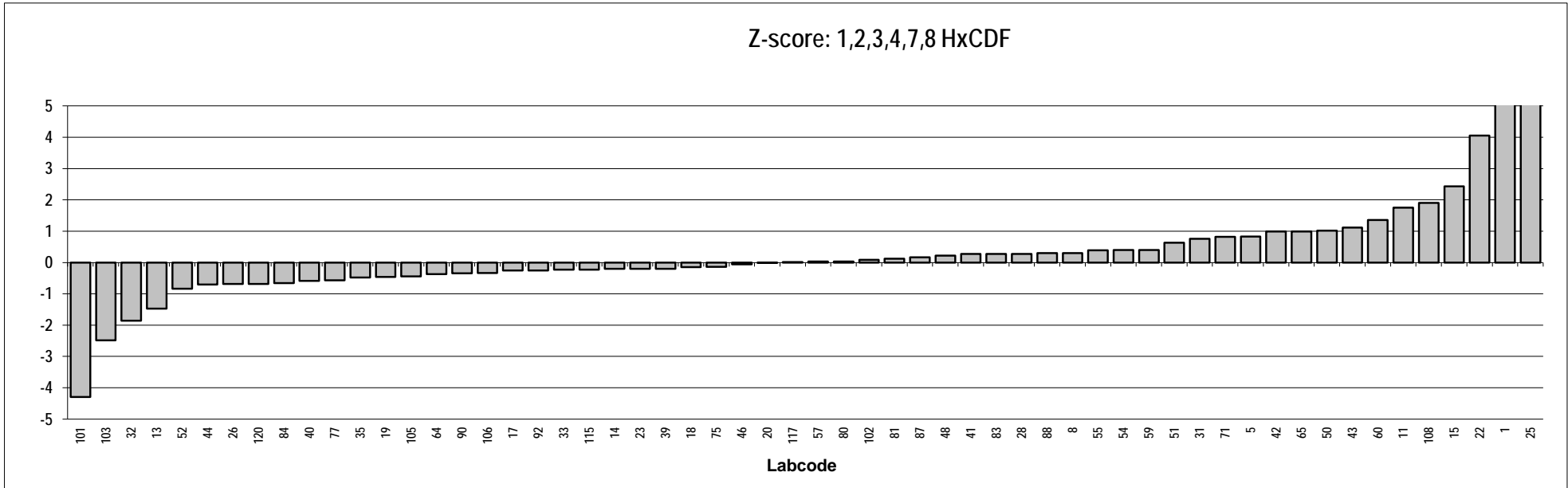
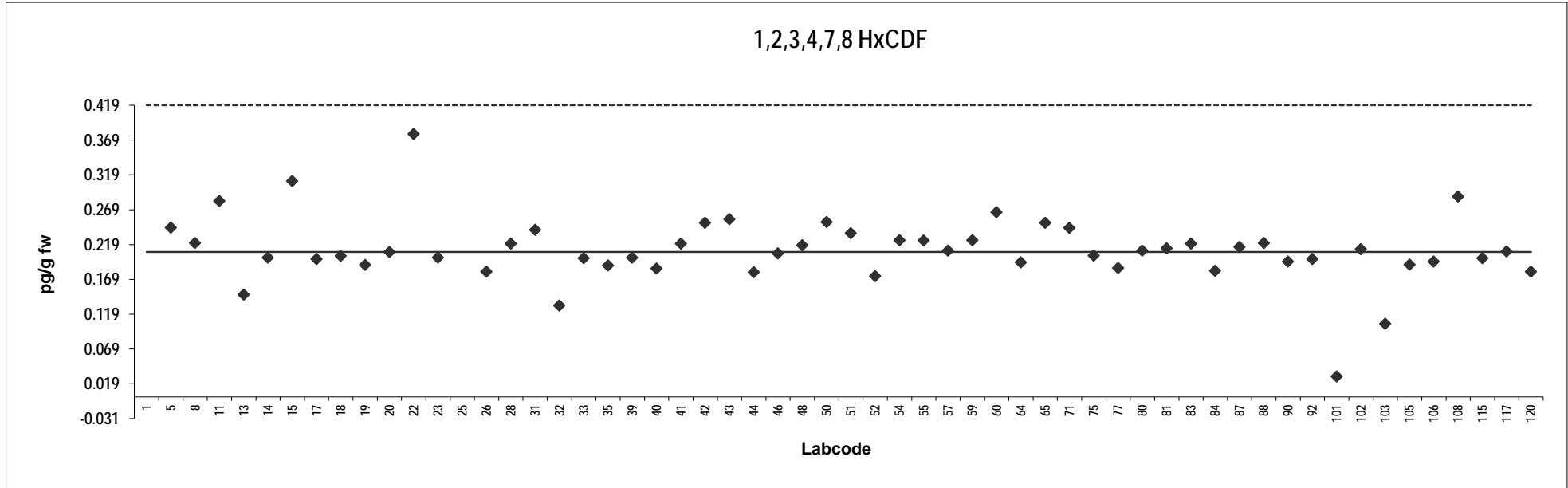


Cod liver
Congener: 1,2,3,4,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.50	7.1	Outlier	87	0.22	0.17	
5	0.24	0.83		88	0.22	0.30	
8	0.22	0.30		90	0.19	-0.34	
11	0.28	1.7		92	0.20	-0.25	
13	0.15	-1.5		101	0.029	-4.3	ND
14	0.20	-0.20	ND	102	0.21	0.084	
15	0.31	2.4		103	0.11	-2.5	
17	0.20	-0.26		105	0.19	-0.44	
18	0.20	-0.14		106	0.19	-0.34	
19	0.19	-0.46		108	0.29	1.9	
20	0.21	-0.012		115	0.20	-0.23	
22	0.38	4.1		117	0.21	0.012	
23	0.20	-0.20		120	0.18	-0.68	
25	1.8	39	Outlier				
26	0.18	-0.68					
28	0.22	0.28					
31	0.24	0.76					
32	0.13	-1.9					
33	0.20	-0.23					
35	0.19	-0.48					
39	0.20	-0.20					
40	0.18	-0.58					
41	0.22	0.28					
42	0.25	0.99					
43	0.26	1.1					
44	0.18	-0.70					
46	0.21	-0.060					
48	0.22	0.22					
50	0.25	1.0					
51	0.23	0.63					
52	0.17	-0.84					
54	0.23	0.40					
55	0.22	0.39					
57	0.21	0.036					
59	0.23	0.40					
60	0.27	1.4					
64	0.19	-0.37					
65	0.25	0.99					
71	0.24	0.82					
75	0.20	-0.14					
77	0.19	-0.56					
80	0.21	0.036					
81	0.21	0.12					
83	0.22	0.28					
84	0.18	-0.66					

Consensus statistics

Consensus median, pg/g	0.21
Median all values pg/g	0.21
Consensus mean, pg/g	0.21
Standard deviation, pg/g	0.048
Relative standard deviation, %	23
No. of values reported	58
No. of values removed	2
No. of reported non-detects	2

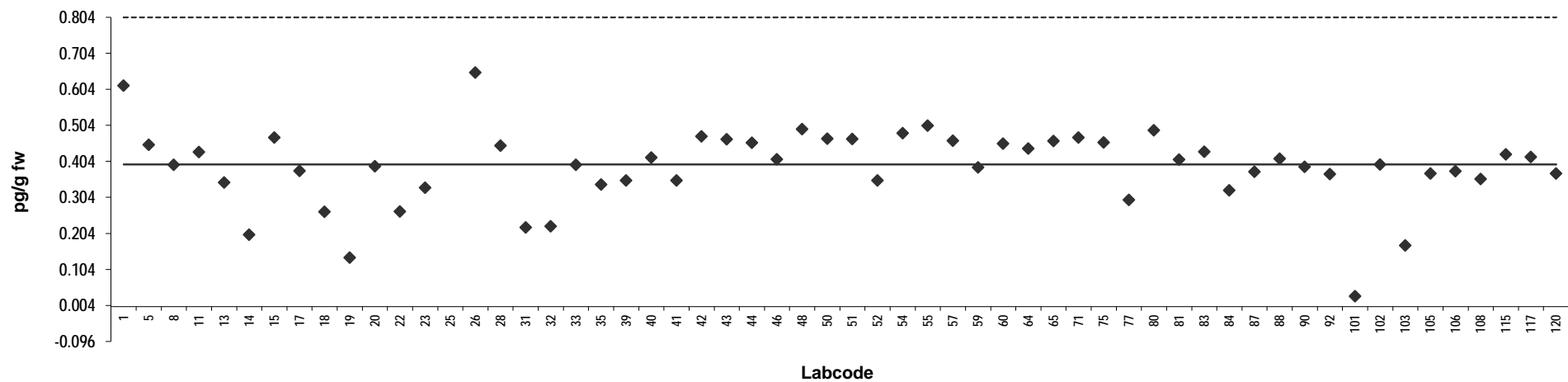


Cod liver
Congener: 1,2,3,6,7,8 HxCDF

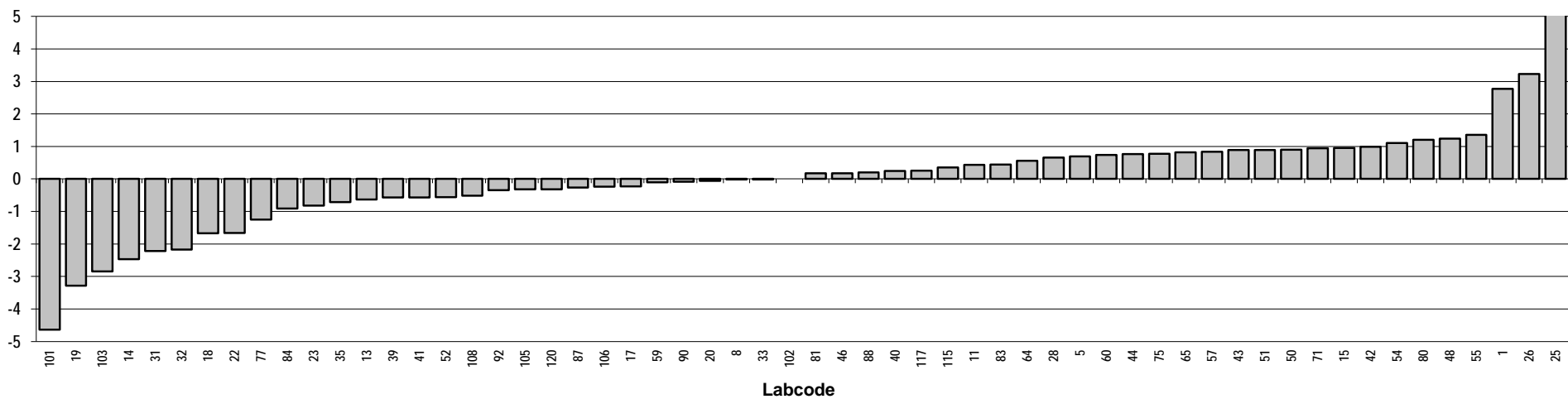
Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.61	2.8		87	0.37	-0.26	
5	0.45	0.69		88	0.41	0.20	
8	0.39	-0.014		90	0.39	-0.088	
11	0.43	0.43		92	0.37	-0.34	
13	0.35	-0.63		101	0.029	-4.6	ND
14	0.20	-2.5	ND	102	0.40	0.00	
15	0.47	0.95		103	0.17	-2.8	
17	0.38	-0.23		105	0.37	-0.32	
18	0.26	-1.7		106	0.38	-0.24	
19	0.14	-3.3		108	0.35	-0.52	
20	0.39	-0.063		115	0.42	0.35	
22	0.26	-1.7		117	0.42	0.26	
23	0.33	-0.82		120	0.37	-0.32	
25	2.3	25	Outlier				
26	0.65	3.2					
28	0.45	0.66					
31	0.22	-2.2					
32	0.22	-2.2					
33	0.39	-0.013					
35	0.34	-0.71					
39	0.35	-0.57					
40	0.41	0.24					
41	0.35	-0.57					
42	0.47	0.99					
43	0.47	0.89					
44	0.46	0.76					
46	0.41	0.18					
48	0.49	1.2					
50	0.47	0.90					
51	0.47	0.89					
52	0.35	-0.56					
54	0.48	1.1					
55	0.50	1.4					
57	0.46	0.84					
59	0.39	-0.10					
60	0.45	0.74					
64	0.44	0.56					
65	0.46	0.82					
71	0.47	0.94					
75	0.46	0.77					
77	0.30	-1.3					
80	0.49	1.2					
81	0.41	0.17					
83	0.43	0.44					
84	0.32	-0.91					

Consensus statistics	
Consensus median, pg/g	0.40
Median all values pg/g	0.40
Consensus mean, pg/g	0.39
Standard deviation, pg/g	0.11
Relative standard deviation, %	27
No. of values reported	58
No. of values removed	1
No. of reported non-detects	2

1,2,3,6,7,8 HxCDF



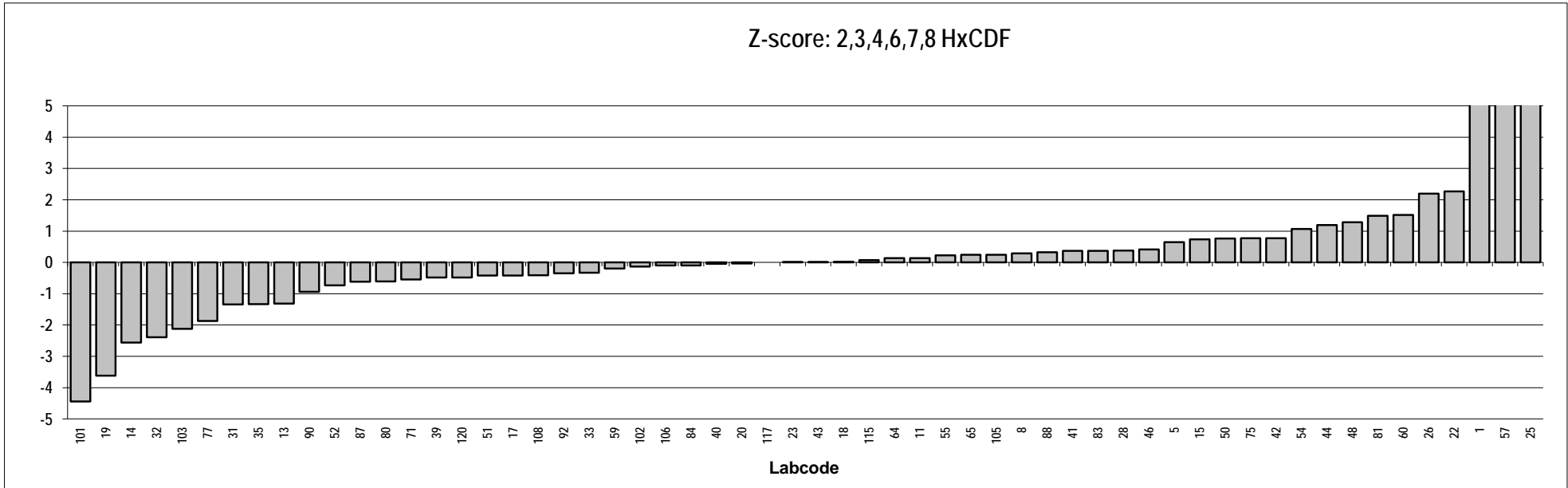
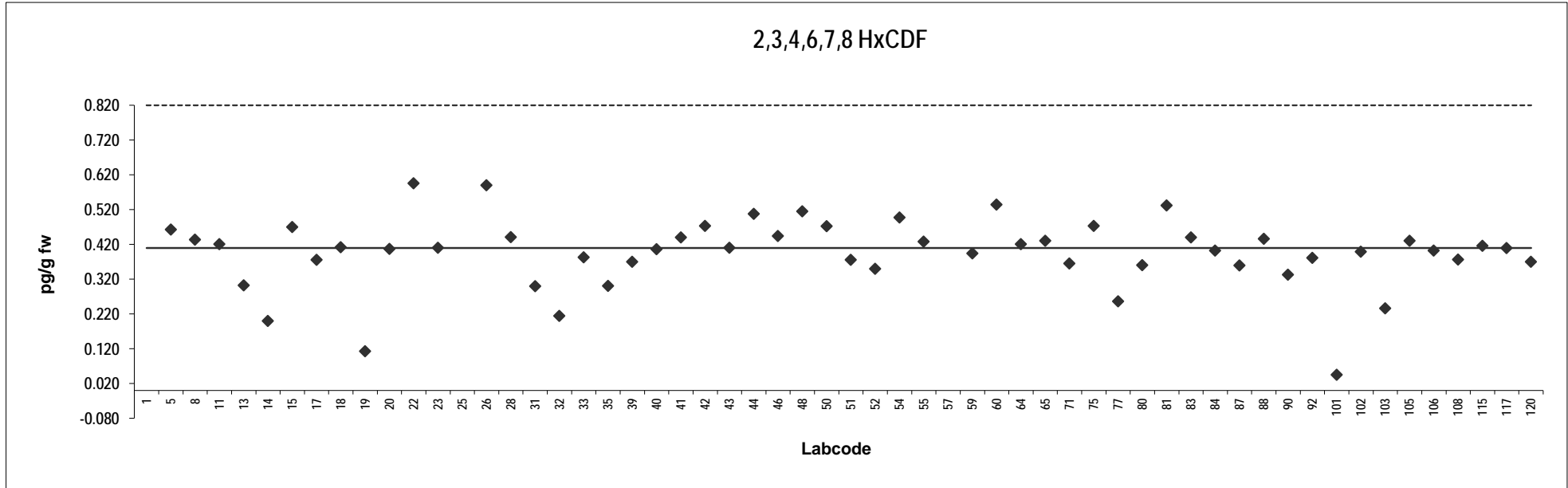
Z-score: 1,2,3,6,7,8 HxCDF



Cod liver
Congener: 2,3,4,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.83	5.1	Outlier	87	0.36	-0.62	
5	0.46	0.64		88	0.44	0.32	
8	0.43	0.29		90	0.33	-0.94	
11	0.42	0.14		92	0.38	-0.35	
13	0.30	-1.3		101	0.045	-4.4	ND
14	0.20	-2.6	ND	102	0.40	-0.13	
15	0.47	0.74		103	0.24	-2.1	
17	0.38	-0.42		105	0.43	0.25	
18	0.41	0.024		106	0.40	-0.095	
19	0.11	-3.6		108	0.38	-0.41	
20	0.41	-0.034		115	0.42	0.076	
22	0.60	2.3		117	0.41	0.00	
23	0.41	0.0029		120	0.37	-0.49	
25	2.8	29	Outlier				
26	0.59	2.2					
28	0.44	0.38					
31	0.30	-1.3					
32	0.21	-2.4					
33	0.38	-0.33					
35	0.30	-1.3					
39	0.37	-0.49					
40	0.41	-0.043					
41	0.44	0.37					
42	0.47	0.77					
43	0.41	0.0029					
44	0.51	1.2					
46	0.44	0.42					
48	0.51	1.3					
50	0.47	0.76					
51	0.38	-0.42					
52	0.35	-0.74					
54	0.50	1.1					
55	0.43	0.22					
57	0.90	5.9	Outlier				
59	0.39	-0.19					
60	0.53	1.5					
64	0.42	0.14					
65	0.43	0.25					
71	0.36	-0.55					
75	0.47	0.77					
77	0.26	-1.9					
80	0.36	-0.61					
81	0.53	1.5					
83	0.44	0.37					
84	0.40	-0.095					

Consensus statistics	
Consensus median, pg/g	0.41
Median all values pg/g	0.41
Consensus mean, pg/g	0.39
Standard deviation, pg/g	0.10
Relative standard deviation, %	26
No. of values reported	58
No. of values removed	3
No. of reported non-detects	2



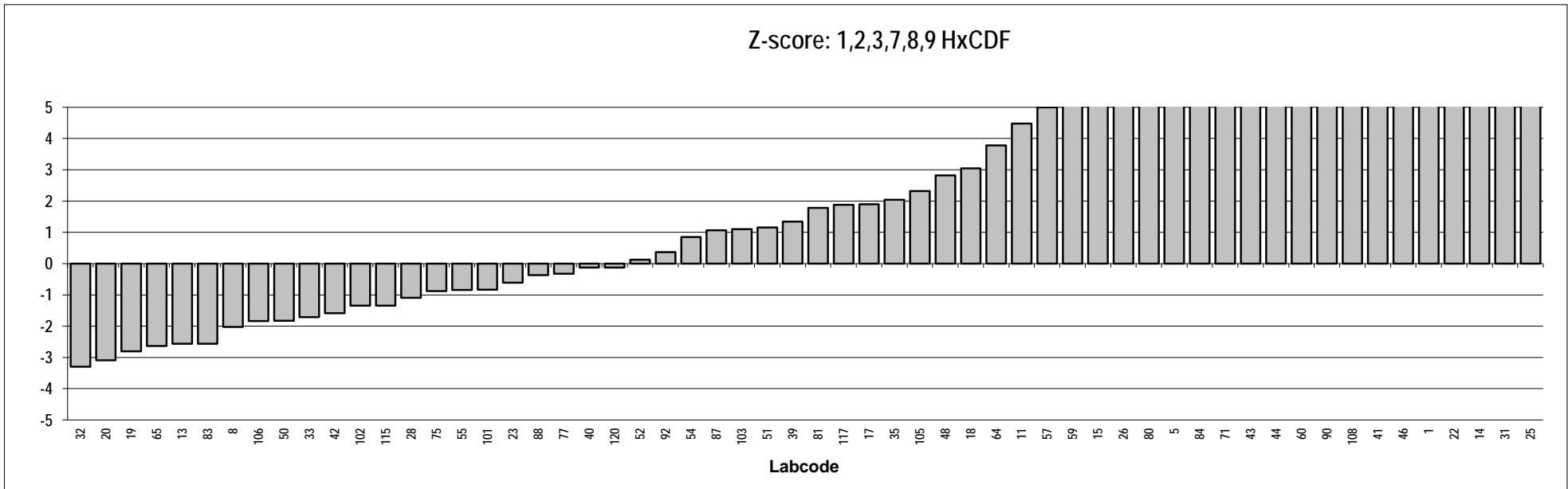
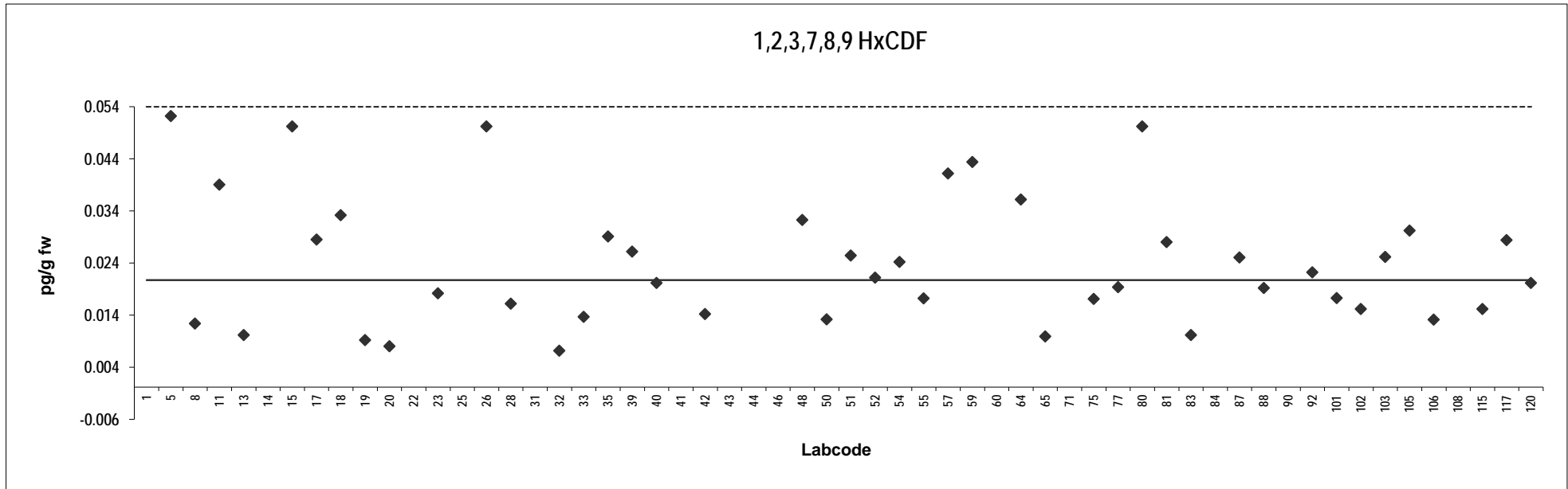
Cod liver

Congener: 1,2,3,7,8,9 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.14	28	Outlier,ND	87	0.025	1.1	
5	0.052	7.7	ND	88	0.019	-0.37	ND
8	0.012	-2.0	ND	90	0.089	17	Outlier
11	0.039	4.5	ND	92	0.022	0.37	ND
13	0.010	-2.6	ND	101	0.017	-0.83	ND
14	0.20	44	Outlier,ND	102	0.015	-1.3	ND
15	0.050	7.2	ND	103	0.025	1.1	ND
17	0.028	1.9		105	0.030	2.3	
18	0.033	3.0	ND	106	0.013	-1.8	
19	0.0090	-2.8		108	0.096	18	Outlier
20	0.0078	-3.1		115	0.015	-1.3	
22	0.19	41	Outlier	117	0.028	1.9	
23	0.018	-0.61	ND	120	0.020	-0.12	ND
25	5.4	1322	Outlier				
26	0.050	7.2	ND				
28	0.016	-1.1					
31	0.43	100	Outlier,ND				
32	0.0070	-3.3	ND				
33	0.014	-1.7					
35	0.029	2.0	ND				
39	0.026	1.3	ND				
40	0.020	-0.12	ND				
41	0.10	19	Outlier,ND				
42	0.014	-1.6					
43	0.066	11	Outlier				
44	0.075	13	Outlier,ND				
46	0.10	19	Outlier,ND				
48	0.032	2.8					
50	0.013	-1.8					
51	0.025	1.2	ND				
52	0.021	0.12	ND				
54	0.024	0.85	ND				
55	0.017	-0.84	ND				
57	0.041	5.0					
59	0.043	5.5	ND				
60	0.080	15	Outlier,ND				
64	0.036	3.8	ND				
65	0.0097	-2.6					
71	0.065	11	Outlier,ND				
75	0.017	-0.88					
77	0.019	-0.32	ND				
80	0.050	7.2	ND				
81	0.028	1.8					
83	0.010	-2.6	ND				
84	0.061	9.9	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.021
Median all values pg/g	0.027
Consensus mean, pg/g	0.024
Standard deviation, pg/g	0.012
Relative standard deviation, %	52
No. of values reported	58
No. of values removed	14
No. of reported non-detects	36

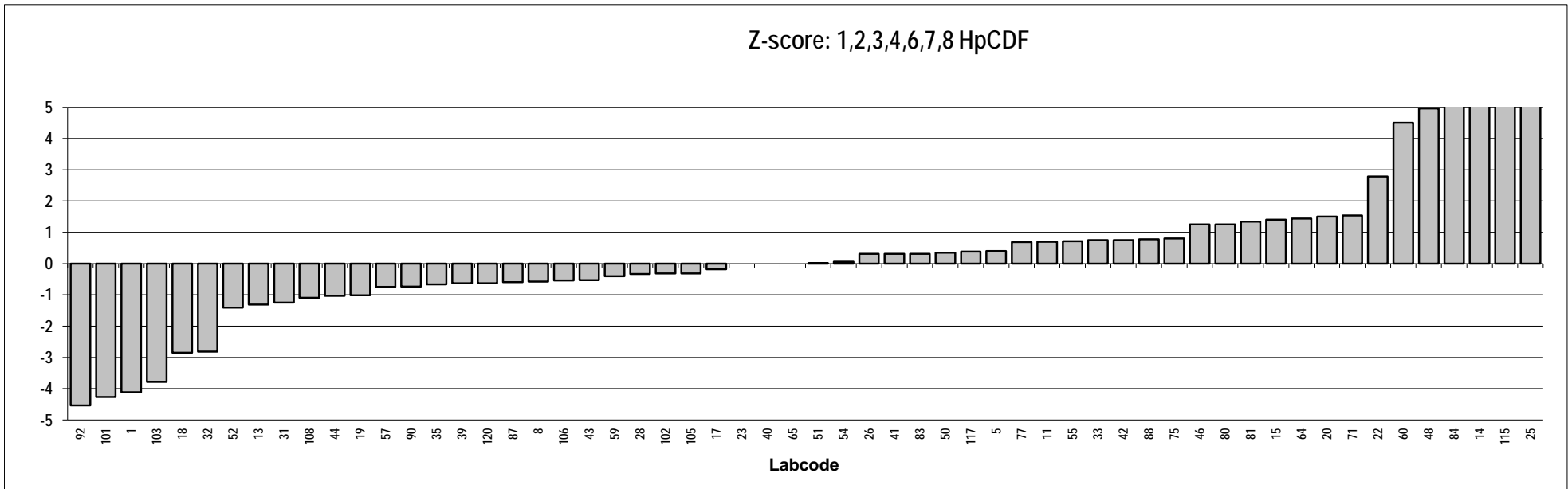
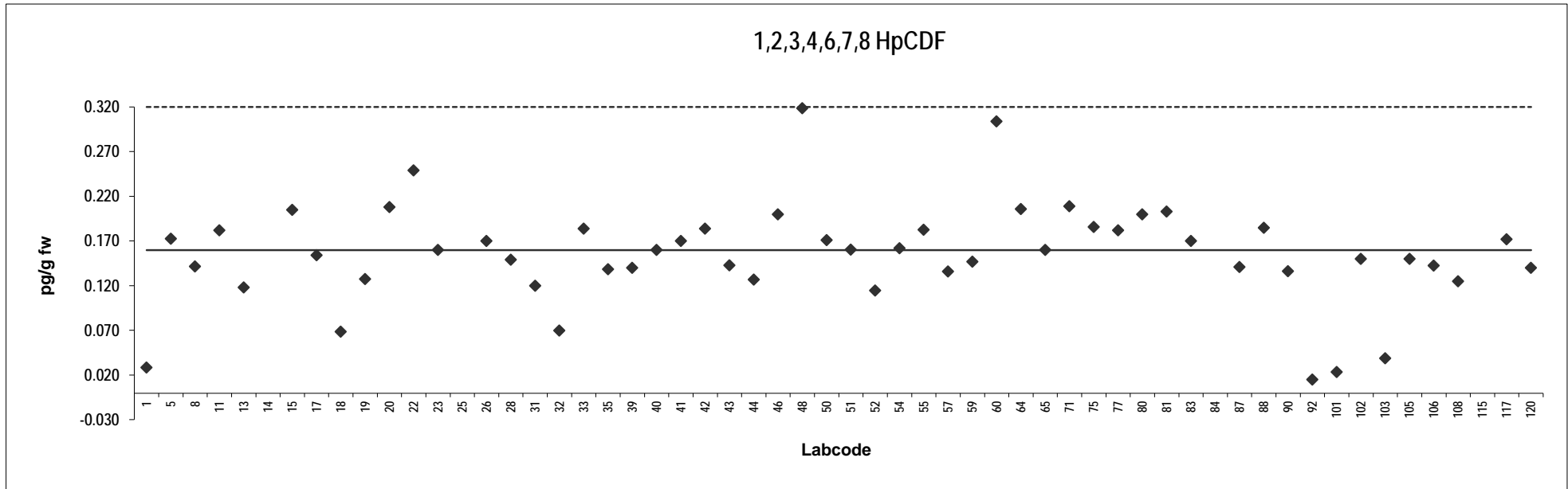


Cod liver
Congener: 1,2,3,4,6,7,8 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.028	-4.1		87	0.14	-0.60	
5	0.17	0.40		88	0.19	0.78	
8	0.14	-0.57		90	0.14	-0.74	
11	0.18	0.69		92	0.015	-4.5	ND
13	0.12	-1.3		101	0.024	-4.3	ND
14	0.40	7.5	Outlier,ND	102	0.15	-0.31	
15	0.21	1.4		103	0.039	-3.8	
17	0.15	-0.18		105	0.15	-0.31	
18	0.069	-2.9		106	0.14	-0.54	
19	0.13	-1.0		108	0.13	-1.1	
20	0.21	1.5		115	0.74	18	Outlier
22	0.25	2.8		117	0.17	0.38	
23	0.16	0.00		120	0.14	-0.63	
25	1.1	28	Outlier				
26	0.17	0.31					
28	0.15	-0.33					
31	0.12	-1.3					
32	0.070	-2.8					
33	0.18	0.75					
35	0.14	-0.67					
39	0.14	-0.63					
40	0.16	0.00					
41	0.17	0.31					
42	0.18	0.75					
43	0.14	-0.53					
44	0.13	-1.0					
46	0.20	1.3	ND				
48	0.32	5.0					
50	0.17	0.34					
51	0.16	0.014					
52	0.11	-1.4					
54	0.16	0.063					
55	0.18	0.71					
57	0.14	-0.75					
59	0.15	-0.41					
60	0.30	4.5					
64	0.21	1.4					
65	0.16	0.00					
71	0.21	1.5					
75	0.19	0.81					
77	0.18	0.69					
80	0.20	1.3					
81	0.20	1.3					
83	0.17	0.31					
84	0.34	5.7	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.16
Median all values pg/g	0.16
Consensus mean, pg/g	0.16
Standard deviation, pg/g	0.057
Relative standard deviation, %	37
No. of values reported	58
No. of values removed	4
No. of reported non-detects	5



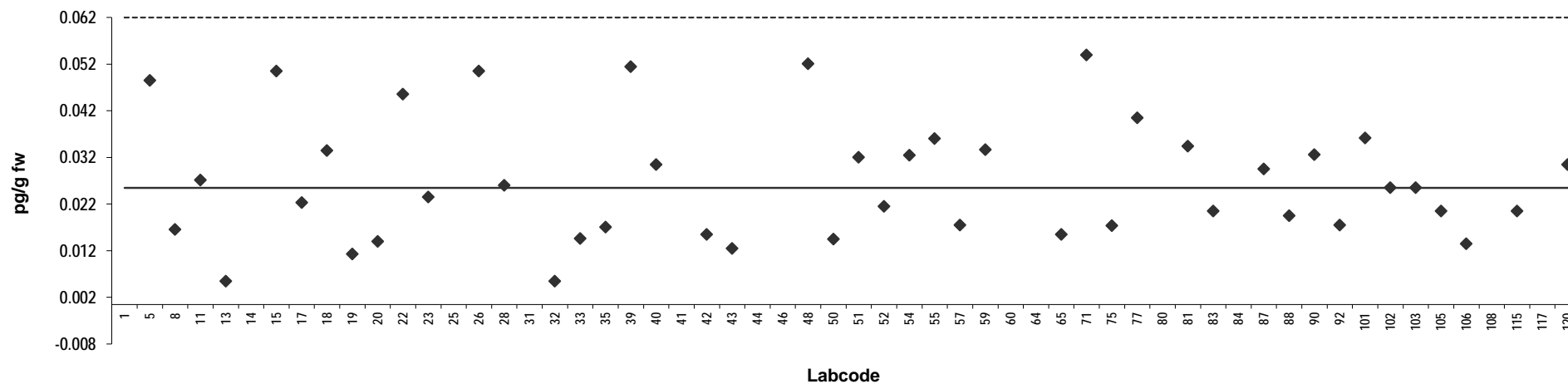
Cod liver
Congener: 1,2,3,4,7,8,9 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.14	23	Outlier,ND	87	0.029	0.80	
5	0.048	4.6	ND	88	0.019	-1.2	
8	0.016	-1.8		90	0.032	1.4	
11	0.027	0.33	ND	92	0.017	-1.6	ND
13	0.0050	-4.0	ND	101	0.036	2.1	ND
14	0.40	75	Outlier,ND	102	0.025	0.00	ND
15	0.050	5.0	ND	103	0.025	0.00	ND
17	0.022	-0.63		105	0.020	-1.0	ND
18	0.033	1.6	ND	106	0.013	-2.4	
19	0.011	-2.8		108	0.084	12	Outlier,ND
20	0.014	-2.3		115	0.020	-1.0	ND
22	0.045	4.0	ND	117	0.11	17	Outlier
23	0.023	-0.40	ND	120	0.030	1.0	ND
25	1.8	351	Outlier				
26	0.050	5.0	ND				
28	0.026	0.10					
31	0.26	47	Outlier,ND				
32	0.0050	-4.0	ND				
33	0.014	-2.2					
35	0.017	-1.7	ND				
39	0.051	5.2	ND				
40	0.030	1.0	ND				
41	0.10	15	Outlier,ND				
42	0.015	-2.0					
43	0.012	-2.6	ND				
44	0.075	9.9	Outlier,ND				
46	0.20	35	Outlier,ND				
48	0.052	5.3					
50	0.014	-2.2					
51	0.032	1.3	ND				
52	0.021	-0.80	ND				
54	0.032	1.4	ND				
55	0.036	2.1	ND				
57	0.017	-1.6	ND				
59	0.033	1.6	ND				
60	0.070	8.9	Outlier				
64	0.063	7.6	Outlier,ND				
65	0.015	-2.0					
71	0.054	5.7	ND				
75	0.017	-1.6					
77	0.040	3.0					
80	0.11	17	Outlier				
81	0.034	1.8					
83	0.020	-1.0					
84	0.093	14	Outlier,ND				

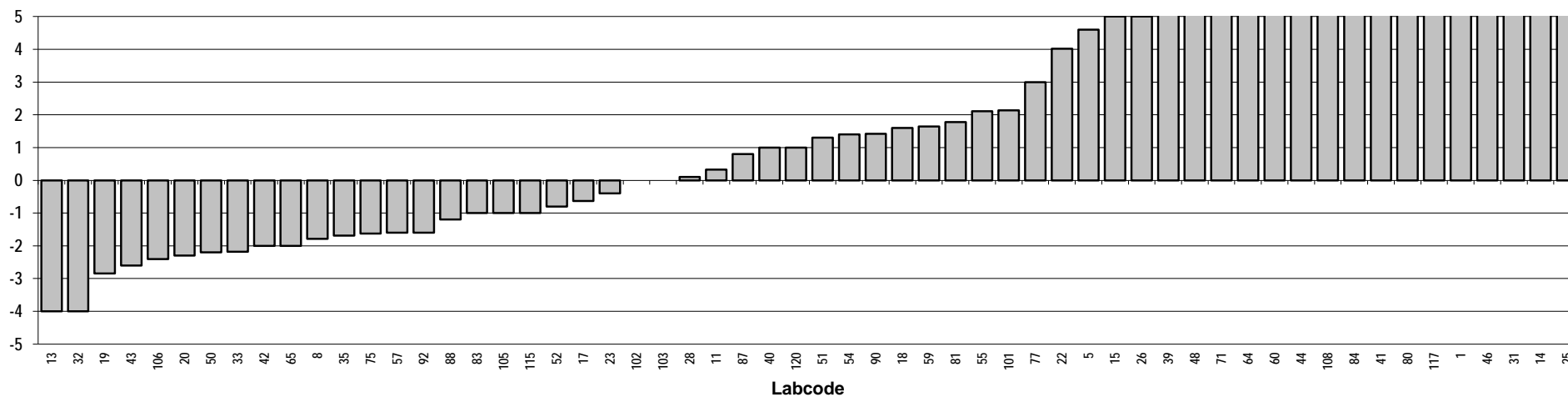
Consensus statistics

Consensus median, pg/g	0.025
Median all values pg/g	0.031
Consensus mean, pg/g	0.027
Standard deviation, pg/g	0.013
Relative standard deviation, %	49
No. of values reported	58
No. of values removed	13
No. of reported non-detects	36

1,2,3,4,7,8,9 HpCDF



Z-score: 1,2,3,4,7,8,9 HpCDF

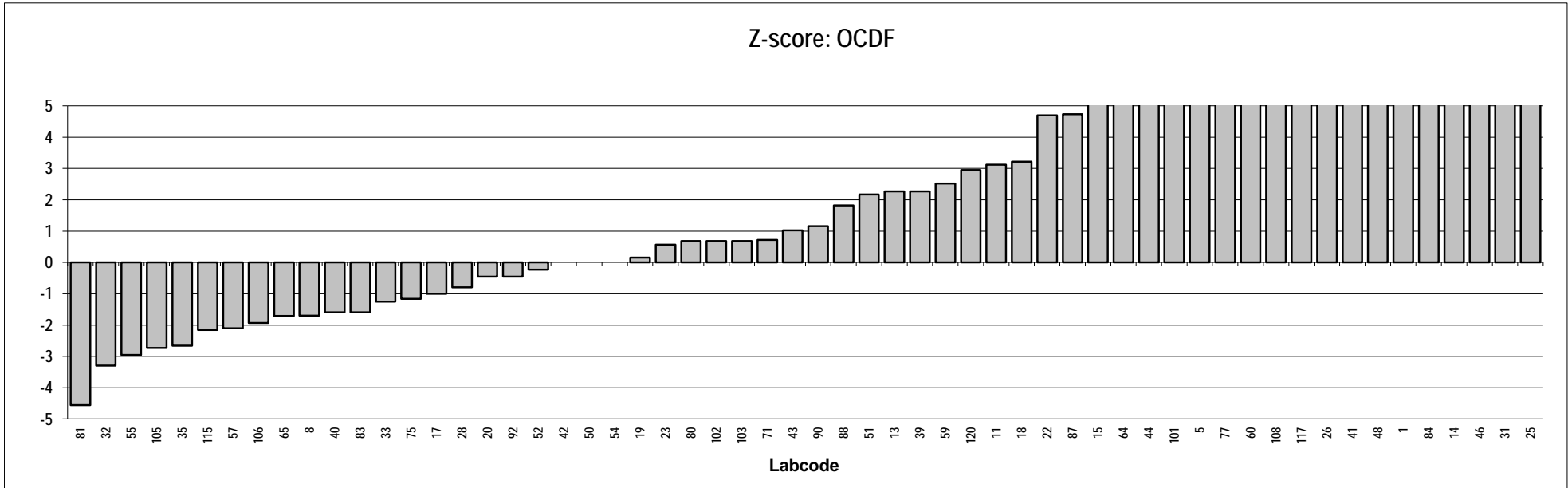
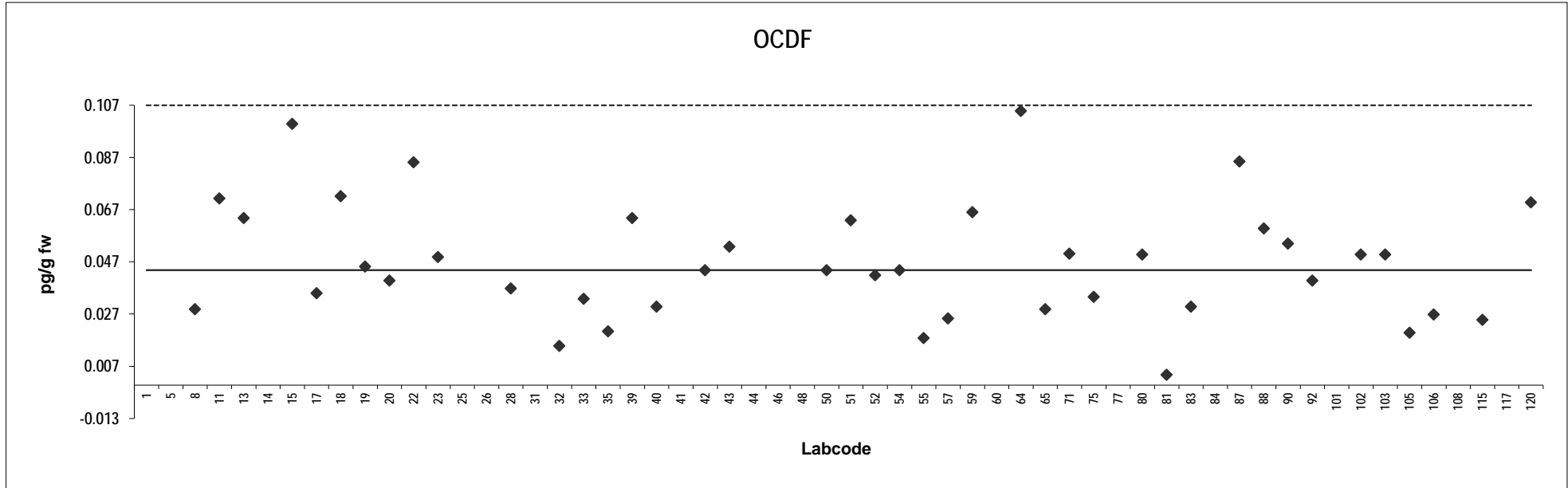


Cod liver
Congener: OCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.26	25	Outlier	87	0.086	4.7	
5	0.14	10	Outlier,ND	88	0.060	1.8	
8	0.029	-1.7		90	0.054	1.2	
11	0.071	3.1	ND	92	0.040	-0.45	ND
13	0.064	2.3		101	0.12	8.2	Outlier,ND
14	0.40	40	Outlier,ND	102	0.050	0.68	ND
15	0.10	6.4	ND	103	0.050	0.68	ND
17	0.035	-1.0		105	0.020	-2.7	
18	0.072	3.2		106	0.027	-1.9	
19	0.045	0.15		108	0.16	14	Outlier
20	0.040	-0.45		115	0.025	-2.2	
22	0.085	4.7	ND	117	0.19	16	Outlier
23	0.049	0.57		120	0.070	3.0	ND
25	3.3	370	Outlier				
26	0.20	18	Outlier,ND				
28	0.037	-0.80					
31	1.1	117	Outlier,ND				
32	0.015	-3.3					
33	0.033	-1.3					
35	0.021	-2.7	ND				
39	0.064	2.3	ND				
40	0.030	-1.6	ND				
41	0.20	18	Outlier,ND				
42	0.044	0.00					
43	0.053	1.0	ND				
44	0.11	7.7	Outlier,ND				
46	0.40	40	Outlier,ND				
48	0.25	23	Outlier				
50	0.044	0.00					
51	0.063	2.2	ND				
52	0.042	-0.23	ND				
54	0.044	0.00	ND				
55	0.018	-3.0					
57	0.026	-2.1					
59	0.066	2.5	ND				
60	0.15	13	Outlier				
64	0.11	6.9	ND				
65	0.029	-1.7					
71	0.050	0.72					
75	0.034	-1.2					
77	0.15	12	Outlier				
80	0.050	0.68	ND				
81	0.0039	-4.6	ND				
83	0.030	-1.6					
84	0.40	40	Outlier,ND				

Consensus statistics

Consensus median, pg/g	0.044
Median all values pg/g	0.054
Consensus mean, pg/g	0.047
Standard deviation, pg/g	0.023
Relative standard deviation, %	48
No. of values reported	58
No. of values removed	16
No. of reported non-detects	27

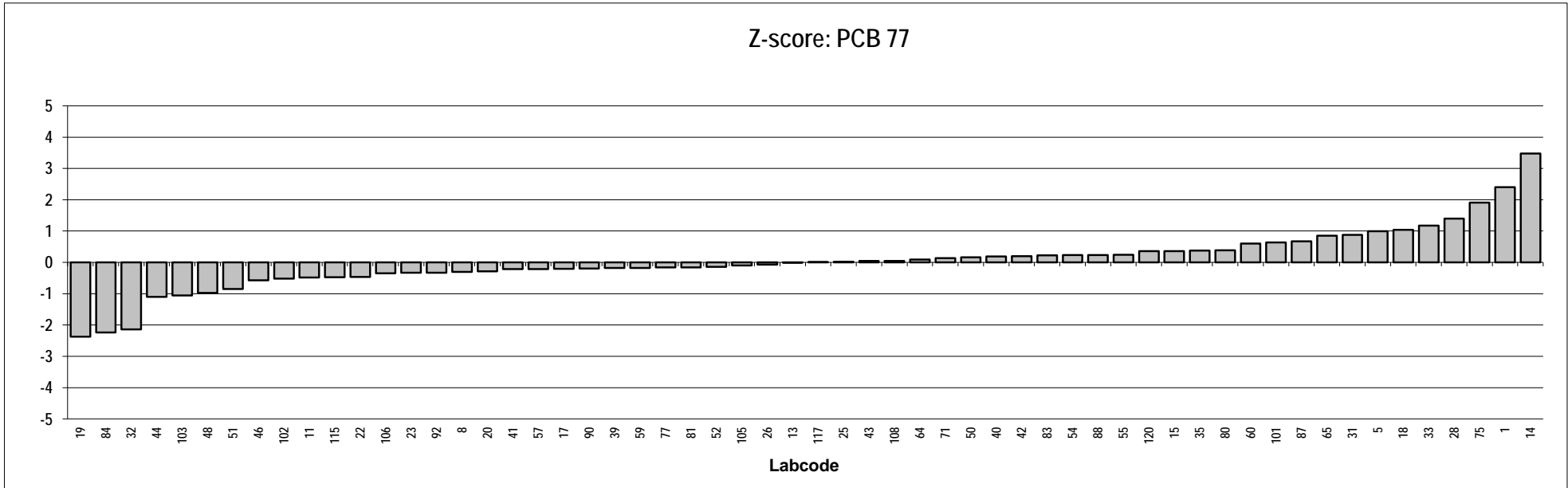
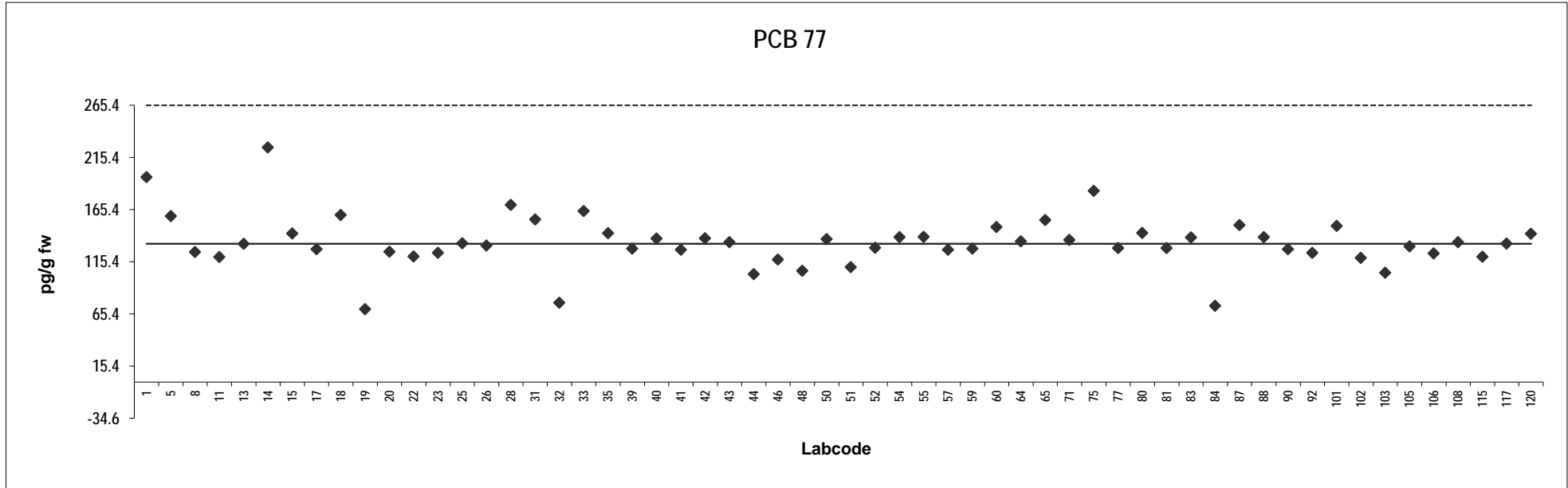


Cod liver
Congener: PCB 77

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	196	2.4		87	151	0.68	
5	159	1.0		88	139	0.24	
8	125	-0.30		90	127	-0.20	
11	120	-0.49		92	124	-0.33	
13	132	-0.0078		101	150	0.64	
14	225	3.5		102	119	-0.52	
15	142	0.36		103	105	-1.1	
17	127	-0.20		105	130	-0.10	
18	160	1.0		106	123	-0.35	
19	70	-2.4		108	134	0.050	
20	125	-0.29		115	120	-0.47	
22	120	-0.46		117	133	0.0078	
23	124	-0.33		120	142	0.36	
25	133	0.016					
26	131	-0.067					
28	170	1.4					
31	156	0.88					
32	76	-2.1					
33	164	1.2					
35	143	0.38					
39	128	-0.18					
40	138	0.19					
41	127	-0.21					
42	138	0.20					
43	134	0.050					
44	103	-1.1					
46	118	-0.57					
48	107	-0.97					
50	137	0.16					
51	110	-0.85					
52	129	-0.15					
54	139	0.24					
55	139	0.25					
57	127	-0.21					
59	128	-0.18					
60	149	0.60					
64	135	0.09					
65	155	0.85					
71	136	0.14					
75	183	1.9					
77	128	-0.16					
80	143	0.39					
81	129	-0.16					
83	139	0.22					
84	73	-2.2					

Consensus statistics

Consensus median, pg/g	133
Median all values pg/g	133
Consensus mean, pg/g	134
Standard deviation, pg/g	25
Relative standard deviation, %	19
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

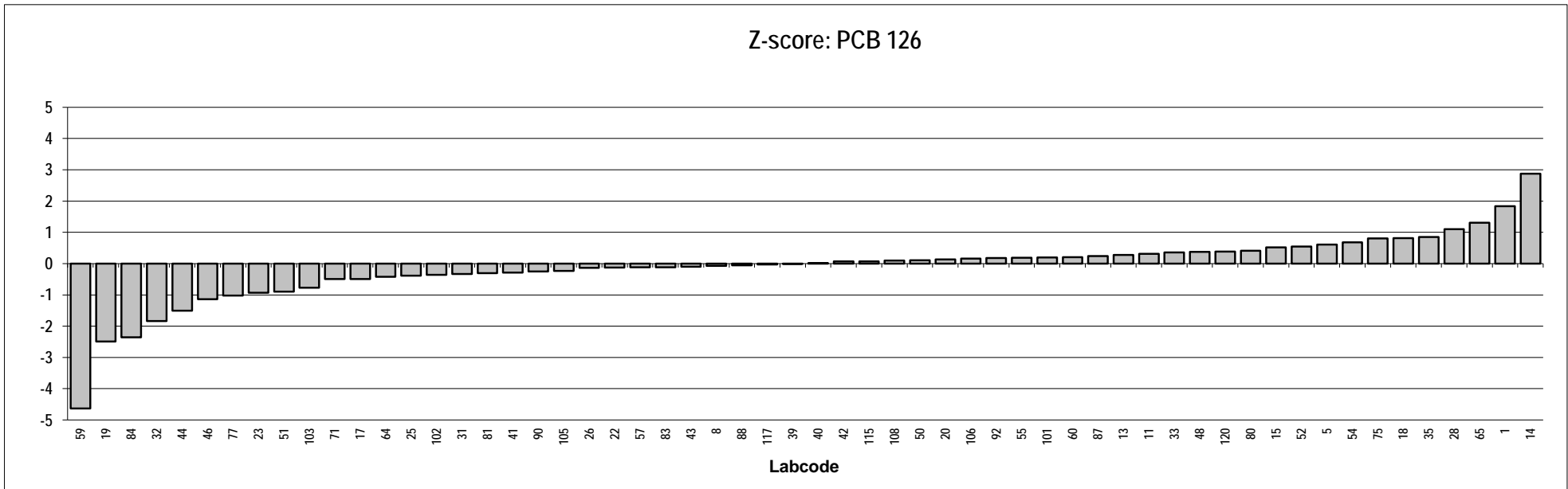
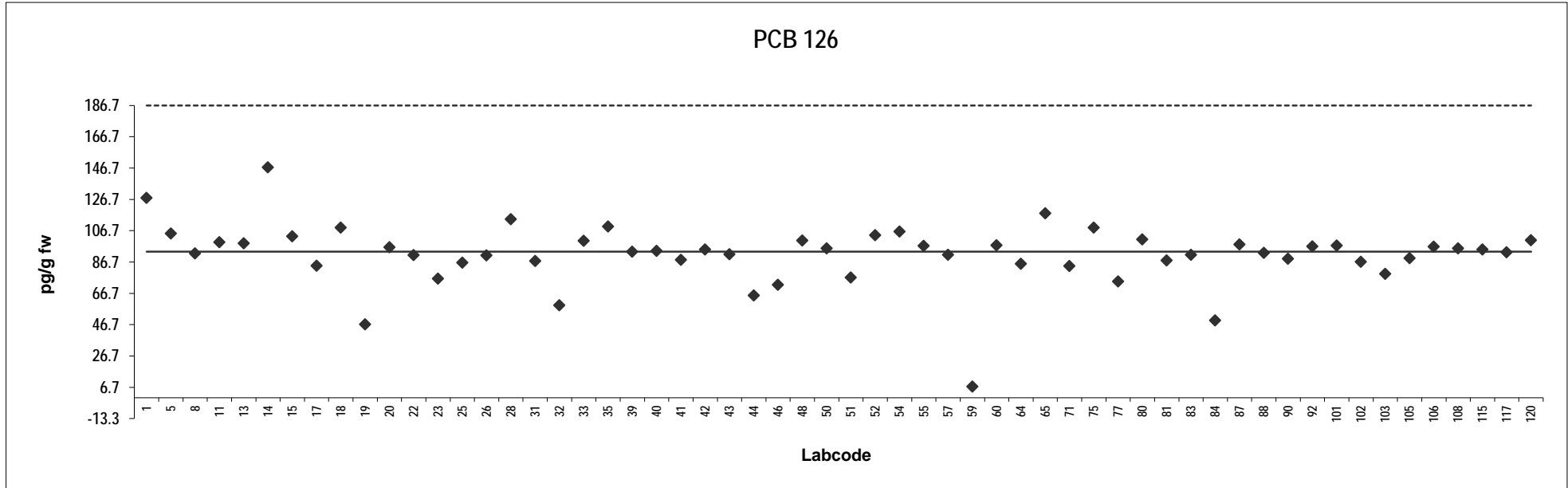


Cod liver
Congener: PCB 126

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	128	1.8		87	98	0.24	
5	105	0.61		88	92	-0.051	
8	92	-0.071		90	89	-0.26	
11	99	0.31		92	97	0.17	
13	98	0.27		101	97	0.20	
14	147	2.9		102	87	-0.36	
15	103	0.52		103	79	-0.77	
17	84	-0.49		105	89	-0.23	
18	109	0.81		106	96	0.16	
19	47	-2.5		108	95	0.099	
20	96	0.14		115	95	0.068	
22	91	-0.13		117	93	-0.032	
23	76	-0.93		120	101	0.38	
25	86	-0.38					
26	91	-0.14					
28	114	1.1					
31	87	-0.33					
32	59	-1.8					
33	100	0.36					
35	109	0.85					
39	93	-0.013					
40	94	0.013					
41	88	-0.29					
42	95	0.067					
43	92	-0.10					
44	65	-1.5					
46	72	-1.1					
48	100	0.37					
50	95	0.10					
51	77	-0.90					
52	104	0.55					
54	106	0.68					
55	97	0.19					
57	91	-0.12					
59	6.9	-4.6					
60	97	0.21					
64	86	-0.42					
65	118	1.3					
71	84	-0.50					
75	108	0.81					
77	74	-1.0					
80	101	0.41					
81	88	-0.31					
83	91	-0.12					
84	49	-2.4					

Consensus statistics

Consensus median, pg/g	93
Median all values pg/g	93
Consensus mean, pg/g	91
Standard deviation, pg/g	20
Relative standard deviation, %	22
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

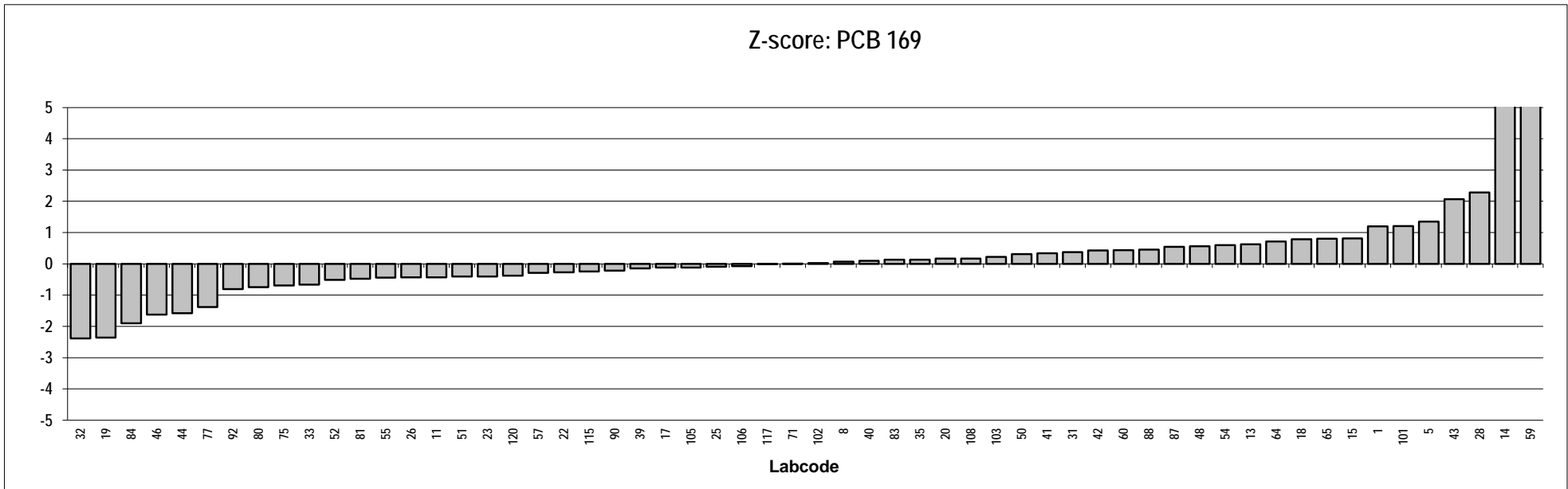
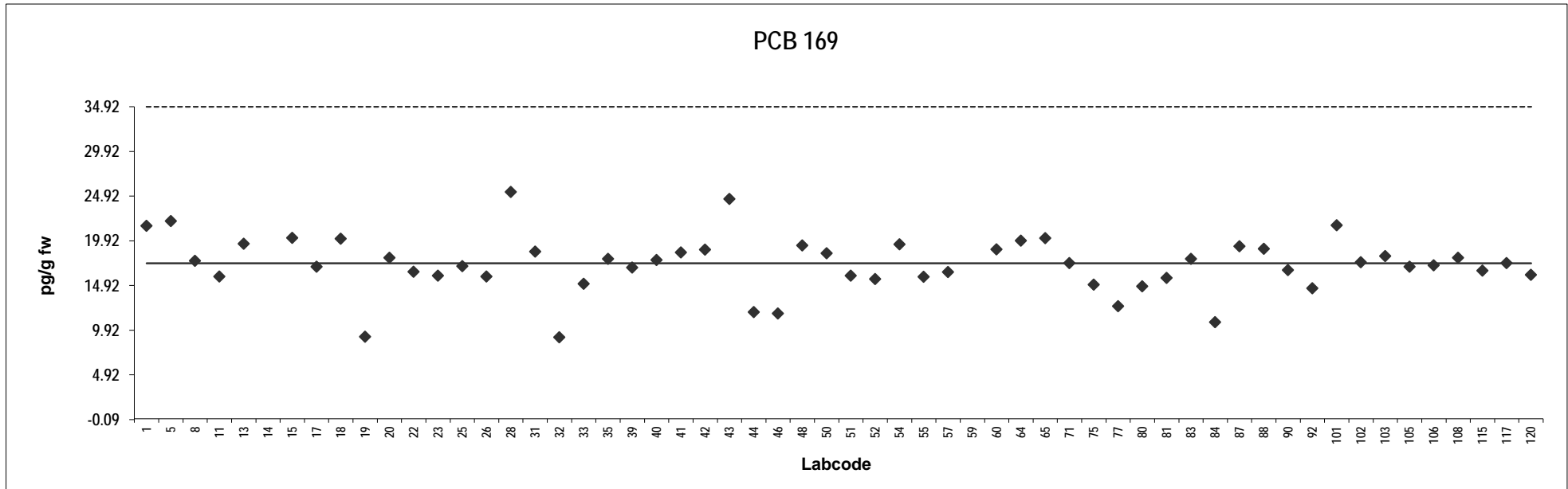


Cod liver
Congener: PCB 169

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	22	1.2		87	19	0.54	
5	22	1.4		88	19	0.46	
8	18	0.071		90	17	-0.22	
11	16	-0.43		92	15	-0.81	
13	20	0.62		101	22	1.2	
14	41	6.7	Outlier	102	18	0.025	
15	20	0.81		103	18	0.22	
17	17	-0.12		105	17	-0.12	
18	20	0.78		106	17	-0.071	
19	9.2	-2.4		108	18	0.17	
20	18	0.17		115	17	-0.25	
22	16	-0.28		117	17	-0.00030	
23	16	-0.41		120	16	-0.38	
25	17	-0.095					
26	16	-0.43					
28	25	2.3					
31	19	0.37					
32	9.1	-2.4					
33	15	-0.66					
35	18	0.13					
39	17	-0.15					
40	18	0.094					
41	19	0.34					
42	19	0.43					
43	25	2.1					
44	12	-1.6					
46	12	-1.6					
48	19	0.57					
50	19	0.31					
51	16	-0.41					
52	16	-0.51					
54	20	0.60					
55	16	-0.44					
57	16	-0.29					
59	106	25	Outlier				
60	19	0.44					
64	20	0.72					
65	20	0.80					
71	17	0.00030					
75	15	-0.69					
77	13	-1.4					
80	15	-0.75					
81	16	-0.47					
83	18	0.13					
84	11	-1.9					

Consensus statistics

Consensus median, pg/g	17
Median all values pg/g	17
Consensus mean, pg/g	17
Standard deviation, pg/g	3.1
Relative standard deviation, %	18
No. of values reported	58
No. of values removed	2
No. of reported non-detects	0

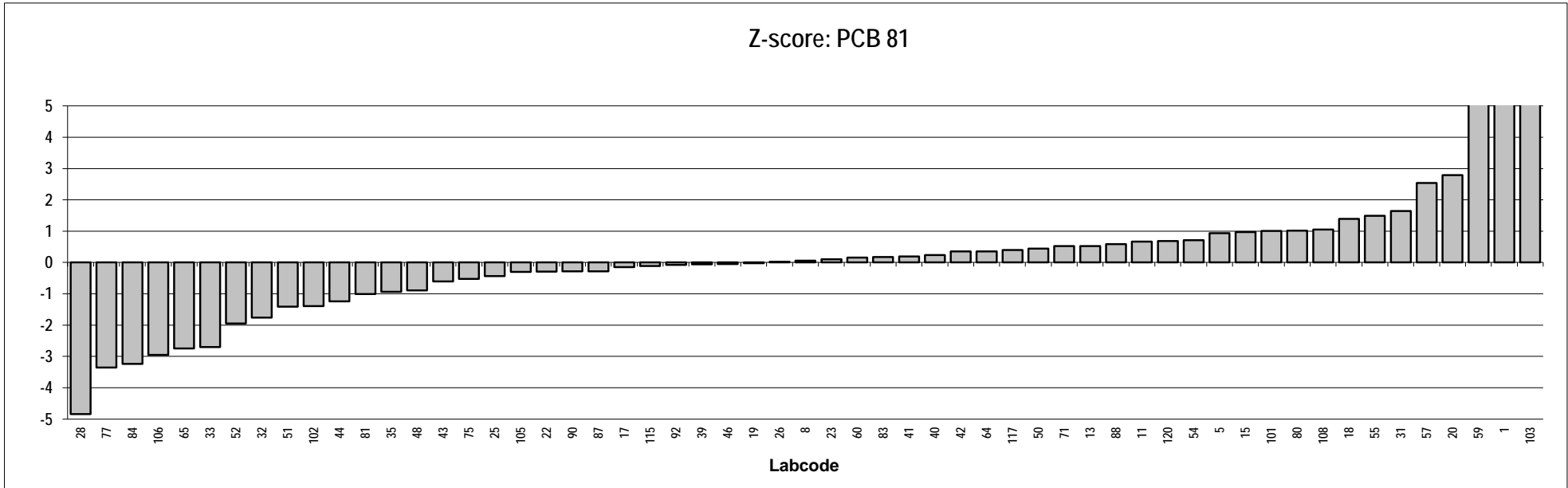
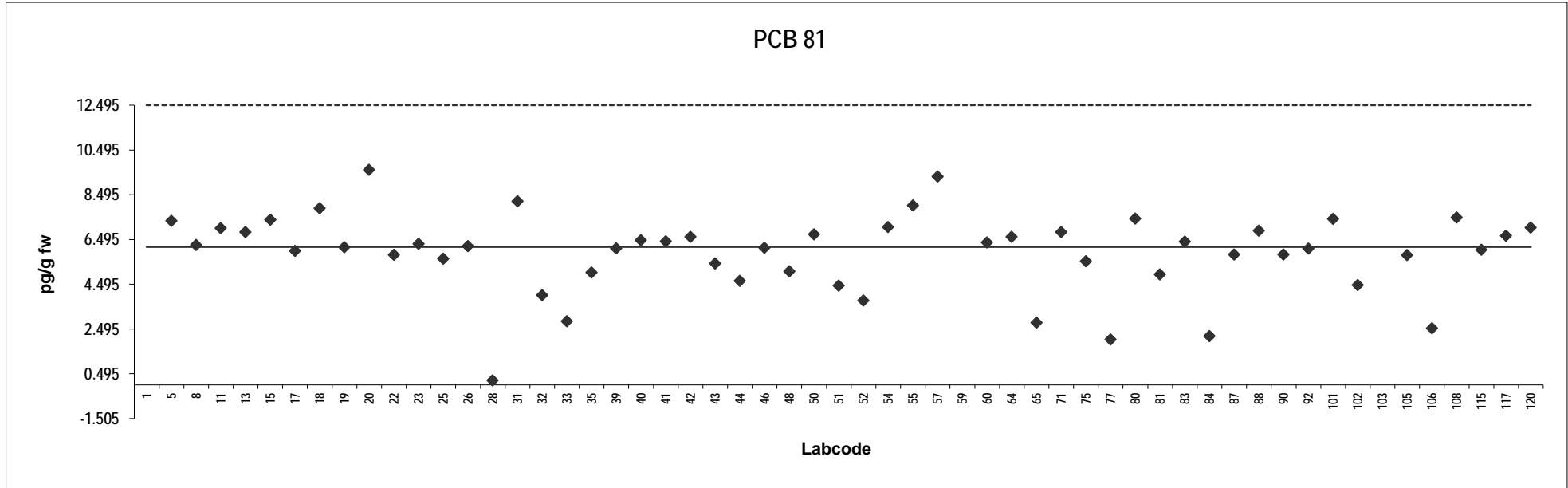


Cod liver
Congener: PCB 81

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	20	11	Outlier	88	6.9	0.58	
5	7.3	0.94		90	5.8	-0.29	
8	6.2	0.062		92	6.1	-0.074	
11	7.0	0.67		101	7.4	1.0	
13	6.8	0.53		102	4.5	-1.4	
15	7.4	0.97		103	146	114	Outlier
17	6.0	-0.15		105	5.8	-0.30	
18	7.9	1.4		106	2.5	-3.0	
19	6.1	-0.023		108	7.5	1.1	
20	9.6	2.8		115	6.0	-0.11	
22	5.8	-0.29		117	6.7	0.40	
23	6.3	0.10		120	7.0	0.69	
25	5.6	-0.44					
26	6.2	0.023					
28	0.19	-4.8	ND				
31	8.2	1.6					
32	4.0	-1.8					
33	2.8	-2.7					
35	5.0	-0.94					
39	6.1	-0.058					
40	6.5	0.23					
41	6.4	0.19					
42	6.6	0.36					
43	5.4	-0.61					
44	4.6	-1.2					
46	6.1	-0.046					
48	5.1	-0.89					
50	6.7	0.44					
51	4.4	-1.4					
52	3.8	-1.9					
54	7.1	0.71					
55	8.0	1.5					
57	9.3	2.5					
59	19	10	Outlier				
60	6.4	0.15					
64	6.6	0.36					
65	2.8	-2.7					
71	6.8	0.52					
75	5.5	-0.53					
77	2.0	-3.4					
80	7.4	1.0					
81	4.9	-1.0					
83	6.4	0.18					
84	2.2	-3.2					
87	5.8	-0.28					

Consensus statistics

Consensus median, pg/g	6.2
Median all values pg/g	6.2
Consensus mean, pg/g	5.9
Standard deviation, pg/g	1.8
Relative standard deviation, %	30
No. of values reported	57
No. of values removed	3
No. of reported non-detects	1

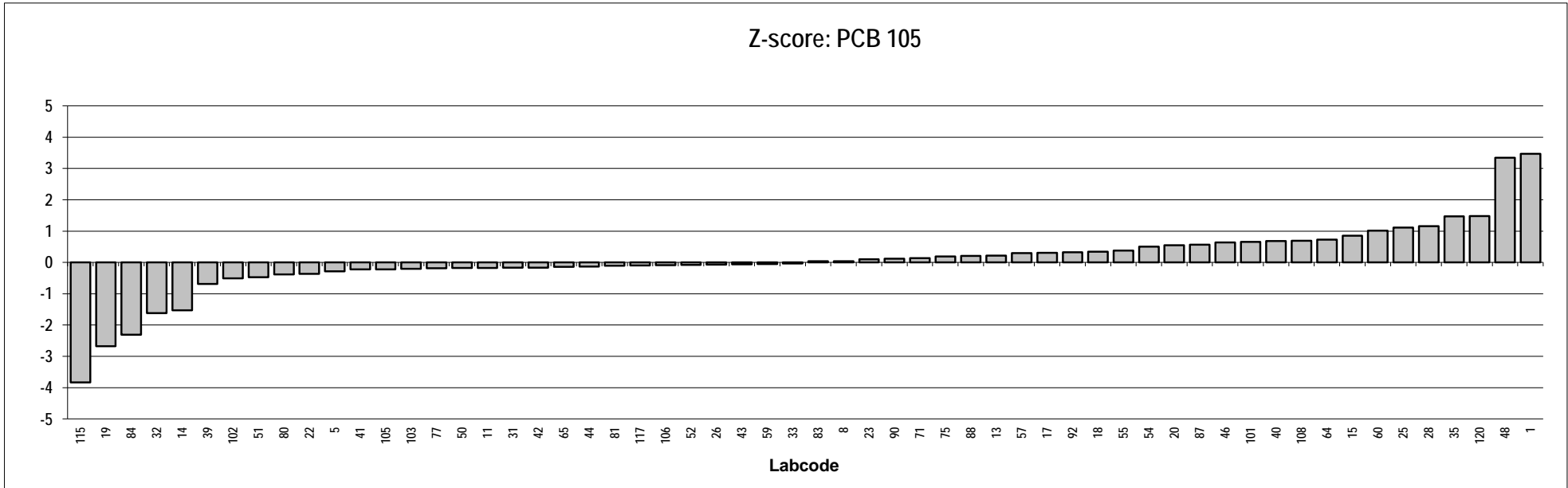
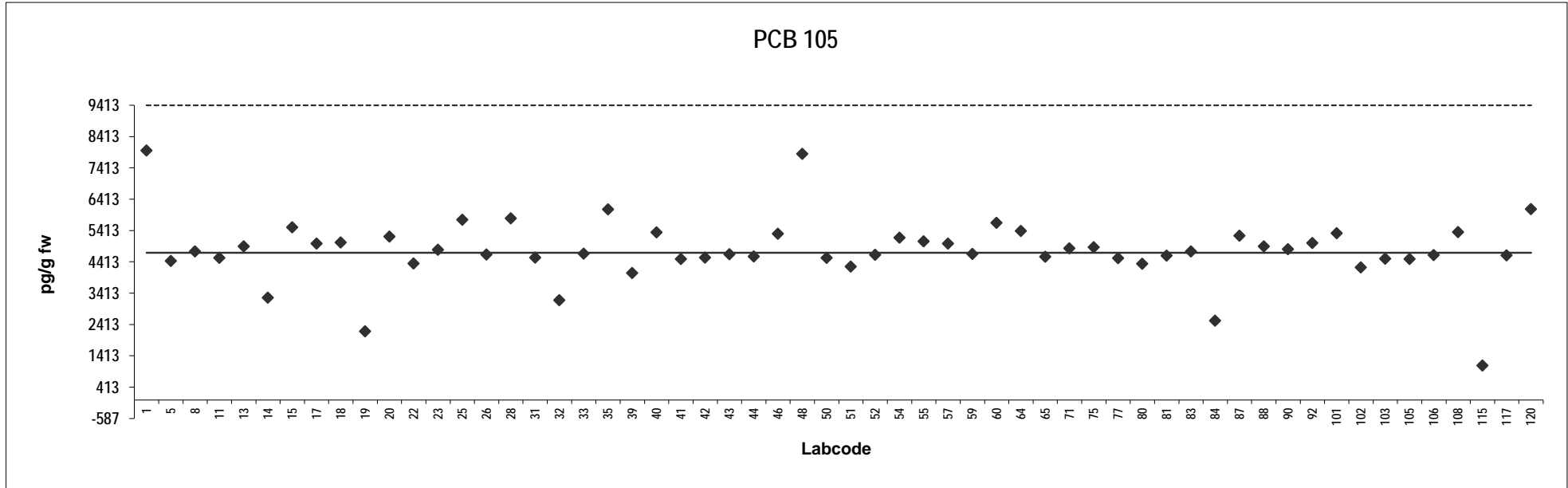


Cod liver
Congener: PCB 105

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	7969	3.5		87	5240	0.57	
5	4437	-0.29		88	4900	0.21	
8	4740	0.036		90	4817	0.12	
11	4542	-0.18		92	5010	0.32	
13	4907	0.21		101	5327	0.66	
14	3270	-1.5		102	4230	-0.51	
15	5509	0.85		103	4513	-0.21	
17	4991	0.30		105	4500	-0.22	
18	5031	0.35		106	4625	-0.087	
19	2190	-2.7		108	5360	0.69	
20	5220	0.55		115	1100	-3.8	
22	4359	-0.37		117	4618	-0.094	
23	4800	0.099		120	6098	1.5	
25	5755	1.1					
26	4644	-0.066					
28	5800	1.2					
31	4547	-0.17					
32	3185	-1.6					
33	4673	-0.036					
35	6089	1.5					
39	4055	-0.69					
40	5352	0.69					
41	4500	-0.22					
42	4550	-0.17					
43	4650	-0.060					
44	4583	-0.13					
46	5307	0.64					
48	7858	3.3					
50	4540	-0.18					
51	4260	-0.47					
52	4635	-0.076					
54	5182	0.51					
55	5066	0.38					
57	4990	0.30					
59	4660	-0.049					
60	5660	1.0					
64	5394	0.73					
65	4575	-0.14					
71	4838	0.14					
75	4882	0.19					
77	4531	-0.19					
80	4350	-0.38					
81	4611	-0.10					
83	4740	0.036					
84	2531	-2.3					

Consensus statistics

Consensus median, pg/g	4707
Median all values pg/g	4707
Consensus mean, pg/g	4781
Standard deviation, pg/g	1038
Relative standard deviation, %	22
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

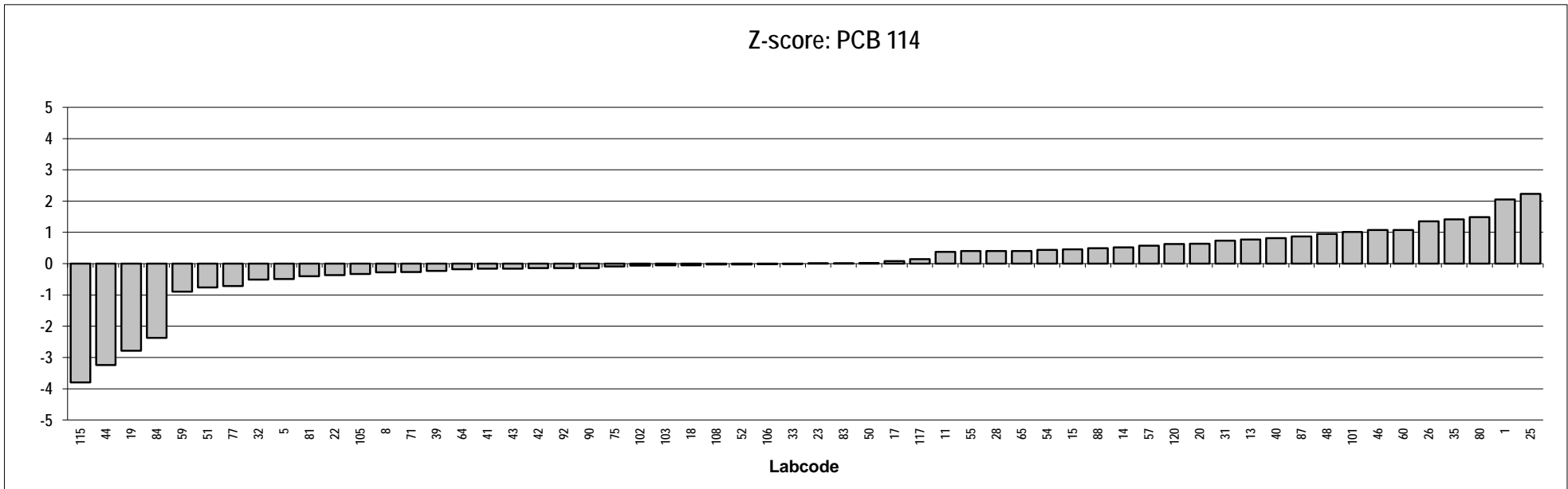
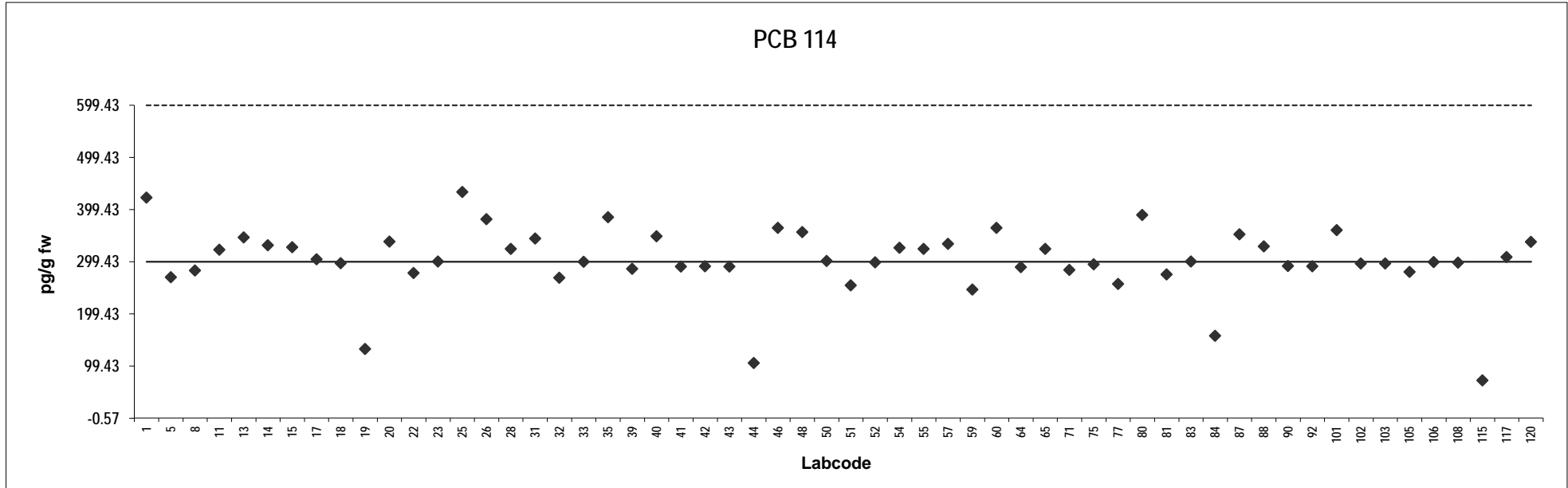


Cod liver
Congener: PCB 114

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	423	2.1		87	352	0.87	
5	270	-0.50		88	329	0.49	
8	283	-0.28		90	291	-0.14	
11	322	0.38		92	291	-0.15	
13	346	0.77		101	360	1.0	
14	331	0.52		102	296	-0.062	
15	327	0.46		103	296	-0.058	
17	304	0.077		105	280	-0.33	
18	297	-0.052		106	299	-0.018	
19	132	-2.8		108	298	-0.029	
20	338	0.64		115	72	-3.8	
22	278	-0.37		117	308	0.15	
23	300	0.0048		120	337	0.63	
25	433	2.2					
26	381	1.4					
28	324	0.40					
31	344	0.74					
32	269	-0.51					
33	299	-0.0048					
35	385	1.4					
39	286	-0.23					
40	348	0.81					
41	290	-0.16					
42	291	-0.15					
43	290	-0.16					
44	105	-3.2					
46	364	1.1					
48	357	0.95					
50	301	0.021					
51	254	-0.76					
52	298	-0.025					
54	326	0.44					
55	324	0.40					
57	334	0.57					
59	246	-0.90					
60	364	1.1					
64	289	-0.18					
65	324	0.41					
71	284	-0.26					
75	294	-0.088					
77	257	-0.71					
80	389	1.5					
81	275	-0.41					
83	300	0.0048					
84	158	-2.4					

Consensus statistics

Consensus median, pg/g	300
Median all values pg/g	300
Consensus mean, pg/g	303
Standard deviation, pg/g	65
Relative standard deviation, %	21
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

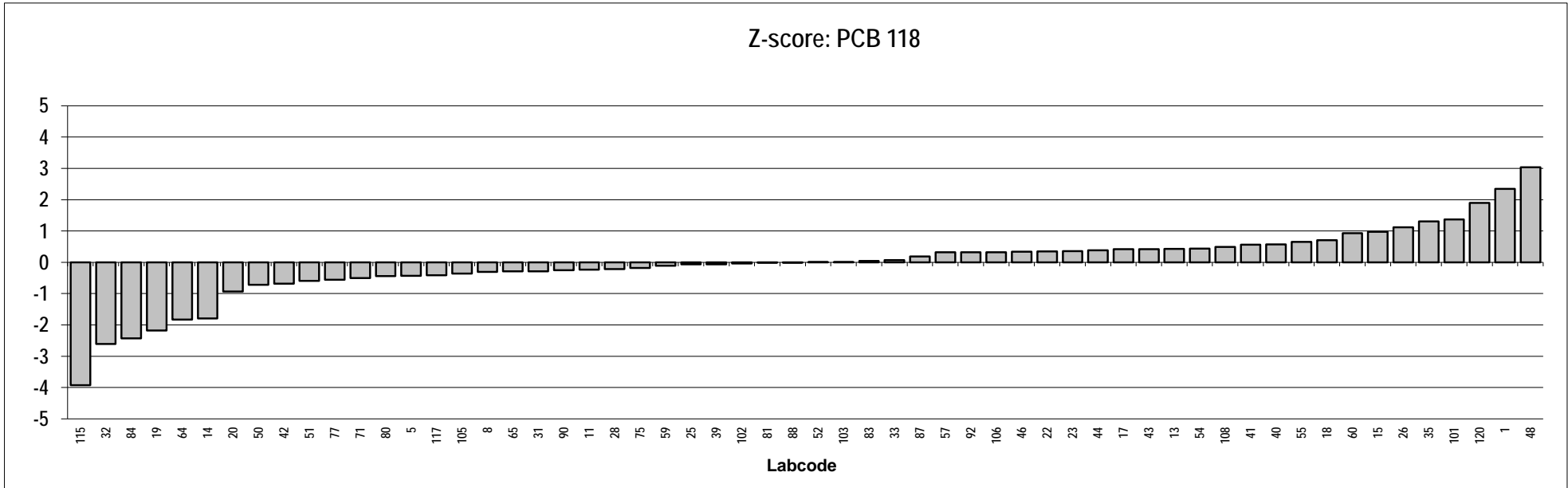
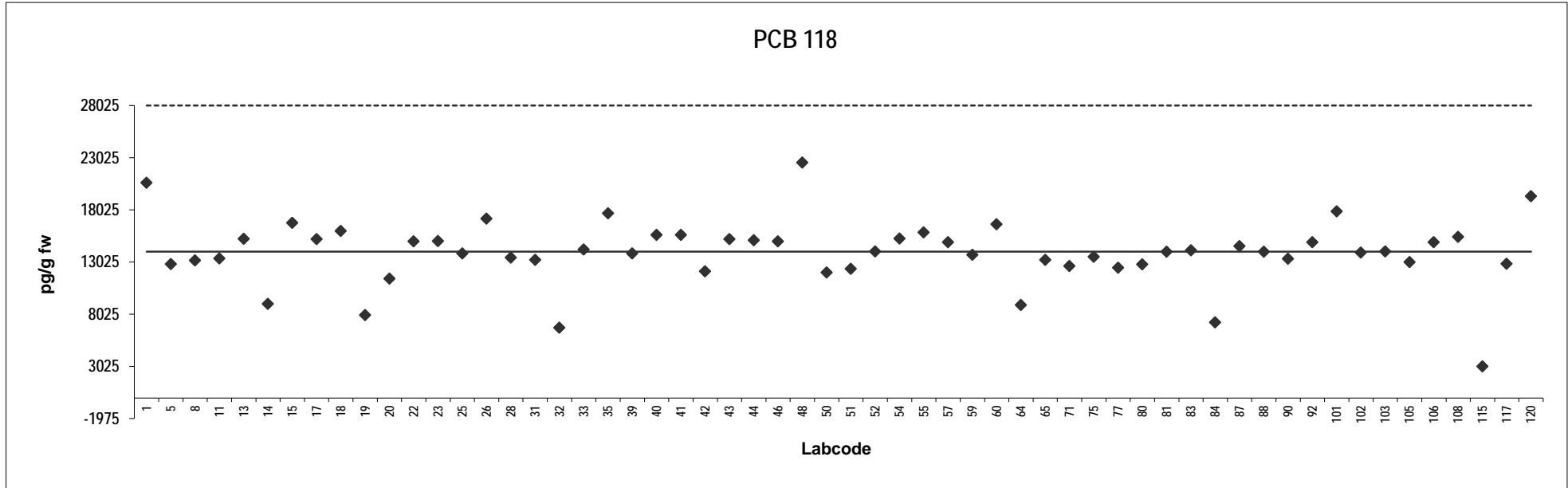


Cod liver
Congener: PCB 118

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	20586	2.3		87	14531	0.19	
5	12807	-0.43		88	14000	-0.0045	
8	13163	-0.30		90	13311	-0.25	
11	13346	-0.24		92	14900	0.32	
13	15219	0.43		101	17859	1.4	
14	8990	-1.8		102	13900	-0.040	
15	16751	0.98		103	14026	0.0047	
17	15193	0.42		105	13000	-0.36	
18	15981	0.70		106	14908	0.32	
19	7910	-2.2		108	15400	0.50	
20	11400	-0.93		115	3000	-3.9	
22	14989	0.35		117	12845	-0.42	
23	15000	0.35		120	19319	1.9	
25	13827	-0.066					
26	17157	1.1					
28	13415	-0.21					
31	13209	-0.29					
32	6698	-2.6					
33	14213	0.071					
35	17678	1.3					
39	13839	-0.062					
40	15610	0.57					
41	15600	0.57					
42	12100	-0.68					
43	15200	0.42					
44	15082	0.38					
46	14972	0.34					
48	22526	3.0					
50	12000	-0.72					
51	12343	-0.60					
52	14025	0.0045					
54	15242	0.44					
55	15843	0.65					
57	14900	0.32					
59	13700	-0.11					
60	16608	0.93					
64	8889	-1.8					
65	13205	-0.29					
71	12610	-0.50					
75	13496	-0.18					
77	12456	-0.56					
80	12776	-0.44					
81	13977	-0.013					
83	14130	0.042					
84	7210	-2.4					

Consensus statistics

Consensus median, pg/g	14013
Median all values pg/g	14013
Consensus mean, pg/g	13912
Standard deviation, pg/g	3143
Relative standard deviation, %	23
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

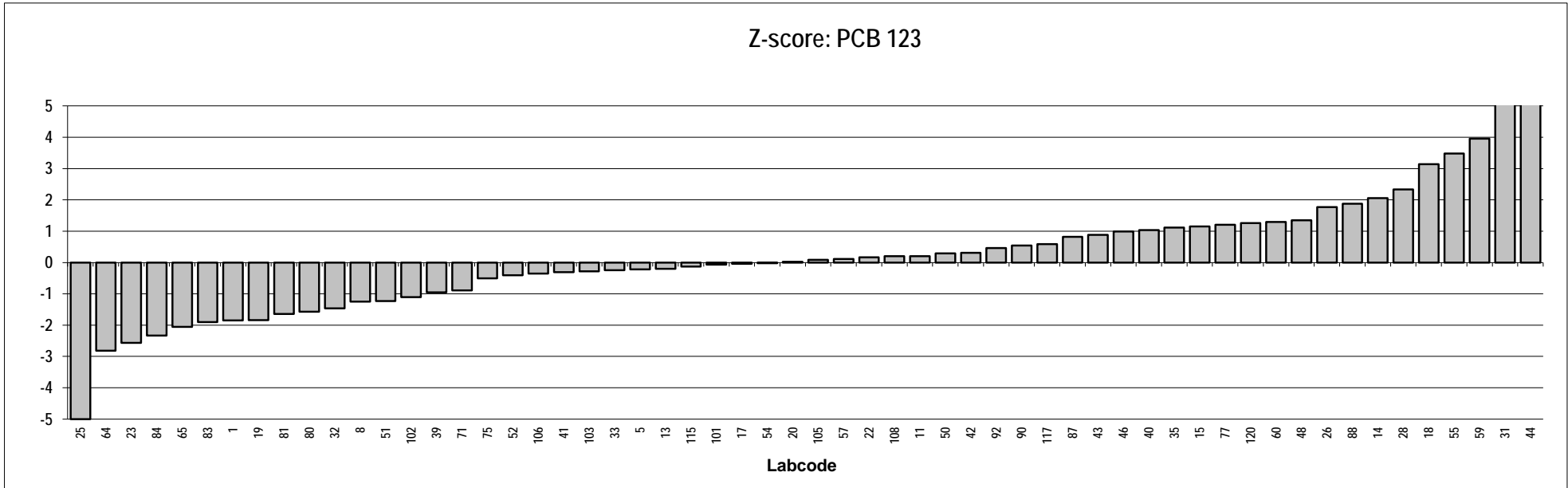
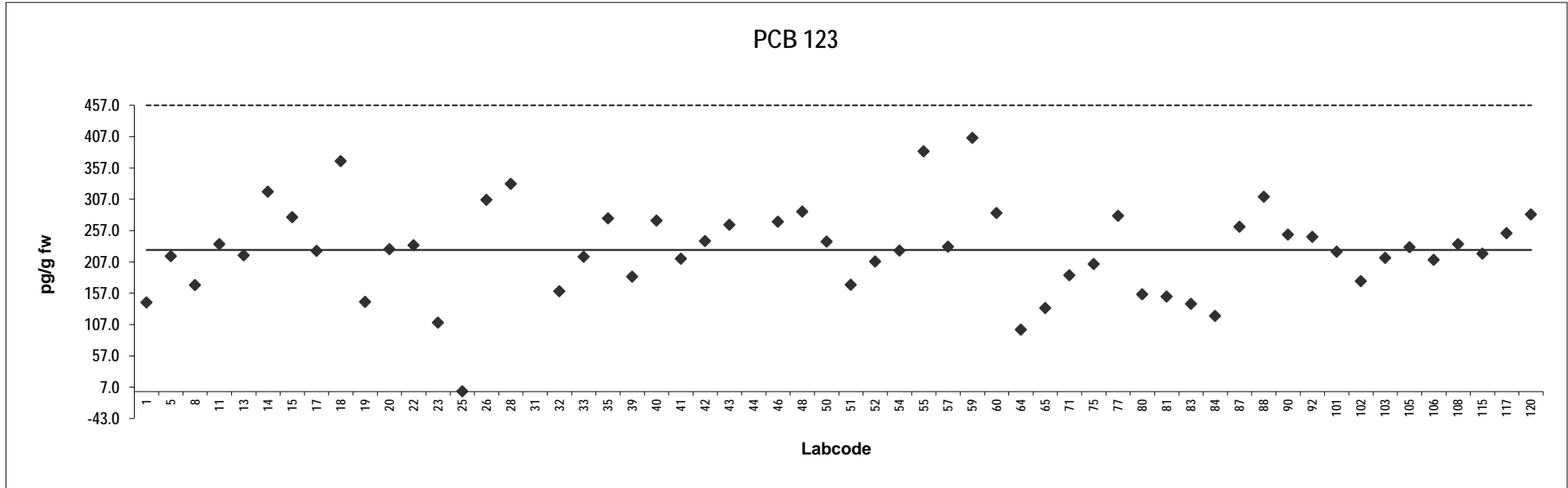


Cod liver
Congener: PCB 123

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	142	-1.9		87	263	0.82	
5	216	-0.22		88	311	1.9	ND
8	170	-1.2		90	250	0.54	
11	235	0.20		92	247	0.46	
13	217	-0.20		101	223	-0.066	
14	319	2.1		102	176	-1.1	
15	278	1.2		103	213	-0.28	
17	224	-0.040		105	230	0.088	
18	368	3.1		106	210	-0.36	
19	143	-1.8		108	235	0.20	
20	227	0.022		115	220	-0.13	ND
22	234	0.17		117	253	0.59	
23	110	-2.6		120	283	1.3	
25	0.0033	-5.0	ND				
26	306	1.8					
28	331	2.3					
31	527	6.7	Outlier				
32	160	-1.5					
33	215	-0.24					
35	276	1.1					
39	183	-0.95					
40	273	1.0					
41	212	-0.31					
42	240	0.31					
43	266	0.88					
44	1614	31	Outlier				
46	271	0.99					
48	287	1.4					
50	239	0.29					
51	170	-1.2					
52	208	-0.41					
54	225	-0.022					
55	383	3.5					
57	231	0.11					
59	405	4.0					
60	285	1.3					
64	99	-2.8					
65	133	-2.1					
71	186	-0.89					
75	203	-0.51					
77	280	1.2					
80	155	-1.6					
81	152	-1.6					
83	140	-1.9					
84	120	-2.3					

Consensus statistics

Consensus median, pg/g	226
Median all values pg/g	229
Consensus mean, pg/g	226
Standard deviation, pg/g	73
Relative standard deviation, %	32
No. of values reported	58
No. of values removed	2
No. of reported non-detects	3

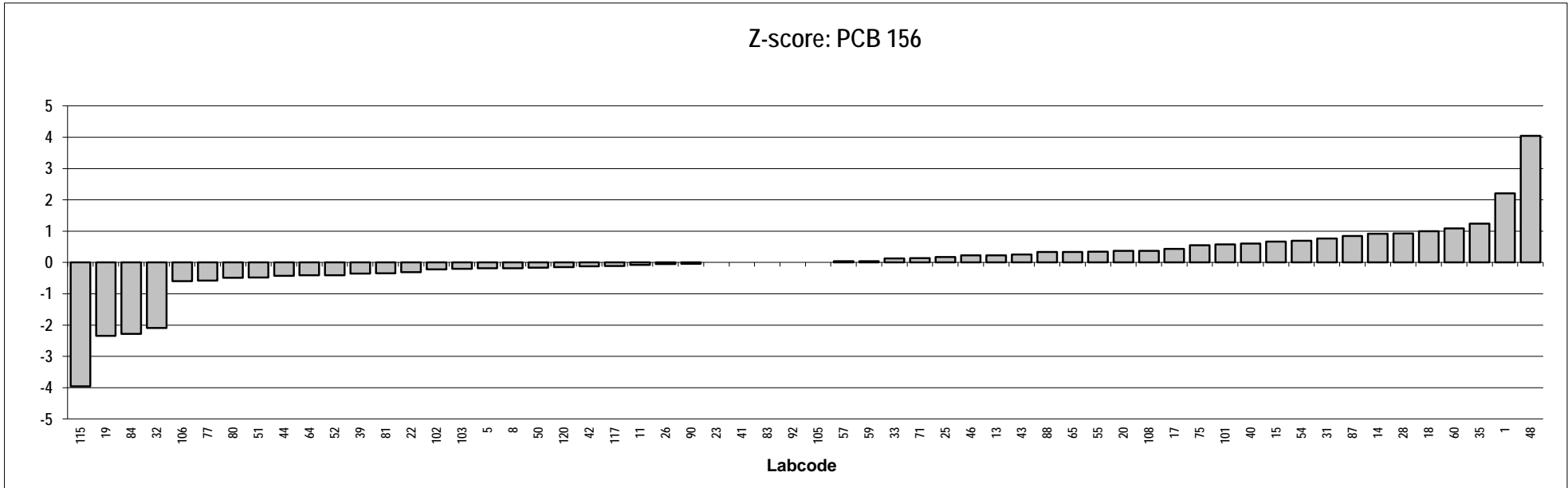
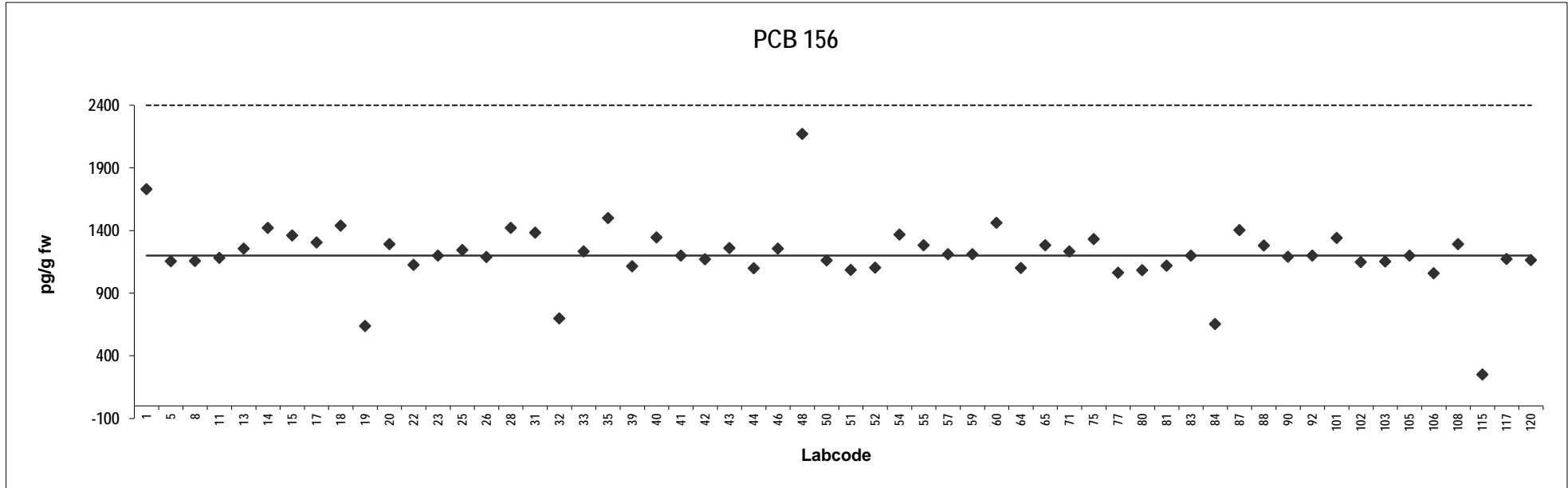


Cod liver
Congener: PCB 156

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1730	2.2		87	1403	0.85	
5	1155	-0.19		88	1280	0.33	
8	1156	-0.18		90	1190	-0.043	
11	1181	-0.081		92	1200	0.00	
13	1255	0.23		101	1339	0.58	
14	1420	0.92		102	1148	-0.22	
15	1360	0.67		103	1151	-0.20	
17	1304	0.43		105	1200	0.00	
18	1439	1.0		106	1058	-0.59	
19	637	-2.3		108	1290	0.38	
20	1290	0.38		115	250	-4.0	
22	1125	-0.31		117	1172	-0.12	
23	1200	0.00		120	1164	-0.15	
25	1243	0.18					
26	1188	-0.050					
28	1421	0.92					
31	1383	0.76					
32	698	-2.1					
33	1231	0.13					
35	1498	1.2					
39	1115	-0.35					
40	1344	0.60					
41	1200	0.00					
42	1170	-0.13					
43	1260	0.25					
44	1097	-0.43					
46	1255	0.23					
48	2171	4.0					
50	1160	-0.17					
51	1086	-0.48					
52	1102	-0.41					
54	1366	0.69					
55	1282	0.34					
57	1210	0.042					
59	1210	0.042					
60	1461	1.1					
64	1101	-0.41					
65	1281	0.34					
71	1232	0.13					
75	1332	0.55					
77	1061	-0.58					
80	1082	-0.49					
81	1117	-0.34					
83	1200	0.00					
84	653	-2.3					

Consensus statistics

Consensus median, pg/g	1200
Median all values pg/g	1200
Consensus mean, pg/g	1212
Standard deviation, pg/g	254
Relative standard deviation, %	21
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

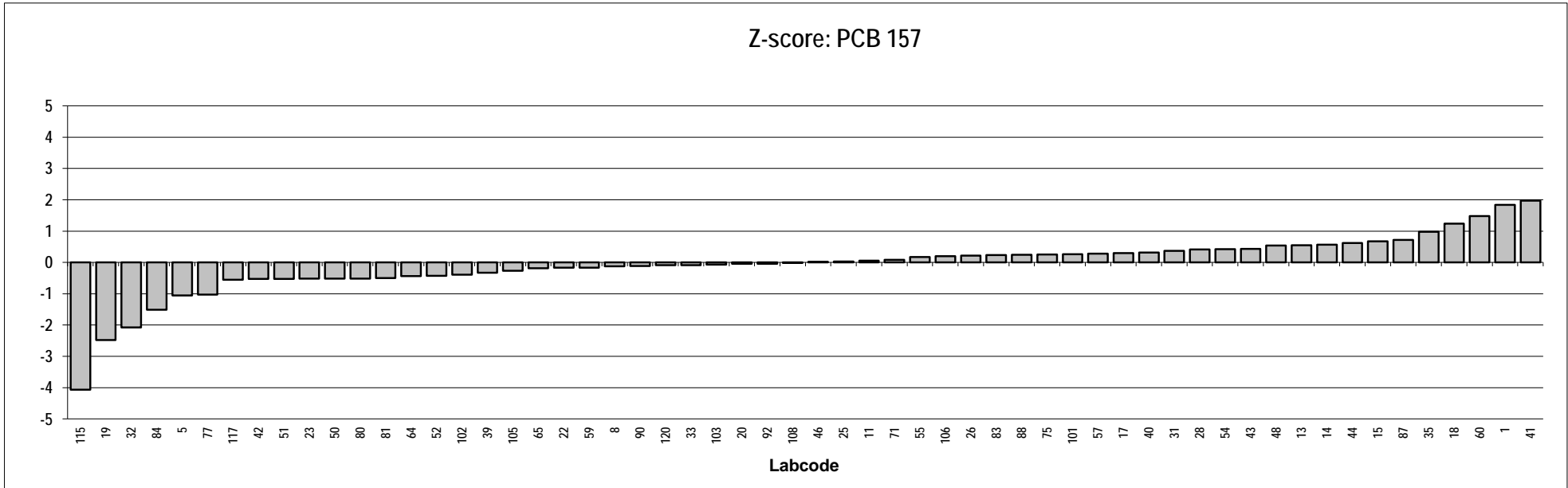
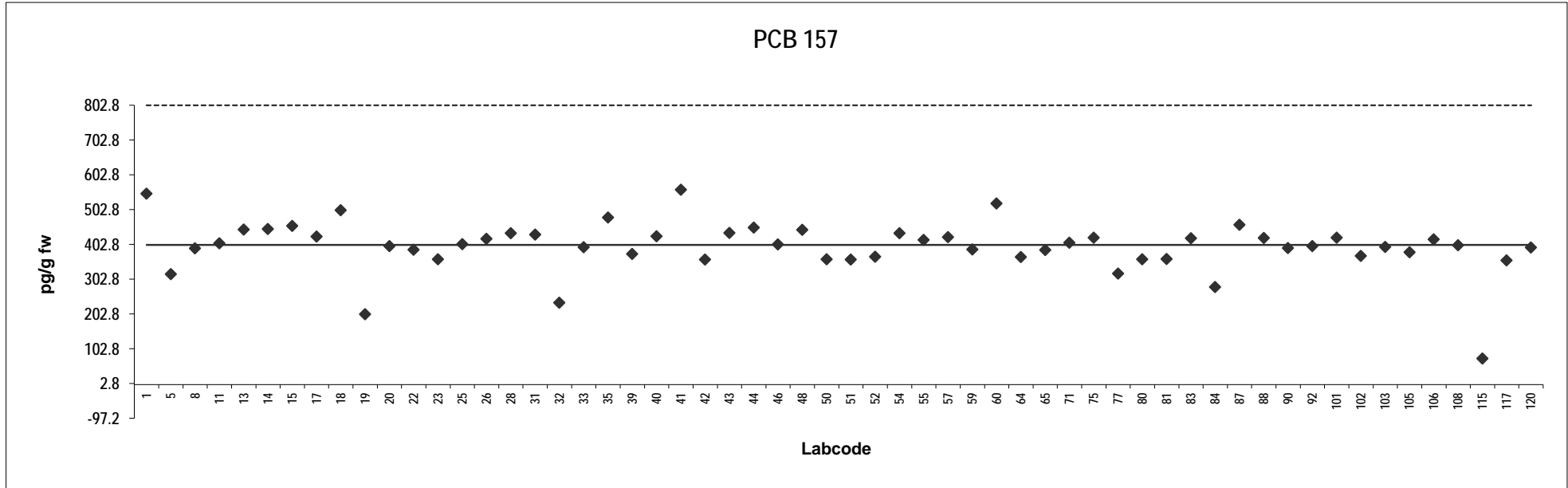


Cod liver
Congener: PCB 157

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	549	1.8		87	459	0.72	
5	317	-1.1		88	421	0.24	
8	391	-0.13		90	392	-0.11	
11	406	0.057		92	398	-0.042	
13	445	0.55		101	422	0.26	
14	447	0.57		102	370	-0.39	
15	455	0.67		103	396	-0.073	
17	426	0.30		105	380	-0.27	
18	501	1.2		106	417	0.20	
19	202	-2.5		108	400	-0.017	
20	398	-0.042		115	75	-4.1	
22	388	-0.17		117	357	-0.56	
23	360	-0.52		120	394	-0.091	
25	403	0.024					
26	419	0.22					
28	435	0.41					
31	431	0.37					
32	235	-2.1					
33	394	-0.089					
35	480	0.98					
39	375	-0.33					
40	426	0.31					
41	560	2.0					
42	359	-0.53					
43	436	0.43					
44	451	0.62					
46	403	0.017					
48	445	0.54					
50	360	-0.52					
51	359	-0.53					
52	367	-0.42					
54	435	0.42					
55	415	0.17					
57	424	0.28					
59	388	-0.17					
60	520	1.5					
64	366	-0.44					
65	386	-0.19					
71	408	0.078					
75	422	0.25					
77	319	-1.0					
80	360	-0.52					
81	361	-0.50					
83	420	0.23					
84	280	-1.5					

Consensus statistics

Consensus median, pg/g	401
Median all values pg/g	401
Consensus mean, pg/g	397
Standard deviation, pg/g	75
Relative standard deviation, %	19
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

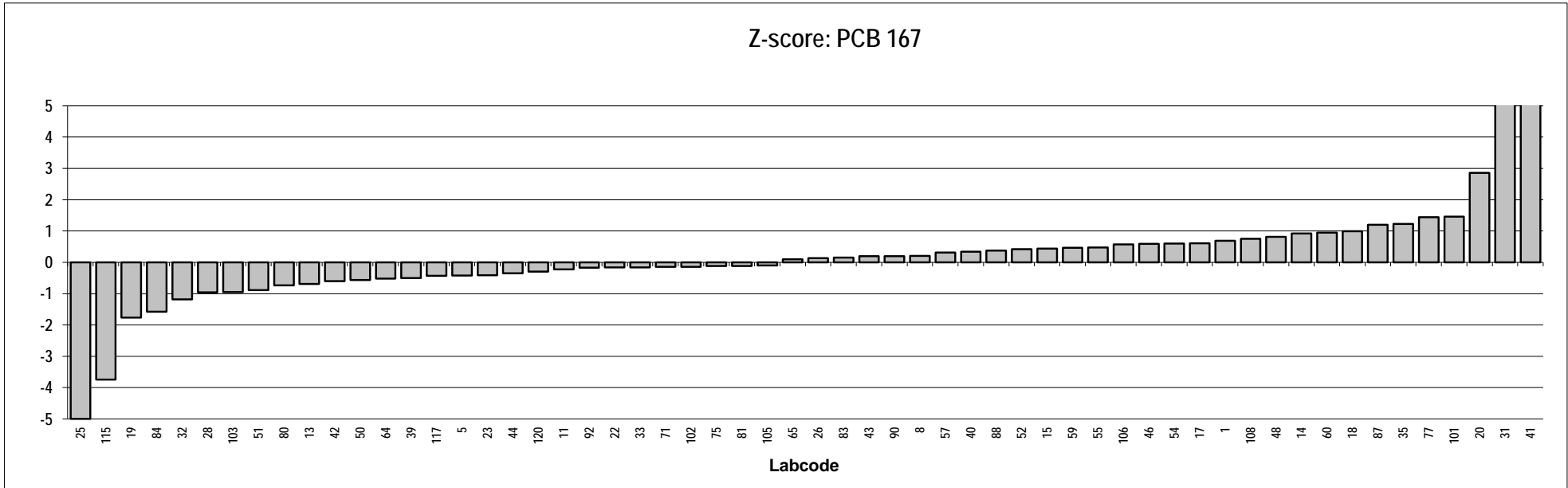
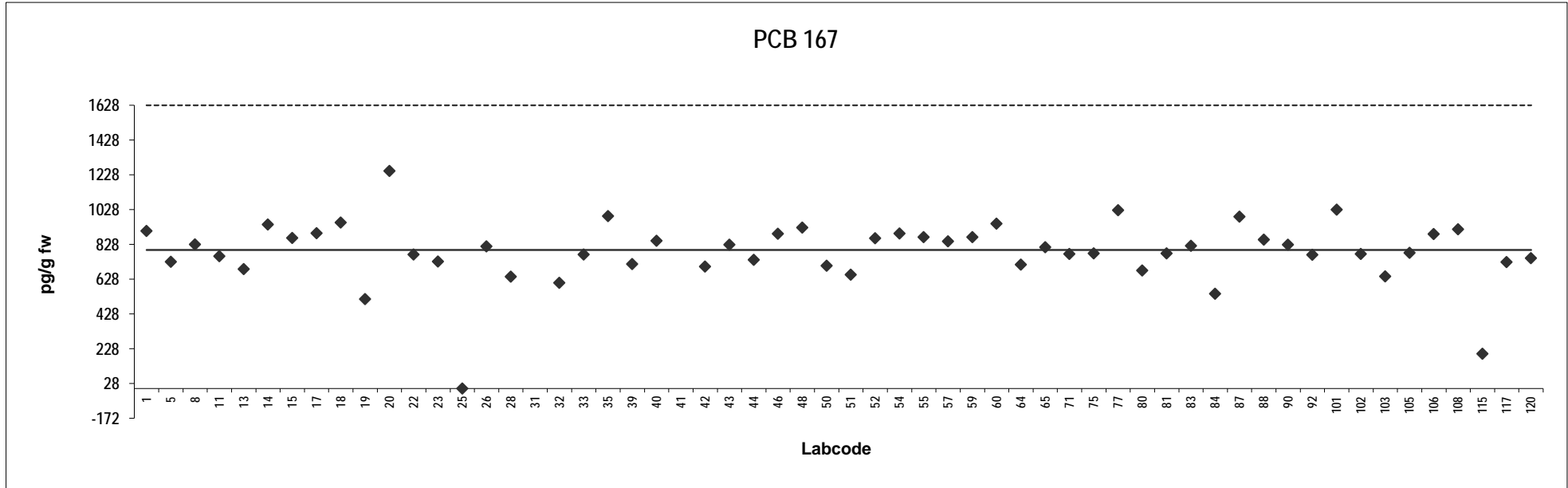


Cod liver
Congener: PCB 167

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	905	0.69		87	987	1.2	
5	728	-0.43		88	855	0.37	
8	828	0.21		90	827	0.20	
11	761	-0.22		92	769	-0.17	
13	686	-0.69		101	1028	1.5	
14	942	0.92		102	773	-0.14	
15	866	0.44		103	644	-0.95	
17	893	0.61		105	780	-0.098	
18	954	1.0		106	887	0.58	
19	514	-1.8		108	915	0.75	
20	1250	2.9		115	200	-3.7	
22	770	-0.16		117	727	-0.43	
23	730	-0.41		120	749	-0.29	
25	0.0033	-5.0	ND				
26	817	0.13					
28	643	-0.96					
31	1739	5.9	Outlier				
32	607	-1.2					
33	770	-0.16					
35	991	1.2					
39	716	-0.50					
40	849	0.34					
41	3030	14	Outlier				
42	700	-0.60					
43	827	0.20					
44	740	-0.35					
46	890	0.59					
48	925	0.81					
50	706	-0.56					
51	654	-0.89					
52	863	0.42					
54	891	0.60					
55	871	0.47					
57	845	0.31					
59	870	0.47					
60	947	0.95					
64	713	-0.52					
65	811	0.098					
71	772	-0.15					
75	777	-0.12					
77	1025	1.4					
80	678	-0.74					
81	777	-0.12					
83	820	0.15					
84	545	-1.6					

Consensus statistics

Consensus median, pg/g	796
Median all values pg/g	814
Consensus mean, pg/g	786
Standard deviation, pg/g	185
Relative standard deviation, %	24
No. of values reported	58
No. of values removed	2
No. of reported non-detects	1

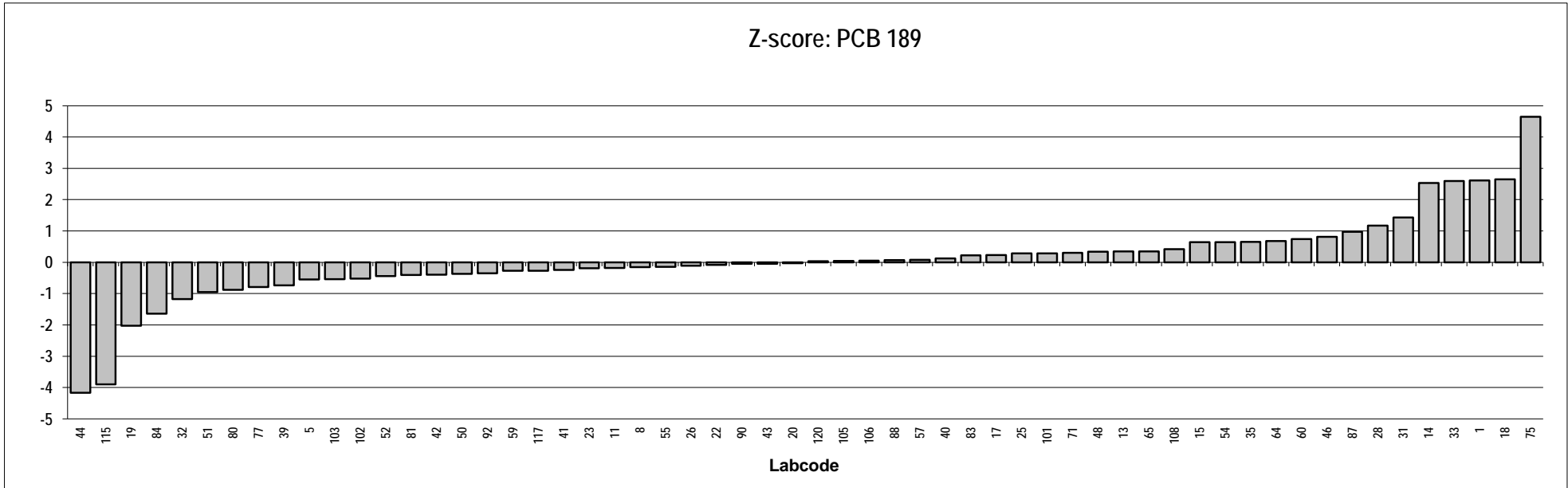
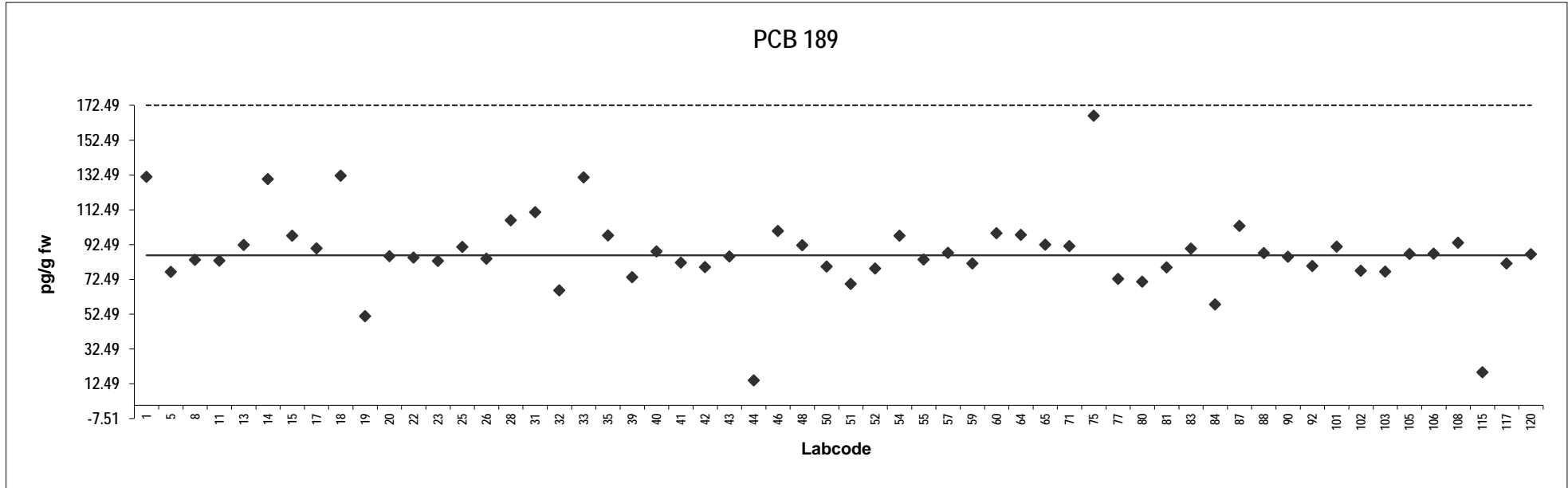


Cod liver
Congener: PCB 189

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	131	2.6		87	103	0.98	
5	77	-0.55		88	88	0.073	
8	84	-0.15		90	85	-0.051	
11	83	-0.19		92	80	-0.36	
13	92	0.34		101	91	0.29	
14	130	2.5		102	77	-0.52	
15	97	0.65		103	77	-0.54	
17	90	0.23		105	87	0.044	
18	132	2.6		106	87	0.048	
19	51	-2.0		108	93	0.41	
20	86	-0.032		115	19	-3.9	
22	85	-0.081		117	82	-0.27	
23	83	-0.19		120	87	0.032	
25	91	0.28					
26	84	-0.11					
28	106	1.2					
31	111	1.4					
32	66	-1.2					
33	131	2.6					
35	98	0.66					
39	74	-0.73					
40	88	0.12					
41	82	-0.25					
42	79	-0.40					
43	86	-0.043					
44	14	-4.2					
46	100	0.81					
48	92	0.34					
50	80	-0.37					
51	70	-0.95					
52	79	-0.44					
54	97	0.65					
55	84	-0.15					
57	88	0.079					
59	82	-0.28					
60	99	0.74					
64	98	0.68					
65	92	0.35					
71	91	0.30					
75	166	4.6					
77	73	-0.79					
80	71	-0.88					
81	79	-0.41					
83	90	0.22					
84	58	-1.6					

Consensus statistics

Consensus median, pg/g	86
Median all values pg/g	86
Consensus mean, pg/g	88
Standard deviation, pg/g	23
Relative standard deviation, %	26
No. of values reported	58
No. of values removed	0
No. of reported non-detects	0

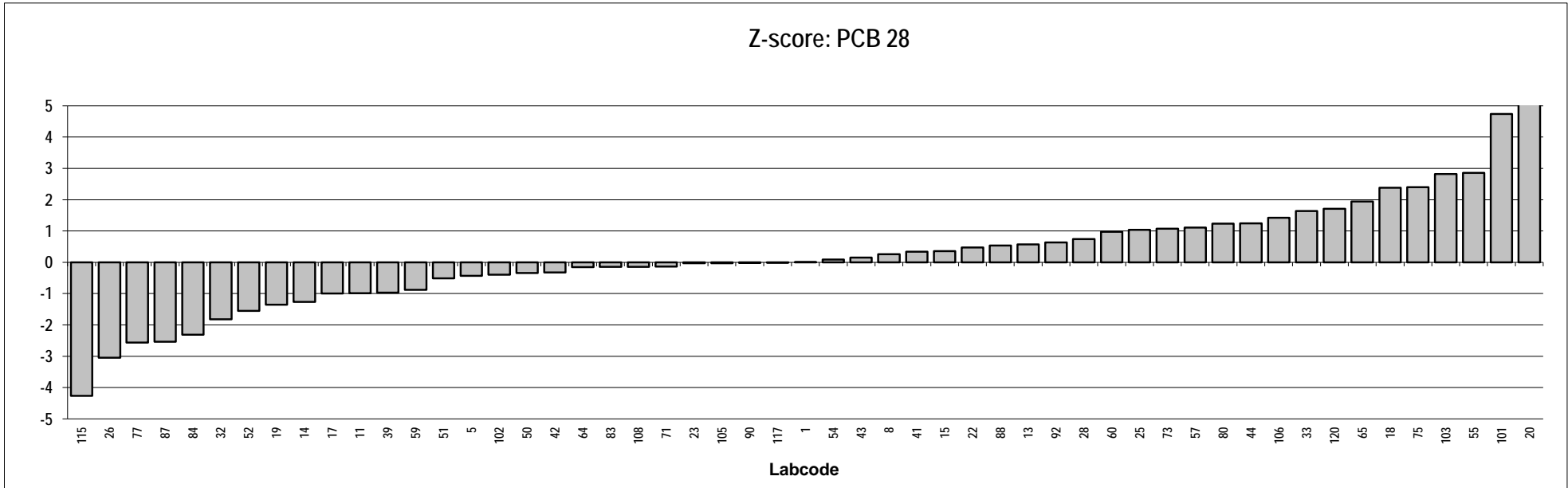
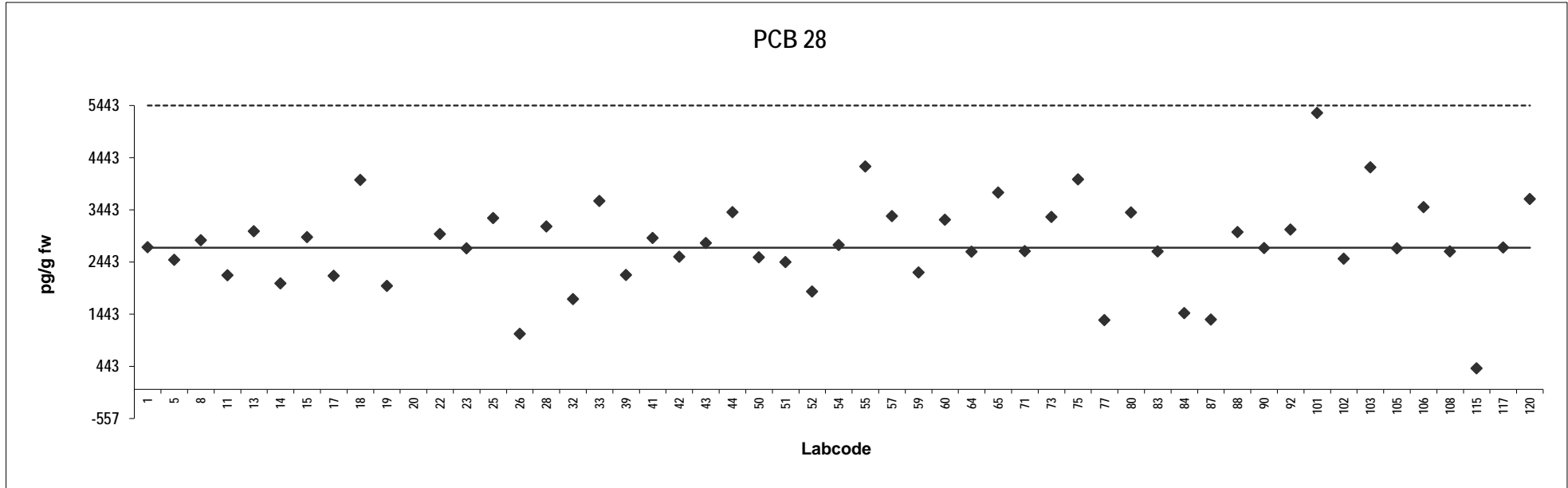


Cod liver
Congener: PCB 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2722	0.0071		102	2500	-0.40	
5	2481	-0.44		103	4252	2.8	
8	2857	0.26		105	2700	-0.033	
11	2183	-0.98		106	3491	1.4	
13	3029	0.57		108	2640	-0.14	
14	2030	-1.3		115	400	-4.3	
15	2914	0.36		117	2714	-0.0071	
17	2176	-1.0		120	3647	1.7	
18	4010	2.4					
19	1982	-1.4					
20	7087	8.0	Outlier				
22	2975	0.47					
23	2700	-0.033					
25	3283	1.0					
26	1062	-3.0					
28	3120	0.74					
32	1728	-1.8					
33	3610	1.6					
39	2190	-0.97					
41	2900	0.34					
42	2540	-0.33					
43	2800	0.15					
44	3395	1.2					
50	2530	-0.35					
51	2439	-0.51					
52	1873	-1.6					
54	2766	0.089					
55	4270	2.9					
57	3320	1.1					
59	2240	-0.88					
60	3247	0.97					
64	2636	-0.15					
65	3771	1.9					
71	2645	-0.13					
73	3300	1.1					
75	4022	2.4					
77	1325	-2.6					
80	3390	1.2					
83	2640	-0.14					
84	1460	-2.3					
87	1338	-2.5					
88	3010	0.54					
90	2706	-0.022					
92	3060	0.63					
101	5294	4.7					

Consensus statistics

Consensus median, pg/g	2718
Median all values pg/g	2722
Consensus mean, pg/g	2775
Standard deviation, pg/g	868
Relative standard deviation, %	31
No. of values reported	53
No. of values removed	1
No. of reported non-detects	0

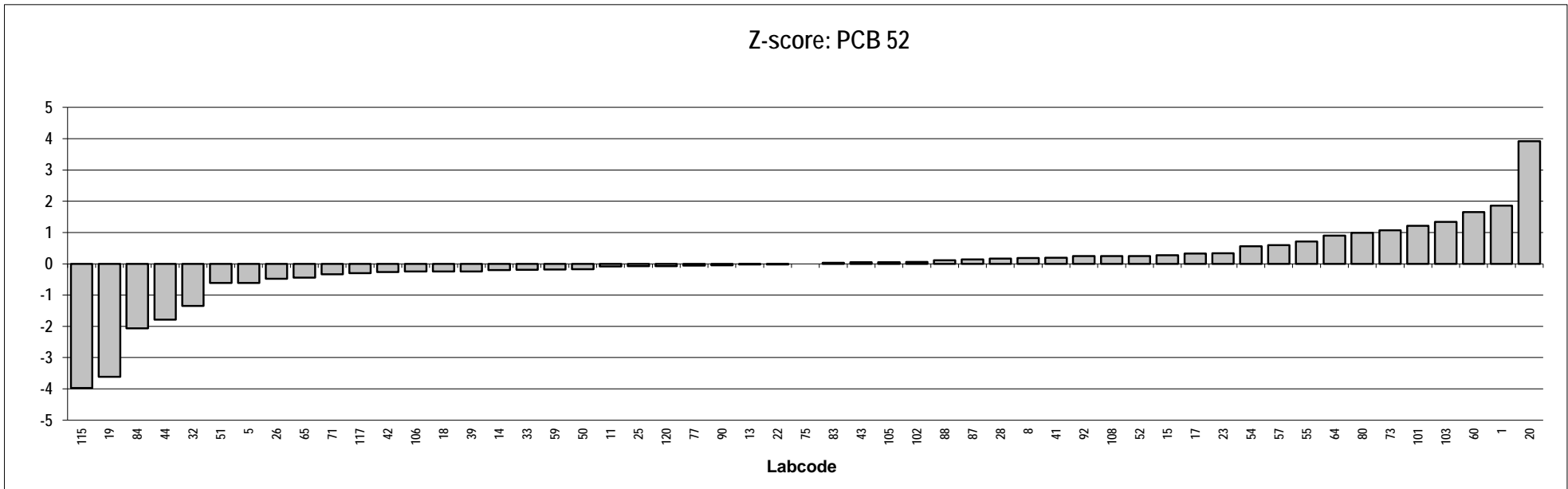
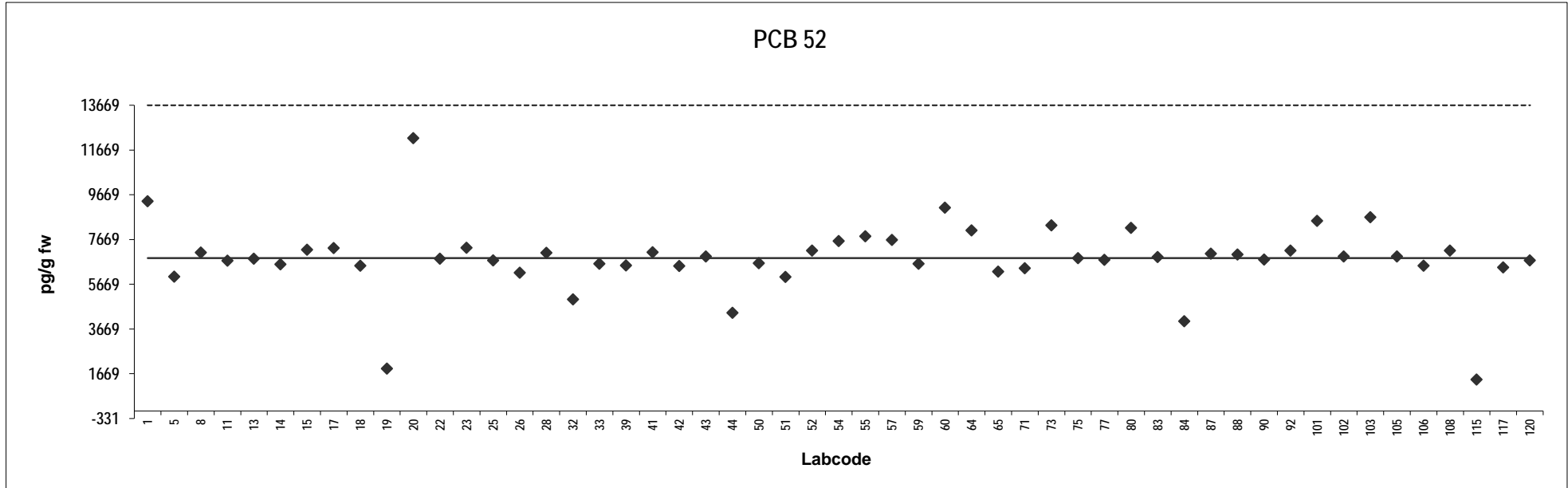


Cod liver
Congener: PCB 52

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	9380	1.9		102	6910	0.055	
5	6000	-0.61		103	8663	1.3	
8	7085	0.18		105	6900	0.048	
11	6717	-0.086		106	6493	-0.25	
13	6802	-0.024		108	7170	0.25	
14	6560	-0.20		115	1400	-4.0	
15	7208	0.27		117	6419	-0.30	
17	7280	0.33		120	6736	-0.072	
18	6495	-0.25					
19	1891	-3.6					
20	12192	3.9					
22	6803	-0.023					
23	7300	0.34					
25	6730	-0.077					
26	6182	-0.48					
28	7063	0.17					
32	4993	-1.3					
33	6577	-0.19					
39	6500	-0.24					
41	7100	0.19					
42	6480	-0.26					
43	6900	0.048					
44	4391	-1.8					
50	6600	-0.17					
51	5997	-0.61					
52	7172	0.25					
54	7596	0.56					
55	7803	0.71					
57	7650	0.60					
59	6580	-0.19					
60	9091	1.7					
64	8068	0.90					
65	6230	-0.44					
71	6376	-0.34					
73	8300	1.1					
75	6835	0.00					
77	6756	-0.058					
80	8190	0.99					
83	6880	0.033					
84	4010	-2.1					
87	7029	0.14					
88	6990	0.11					
90	6766	-0.050					
92	7170	0.25					
101	8498	1.2					

Consensus statistics

Consensus median, pg/g	6835
Median all values pg/g	6835
Consensus mean, pg/g	6828
Standard deviation, pg/g	1581
Relative standard deviation, %	23
No. of values reported	53
No. of values removed	0
No. of reported non-detects	0



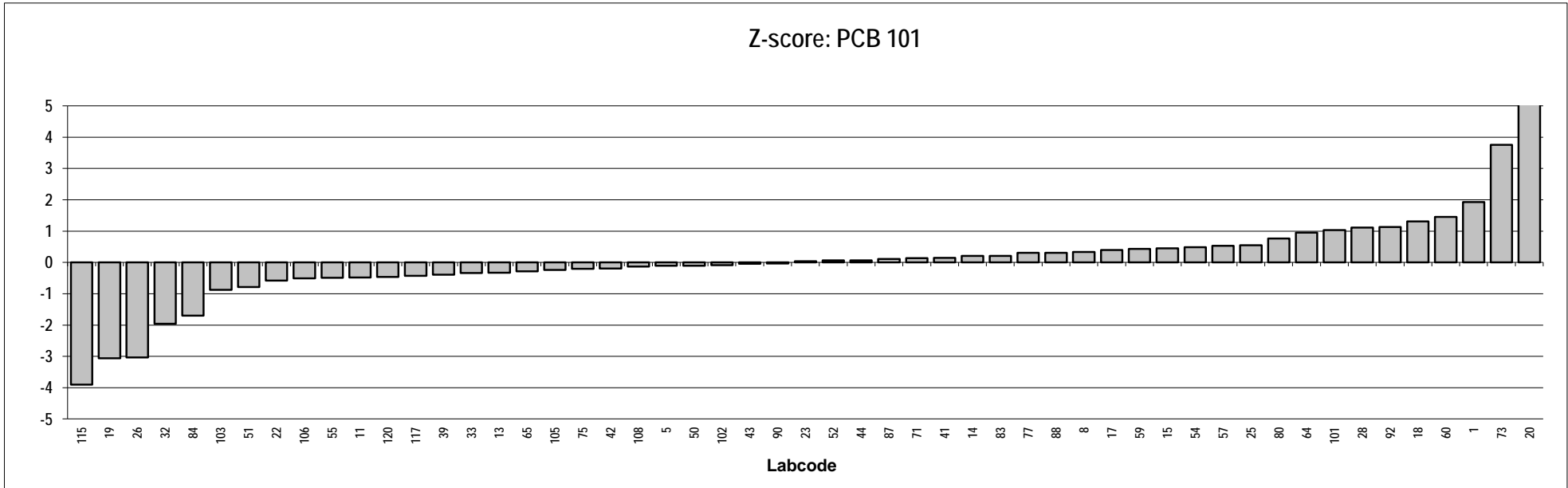
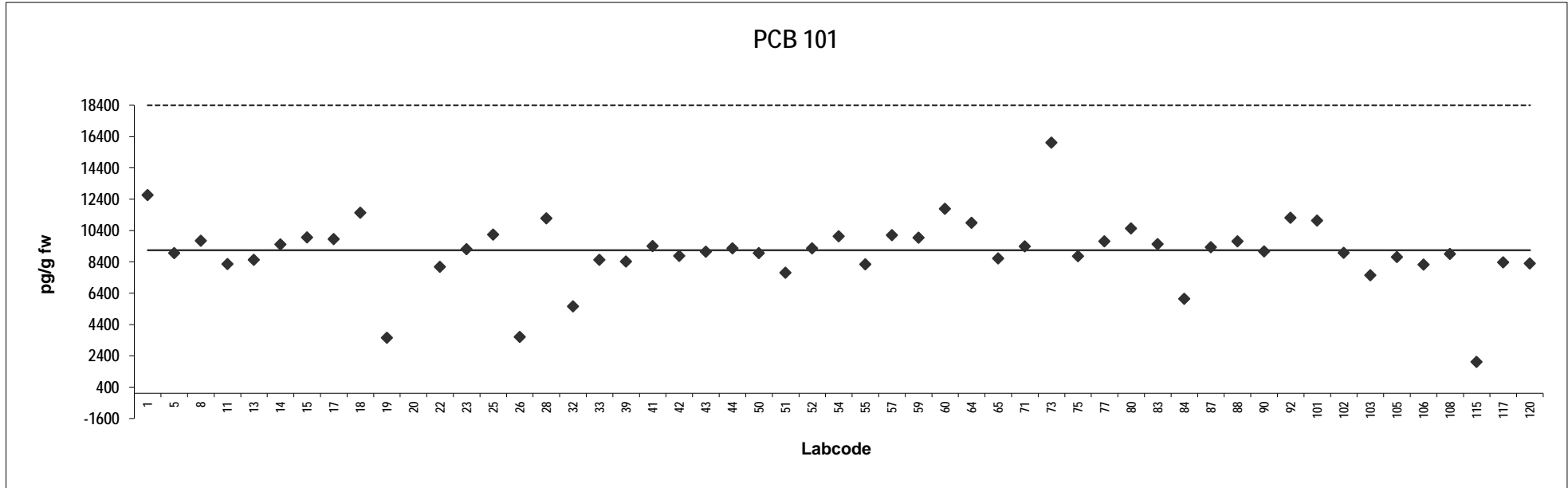
Cod liver

Congener: PCB 101

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	12658	1.9		102	8970	-0.089	
5	8950	-0.10		103	7538	-0.87	
8	9741	0.33		105	8700	-0.24	
11	8255	-0.48		106	8210	-0.51	
13	8531	-0.33		108	8900	-0.13	
14	9510	0.21		115	2000	-3.9	
15	9956	0.45		117	8358	-0.42	
17	9855	0.40		120	8282	-0.47	
18	11527	1.3					
19	3539	-3.1					
20	18963	5.4	Outlier				
22	8068	-0.58					
23	9200	0.037					
25	10136	0.55					
26	3598	-3.0					
28	11171	1.1					
32	5552	-2.0					
33	8520	-0.34					
39	8420	-0.39					
41	9400	0.15					
42	8780	-0.19					
43	9050	-0.046					
44	9259	0.069					
50	8950	-0.10					
51	7702	-0.78					
52	9256	0.067					
54	10026	0.49					
55	8235	-0.49					
57	10100	0.53					
59	9930	0.44					
60	11788	1.5					
64	10879	0.96					
65	8609	-0.29					
71	9385	0.14					
73	16000	3.8					
75	8759	-0.21					
77	9699	0.31					
80	10527	0.76					
83	9520	0.21					
84	6030	-1.7					
87	9336	0.11					
88	9700	0.31					
90	9067	-0.037					
92	11200	1.1					
101	11024	1.0					

Consensus statistics

Consensus median, pg/g	9133
Median all values pg/g	9200
Consensus mean, pg/g	9045
Standard deviation, pg/g	2178
Relative standard deviation, %	24
No. of values reported	53
No. of values removed	1
No. of reported non-detects	0

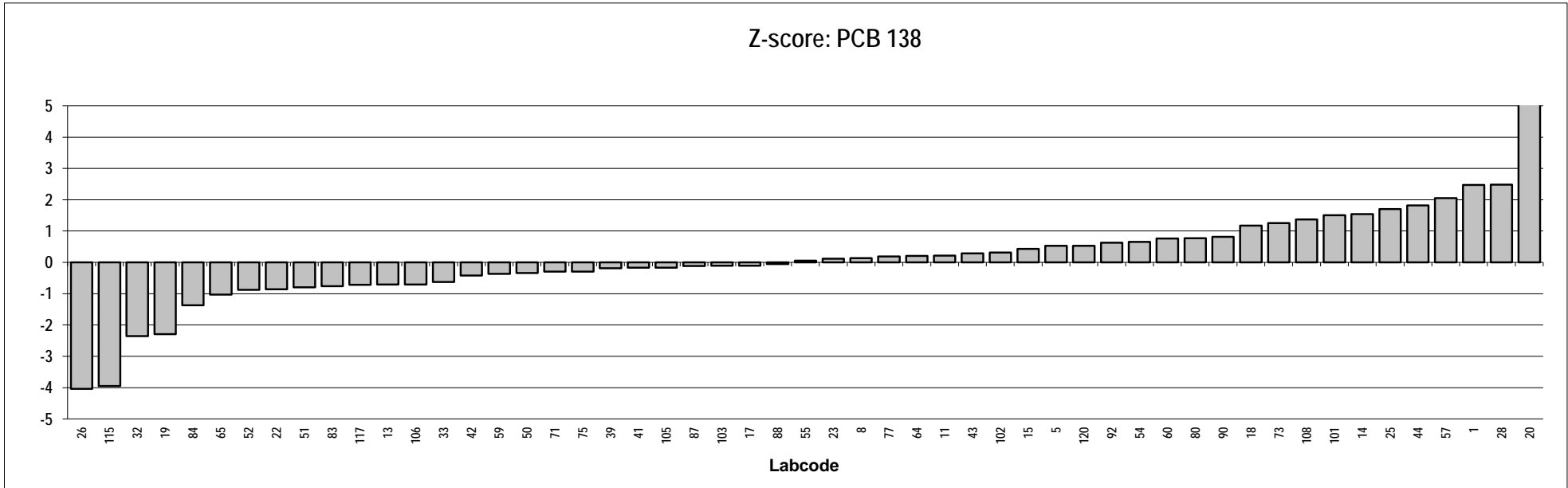
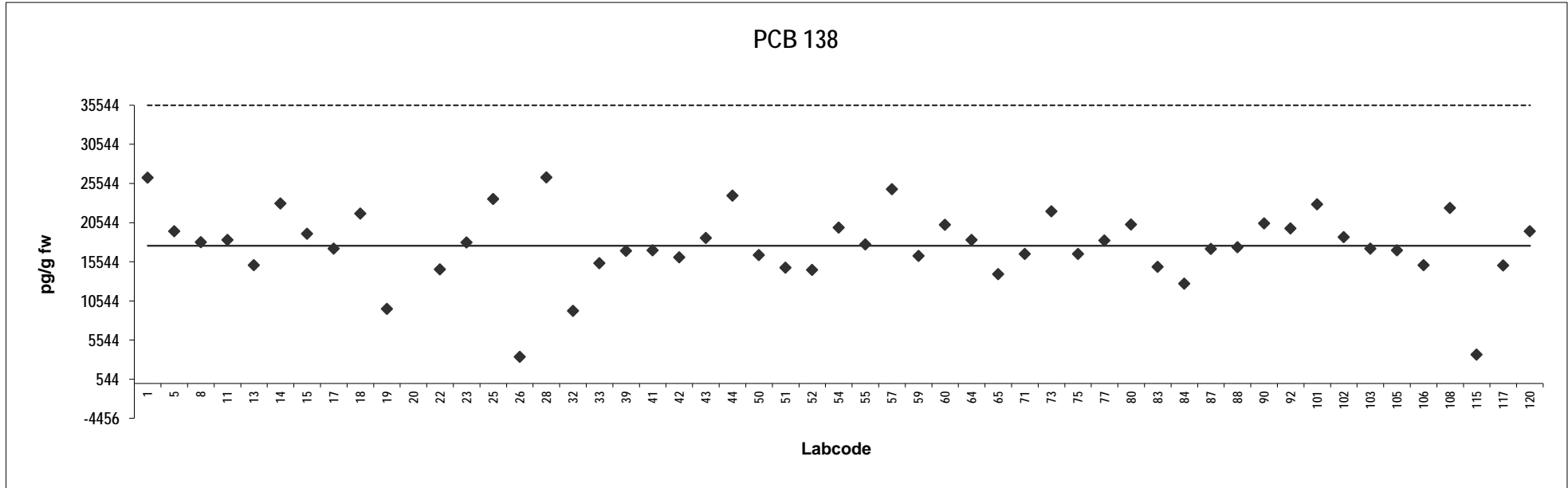


Cod liver
Congener: PCB 138

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	26297	2.5		102	18700	0.32	
5	19443	0.53		103	17207	-0.11	
8	18050	0.13		105	17000	-0.17	
11	18350	0.22		106	15108	-0.70	
13	15108	-0.70		108	22400	1.4	
14	23000	1.5		115	3700	-3.9	
15	19110	0.43		117	15080	-0.71	
17	17218	-0.10		120	19449	0.53	
18	21703	1.2					
19	9515	-2.3					
20	44924	7.8	Outlier				
22	14556	-0.86					
23	18000	0.12					
25	23574	1.7					
26	3392	-4.0					
28	26309	2.5					
32	9289	-2.4					
33	15375	-0.63					
39	16940	-0.18					
41	17000	-0.17					
42	16100	-0.42					
43	18600	0.29					
44	23975	1.8					
50	16400	-0.34					
51	14782	-0.80					
52	14491	-0.88					
54	19898	0.66					
55	17772	0.053					
57	24800	2.1					
59	16300	-0.37					
60	20275	0.76					
64	18330	0.21					
65	13969	-1.0					
71	16542	-0.30					
73	22000	1.3					
75	16543	-0.30					
77	18267	0.19					
80	20300	0.77					
83	14900	-0.76					
84	12760	-1.4					
87	17186	-0.11					
88	17400	-0.053					
90	20458	0.82					
92	19800	0.63					
101	22870	1.5					

Consensus statistics

Consensus median, pg/g	17586
Median all values pg/g	17772
Consensus mean, pg/g	17608
Standard deviation, pg/g	4591
Relative standard deviation, %	26
No. of values reported	53
No. of values removed	1
No. of reported non-detects	0

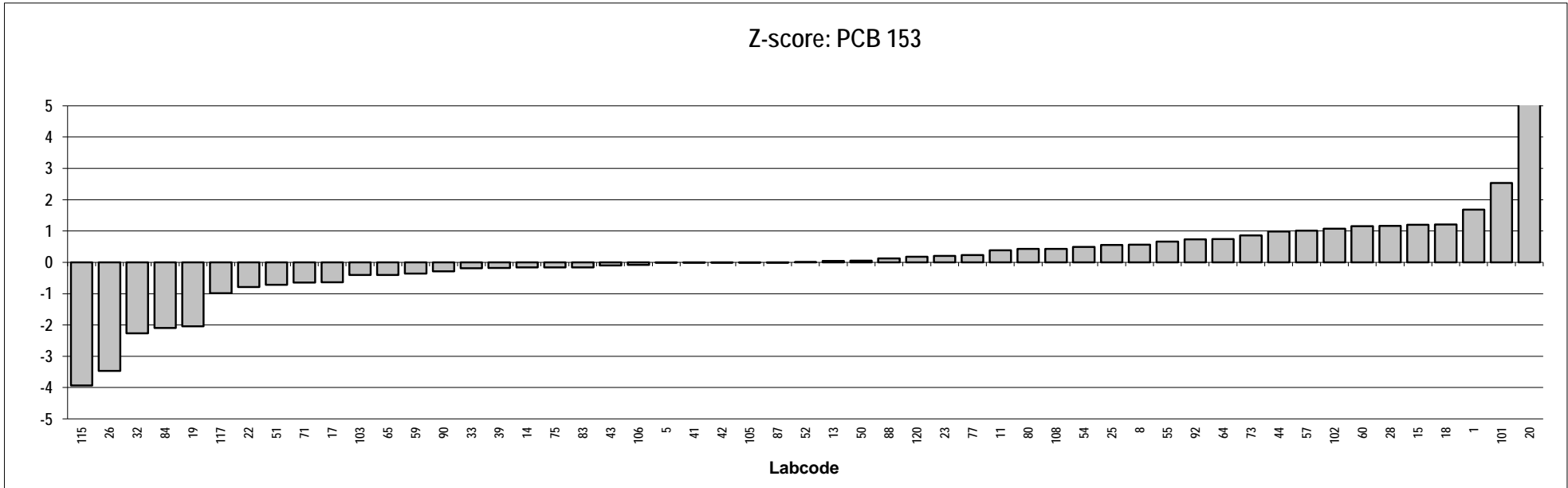
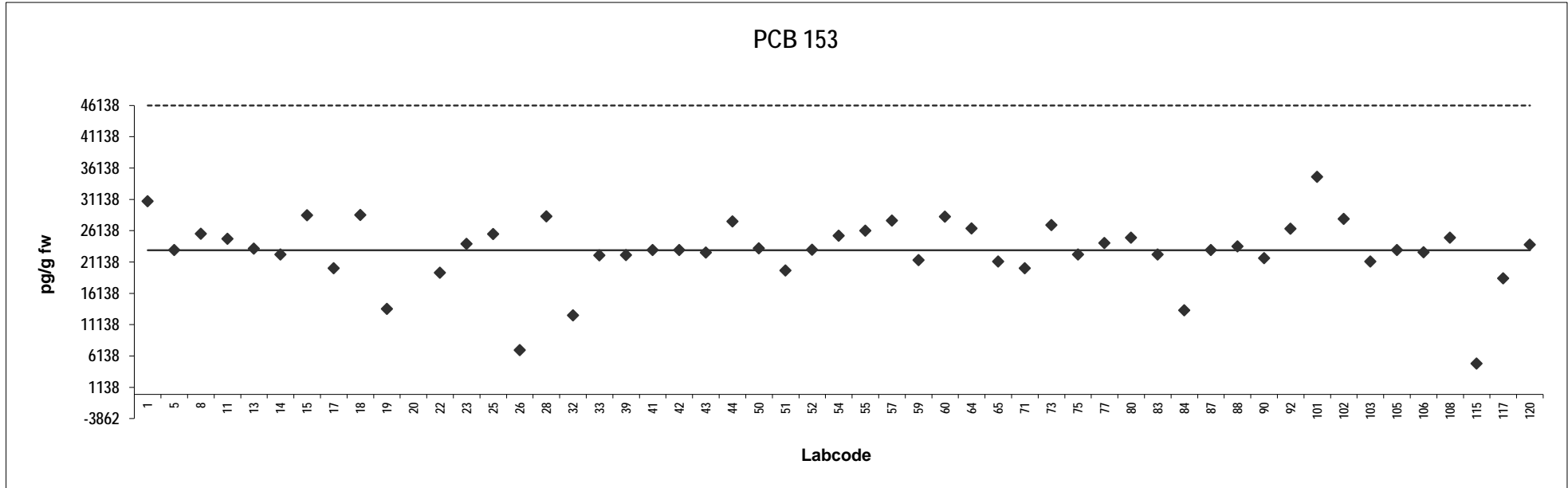


Cod liver
Congener: PCB 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	30798	1.7		102	28000	1.1	
5	22994	-0.0096		103	21157	-0.41	
8	25618	0.56		105	23000	-0.0083	
11	24810	0.38		106	22657	-0.083	
13	23246	0.045		108	25000	0.43	
14	22300	-0.16		115	4900	-3.9	
15	28559	1.2		117	18499	-0.99	
17	20121	-0.63		120	23865	0.18	
18	28626	1.2					
19	13621	-2.0					
20	47677	5.3	Outlier				
22	19389	-0.79					
23	24000	0.21					
25	25580	0.55					
26	7047	-3.5					
28	28394	1.2					
32	12602	-2.3					
33	22148	-0.19					
39	22190	-0.18					
41	23000	-0.0083					
42	23000	-0.0083					
43	22600	-0.095					
44	27569	0.98					
50	23300	0.057					
51	19740	-0.72					
52	23069	0.0067					
54	25296	0.49					
55	26105	0.67					
57	27700	1.0					
59	21400	-0.36					
60	28352	1.2					
64	26445	0.74					
65	21176	-0.40					
71	20082	-0.64					
73	27000	0.86					
75	22300	-0.16					
77	24122	0.24					
80	25000	0.43					
83	22310	-0.16					
84	13370	-2.1					
87	23007	-0.0067					
88	23600	0.12					
90	21705	-0.29					
92	26400	0.73					
101	34701	2.5					

Consensus statistics

Consensus median, pg/g	23038
Median all values pg/g	23069
Consensus mean, pg/g	22913
Standard deviation, pg/g	5265
Relative standard deviation, %	23
No. of values reported	53
No. of values removed	1
No. of reported non-detects	0

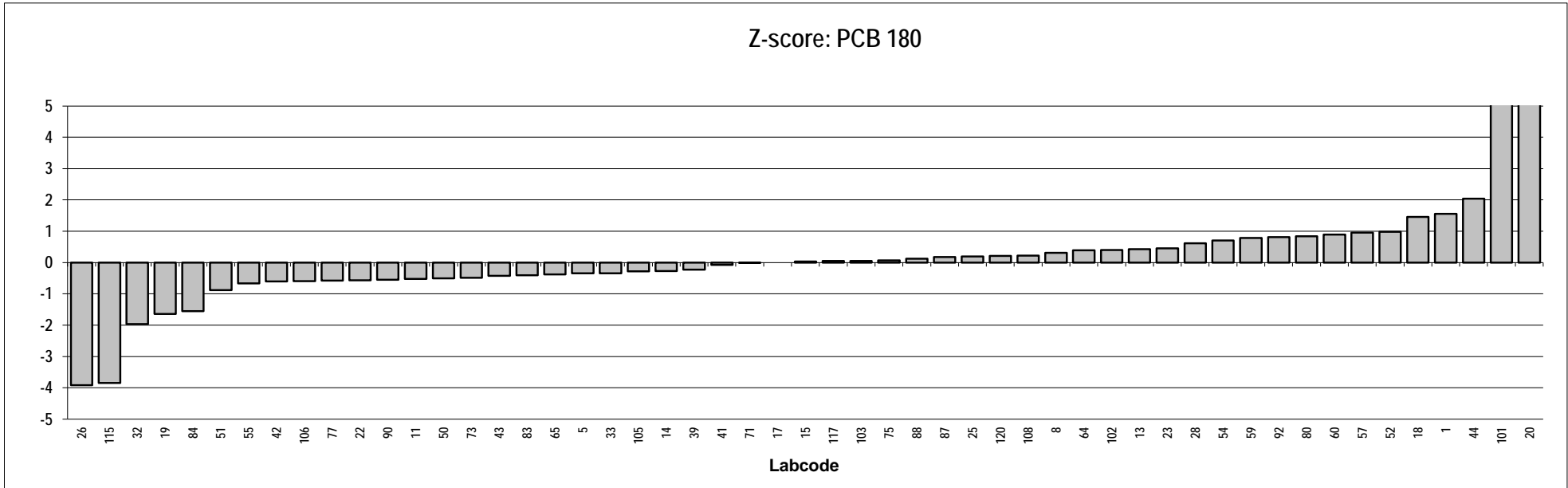
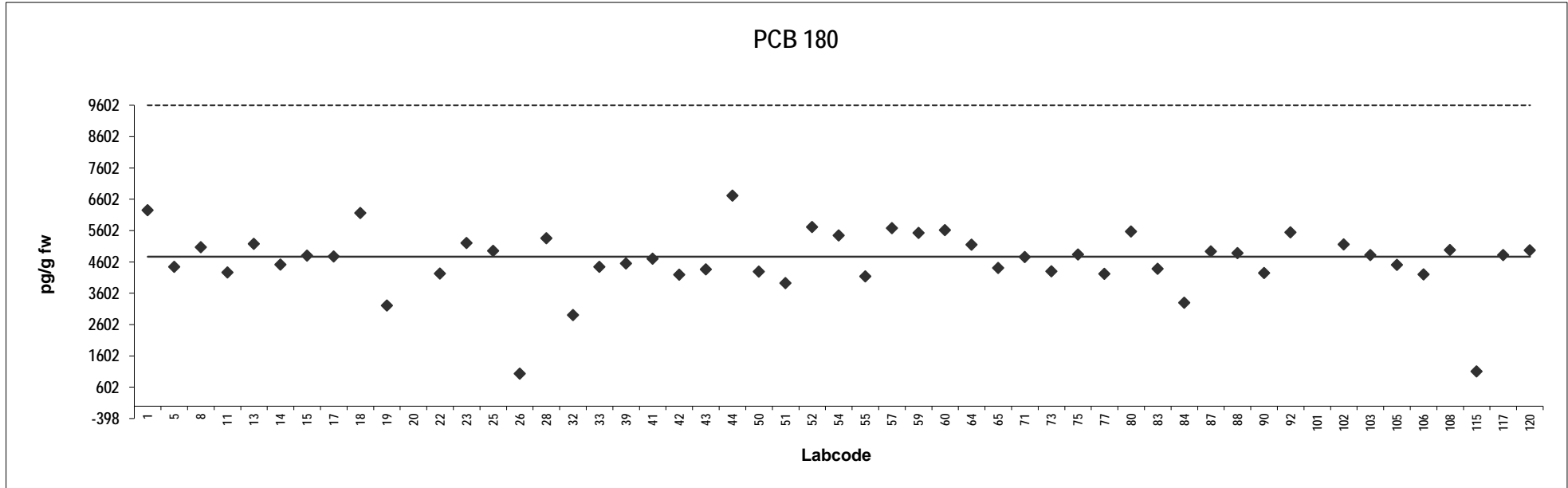


Cod liver
Congener: PCB 180

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	6247	1.6		102	5152	0.40	
5	4436	-0.35		103	4813	0.048	
8	5064	0.31		105	4500	-0.28	
11	4265	-0.53		106	4197	-0.60	
13	5173	0.43		108	4980	0.22	
14	4510	-0.27		115	1100	-3.8	
15	4801	0.036		117	4812	0.047	
17	4767	0.00		120	4970	0.21	
18	6155	1.5					
19	3202	-1.6					
20	13003	8.6	Outlier				
22	4225	-0.57					
23	5200	0.45					
25	4951	0.19					
26	1029	-3.9					
28	5353	0.61					
32	2897	-2.0					
33	4443	-0.34					
39	4550	-0.23					
41	4700	-0.070					
42	4190	-0.61					
43	4360	-0.43					
44	6712	2.0					
50	4290	-0.50					
51	3924	-0.88					
52	5708	0.99					
54	5442	0.71					
55	4134	-0.66					
57	5680	0.96					
59	5520	0.79					
60	5615	0.89					
64	5143	0.39					
65	4407	-0.38					
71	4755	-0.013					
73	4300	-0.49					
75	4837	0.073					
77	4216	-0.58					
80	5570	0.84					
83	4380	-0.41					
84	3290	-1.5					
87	4936	0.18					
88	4880	0.12					
90	4243	-0.55					
92	5540	0.81					
101	10032	5.5	Outlier				

Consensus statistics

Consensus median, pg/g	4767
Median all values pg/g	4801
Consensus mean, pg/g	4639
Standard deviation, pg/g	1027
Relative standard deviation, %	22
No. of values reported	53
No. of values removed	2
No. of reported non-detects	0



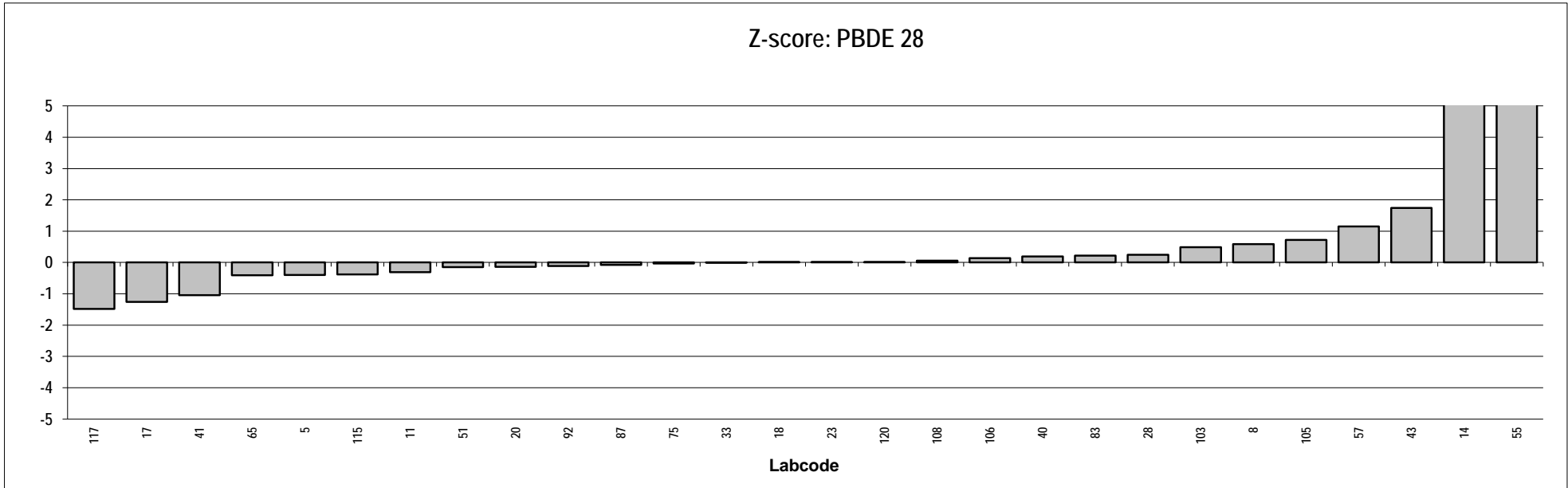
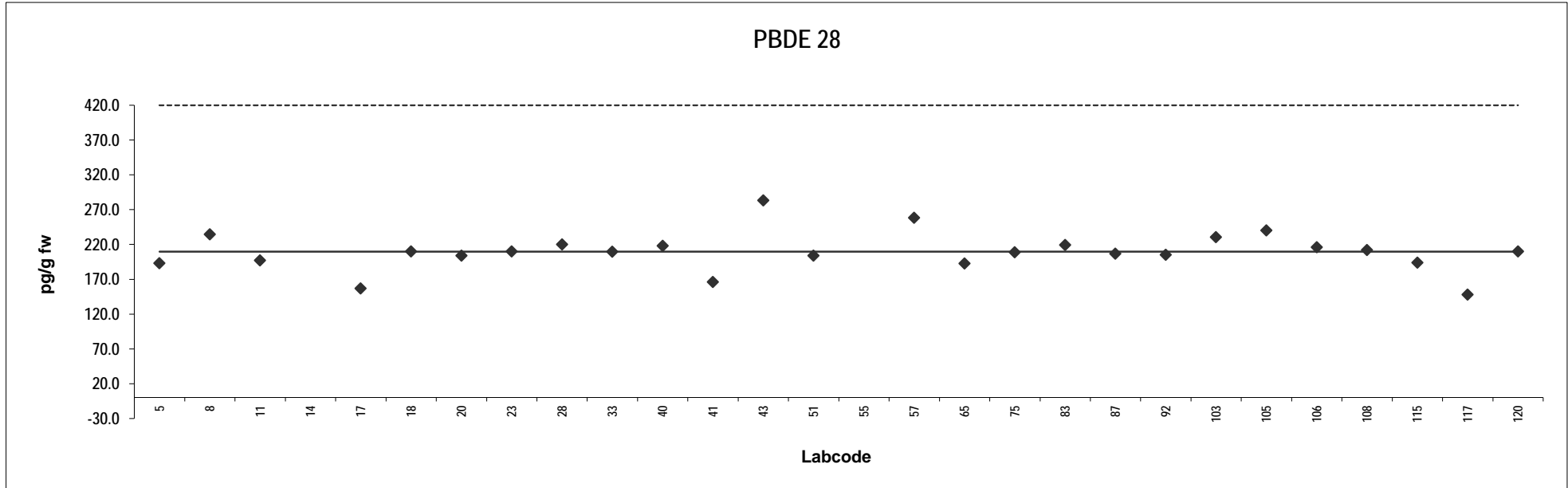
Cod liver

Congener: PBDE 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	193	-0.40					
8	234	0.58					
11	197	-0.31					
14	469	6.2	Outlier				
17	157	-1.3					
18	210	0.0058					
20	204	-0.14					
23	210	0.0058					
28	220	0.25					
33	210	-0.0058					
40	218	0.20					
41	166	-1.0					
43	283	1.7					
51	204	-0.15					
55	592	9.1	Outlier				
57	258	1.2					
65	193	-0.41					
75	209	-0.027					
83	219	0.22					
87	207	-0.073					
92	205	-0.11					
103	230	0.49					
105	240	0.72					
106	216	0.14					
108	212	0.054					
115	194	-0.38					
117	148	-1.5					
120	210	0.0061					

Consensus statistics

Consensus median, pg/g	210
Median all values pg/g	210
Consensus mean, pg/g	209
Standard deviation, pg/g	28
Relative standard deviation, %	13
No. of values reported	28
No. of values removed	2
No. of reported non-detects	0

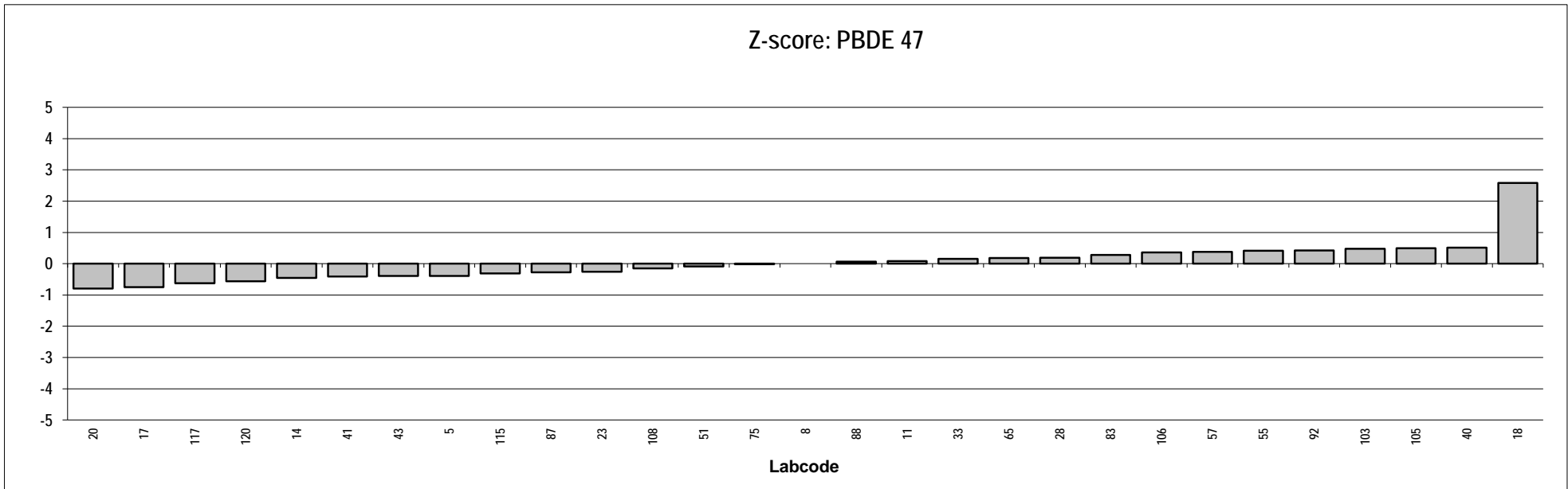
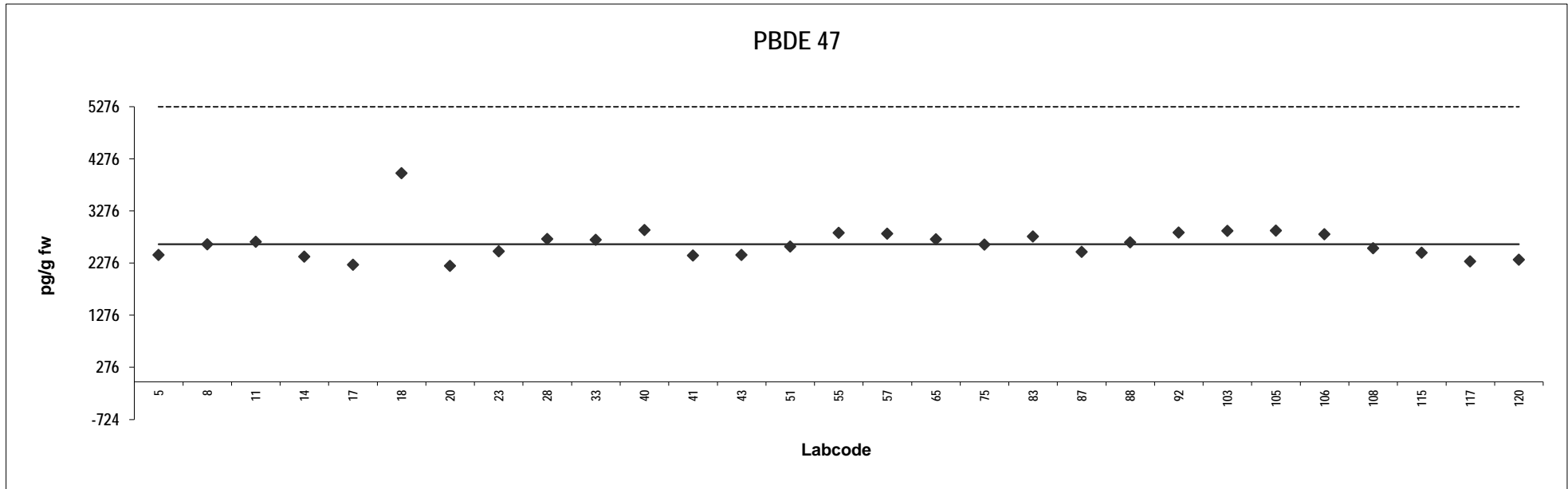


Cod liver
Congener: PBDE 47

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	2431	-0.39					
8	2638	0.00					
11	2681	0.082					
14	2400	-0.45					
17	2242	-0.75					
18	4001	2.6					
20	2220	-0.79					
23	2500	-0.26					
28	2738	0.19					
33	2719	0.15					
40	2910	0.52					
41	2420	-0.41					
43	2430	-0.39					
51	2593	-0.086					
55	2856	0.41					
57	2840	0.38					
65	2734	0.18					
75	2630	-0.015					
83	2786	0.28					
87	2491	-0.28					
88	2673	0.066					
92	2860	0.42					
103	2891	0.48					
105	2900	0.50					
106	2828	0.36					
108	2560	-0.15					
115	2473	-0.31					
117	2310	-0.62					
120	2342	-0.56					

Consensus statistics

Consensus median, pg/g	2638
Median all values pg/g	2638
Consensus mean, pg/g	2659
Standard deviation, pg/g	331
Relative standard deviation, %	12
No. of values reported	29
No. of values removed	0
No. of reported non-detects	0

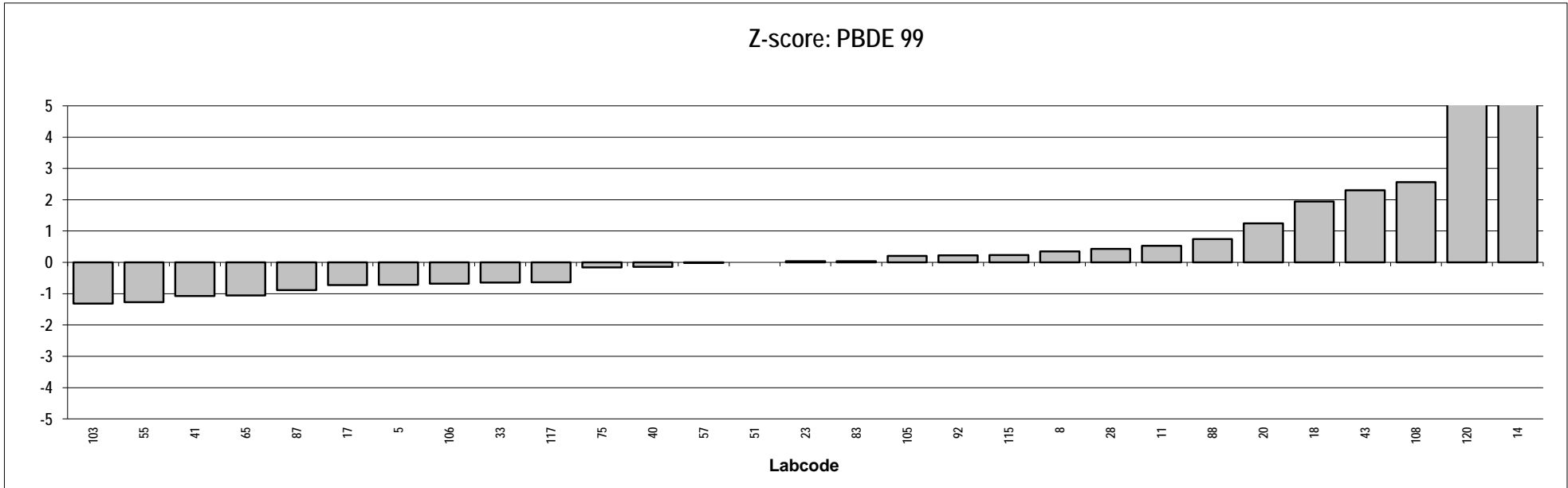
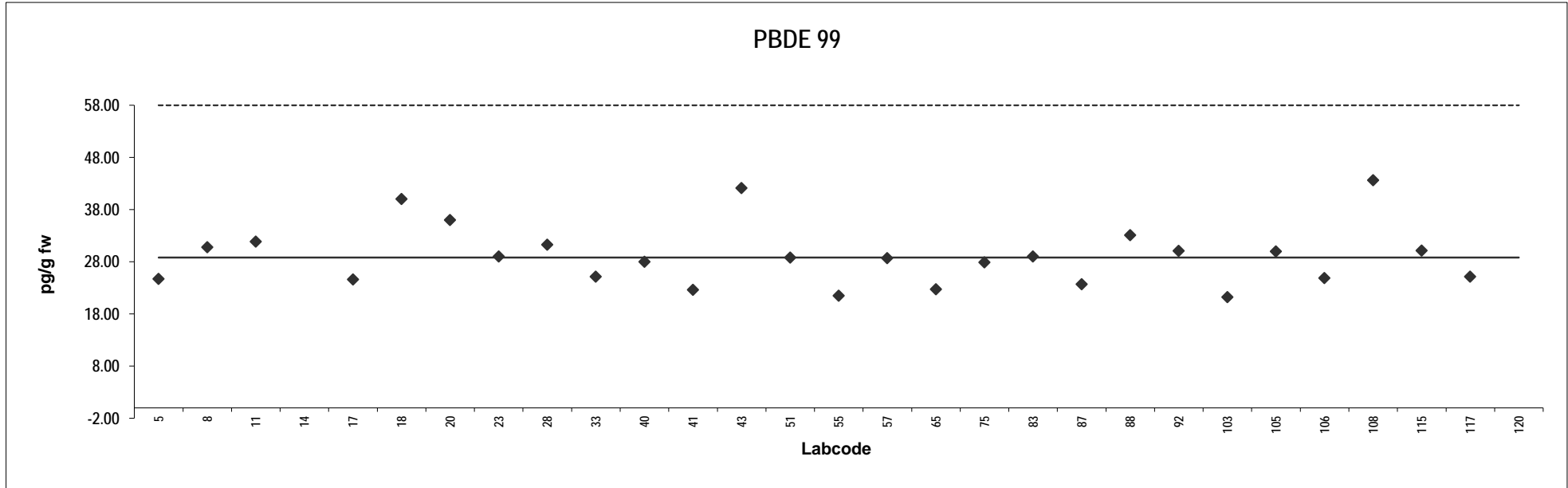


Cod liver
Congener: PBDE 99

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	25	-0.71					
8	31	0.35					
11	32	0.53					
14	427	69	Outlier				
17	25	-0.73					
18	40	1.9					
20	36	1.2					
23	29	0.033					
28	31	0.43					
33	25	-0.64					
40	28	-0.14					
41	23	-1.1					
43	42	2.3					
51	29	0.00					
55	21	-1.3					
57	29	-0.019					
65	23	-1.1					
75	28	-0.16					
83	29	0.033					
87	24	-0.89					
88	33	0.74					
92	30	0.22					
103	21	-1.3					
105	30	0.21					
106	25	-0.68					
108	44	2.6					
115	30	0.23					
117	25	-0.63					
120	80	8.9	Outlier				

Consensus statistics

Consensus median, pg/g	29
Median all values pg/g	29
Consensus mean, pg/g	29
Standard deviation, pg/g	5.9
Relative standard deviation, %	20
No. of values reported	29
No. of values removed	2
No. of reported non-detects	0



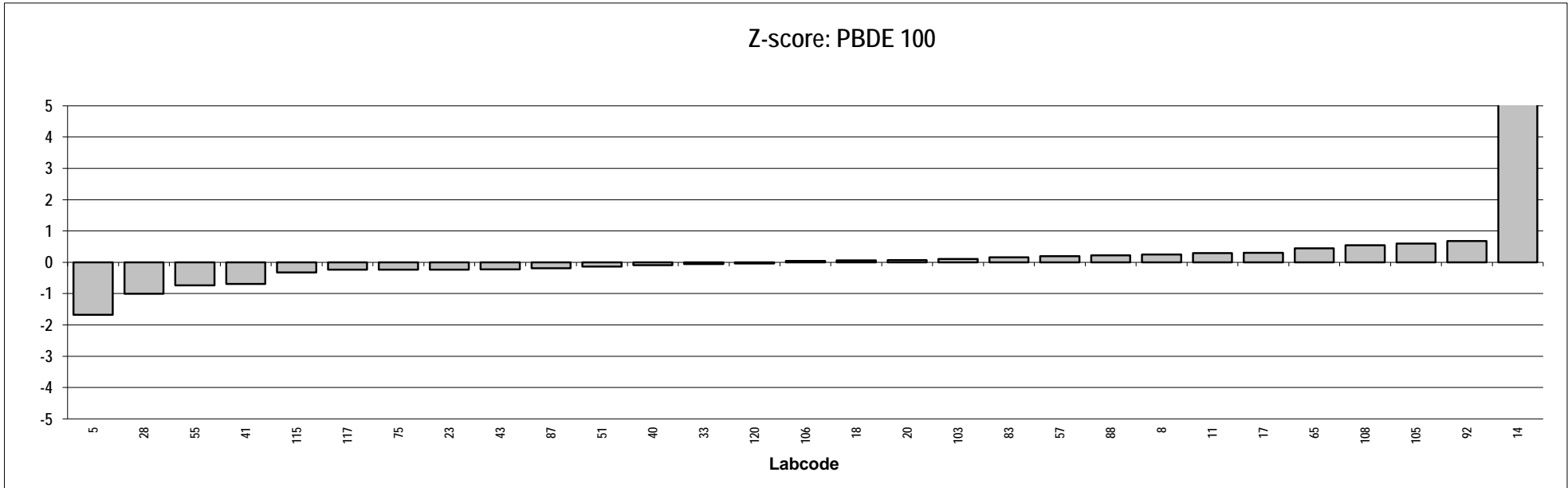
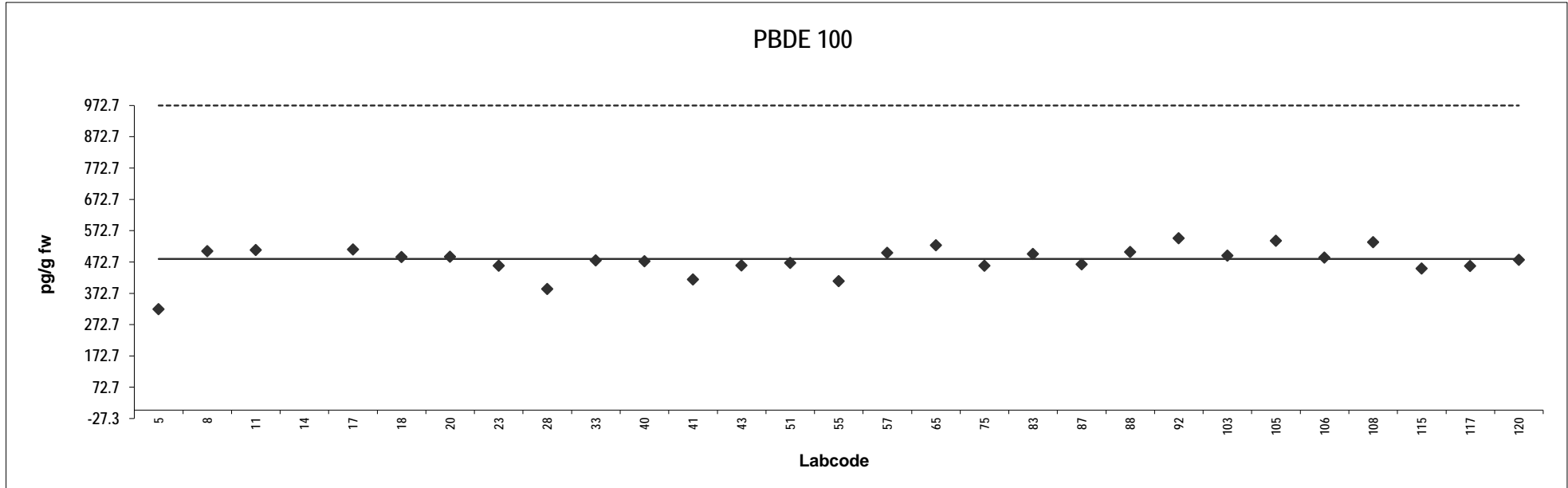
Cod liver

Congener: PBDE 100

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	321	-1.7					
8	507	0.25					
11	511	0.29					
14	981	5.2	Outlier				
17	512	0.30					
18	488	0.058					
20	489	0.068					
23	460	-0.23					
28	385	-1.0					
33	477	-0.058					
40	474	-0.087					
41	416	-0.69					
43	461	-0.22					
51	469	-0.14					
55	411	-0.74					
57	501	0.19					
65	525	0.44					
75	460	-0.23					
83	498	0.16					
87	464	-0.19					
88	504	0.22					
92	548	0.68					
103	493	0.10					
105	540	0.60					
106	486	0.041					
108	535	0.54					
115	451	-0.32					
117	460	-0.24					
120	479	-0.041					

Consensus statistics

Consensus median, pg/g	482
Median all values pg/g	486
Consensus mean, pg/g	476
Standard deviation, pg/g	48
Relative standard deviation, %	10
No. of values reported	29
No. of values removed	1
No. of reported non-detects	0

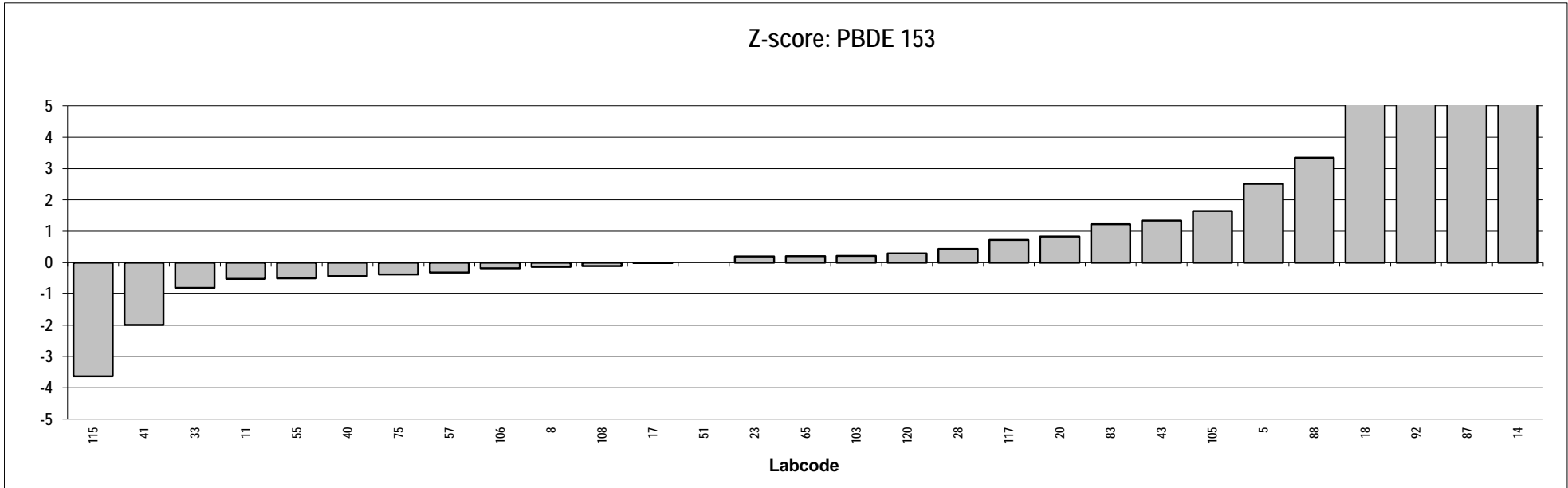
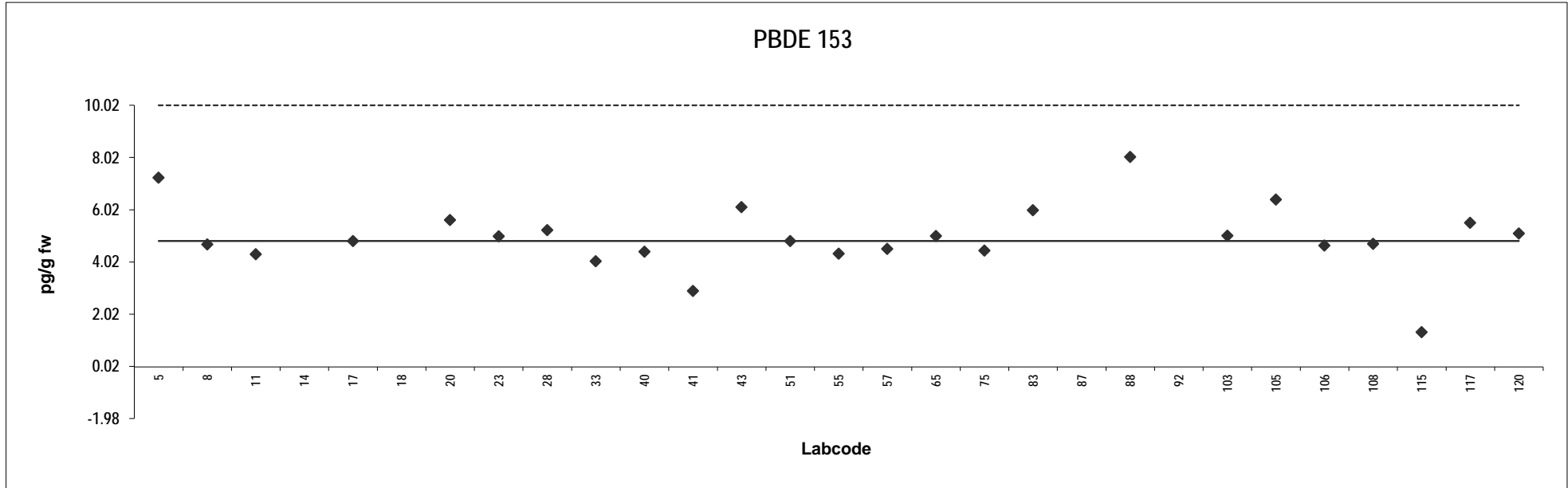


Cod liver
Congener: PBDE 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	7.2	2.5					
8	4.7	-0.14					
11	4.3	-0.52					
14	400	410	Outlier,ND				
17	4.8	-0.0082					
18	14	9.5	Outlier				
20	5.6	0.83					
23	5.0	0.19					
28	5.2	0.43					
33	4.0	-0.81					
40	4.4	-0.43					
41	2.9	-2.0					
43	6.1	1.3					
51	4.8	0.00					
55	4.3	-0.50					
57	4.5	-0.32					
65	5.0	0.20					
75	4.5	-0.38					
83	6.0	1.2					
87	230	233	Outlier				
88	8.0	3.3					
92	28	24	Outlier,ND				
103	5.0	0.21					
105	6.4	1.6					
106	4.6	-0.18					
108	4.7	-0.11					
115	1.3	-3.6					
117	5.5	0.72					
120	5.1	0.29					

Consensus statistics

Consensus median, pg/g	4.8
Median all values pg/g	5.0
Consensus mean, pg/g	5.0
Standard deviation, pg/g	1.3
Relative standard deviation, %	26
No. of values reported	29
No. of values removed	4
No. of reported non-detects	2

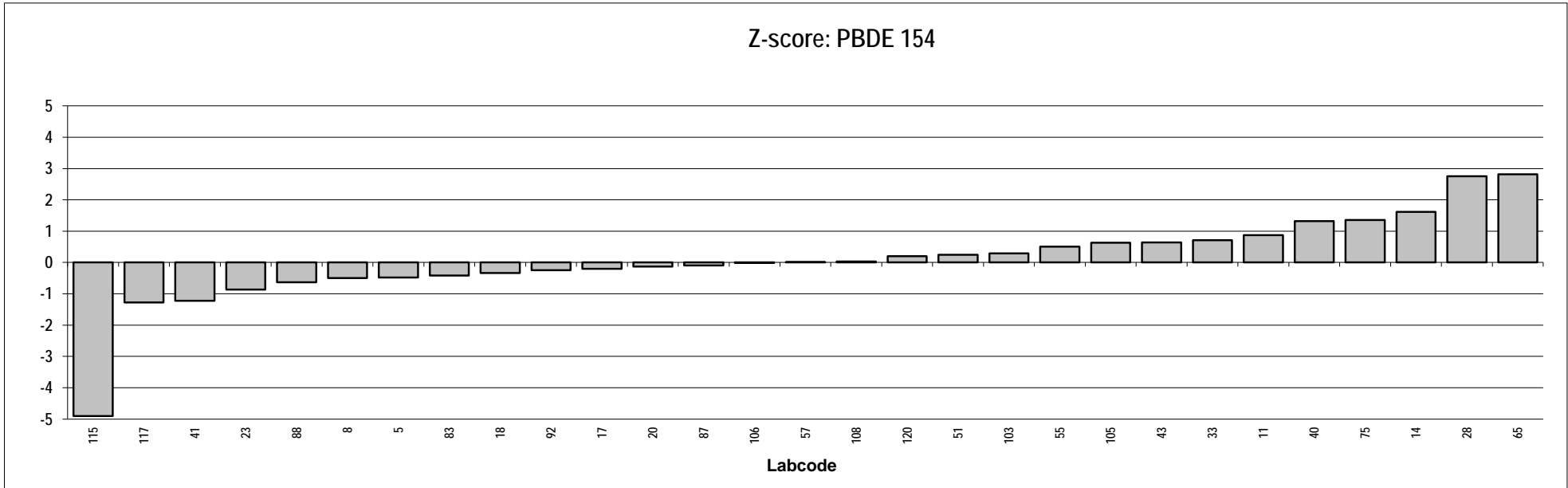
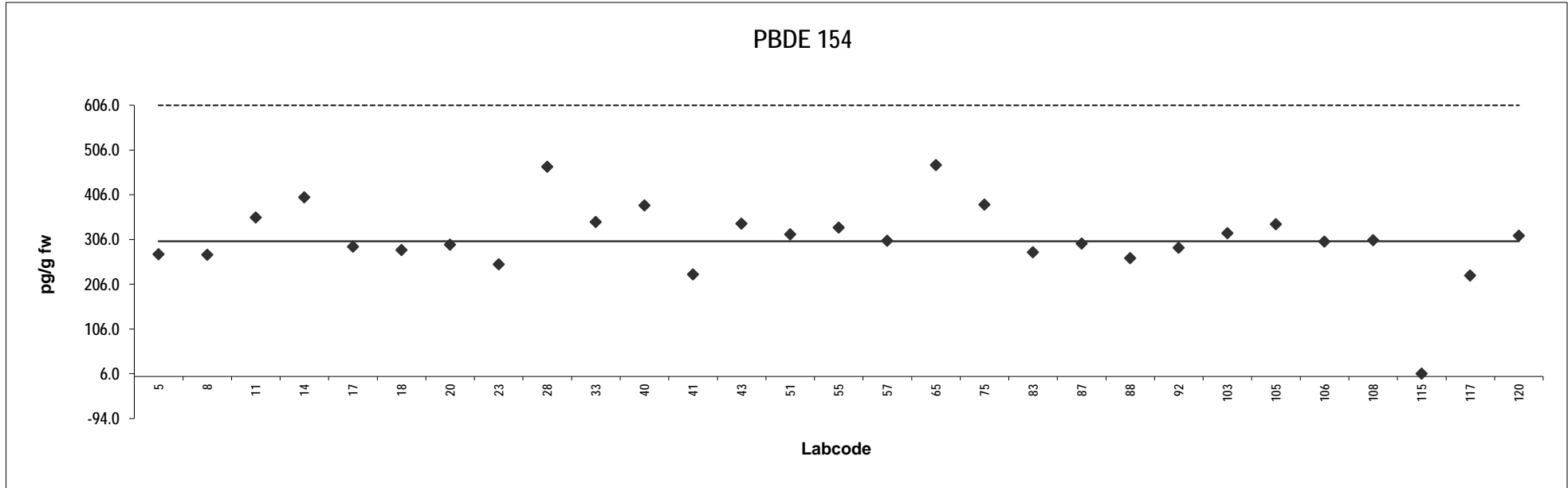


Cod liver
Congener: PBDE 154

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	273	-0.48					
8	272	-0.50					
11	355	0.87					
14	400	1.6	ND				
17	290	-0.21					
18	282	-0.33					
20	294	-0.13					
23	250	-0.86					
28	469	2.8					
33	345	0.71					
40	382	1.3					
41	228	-1.2					
43	341	0.64					
51	317	0.25					
55	332	0.50					
57	303	0.015					
65	472	2.8					
75	384	1.4					
83	277	-0.42					
87	297	-0.091					
88	264	-0.63					
92	287	-0.25					
103	320	0.29					
105	340	0.63					
106	301	-0.015					
108	304	0.031					
115	5.7	-4.9					
117	225	-1.3					
120	314	0.20					

Consensus statistics

Consensus median, pg/g	302
Median all values pg/g	303
Consensus mean, pg/g	308
Standard deviation, pg/g	83
Relative standard deviation, %	27
No. of values reported	29
No. of values removed	0
No. of reported non-detects	1

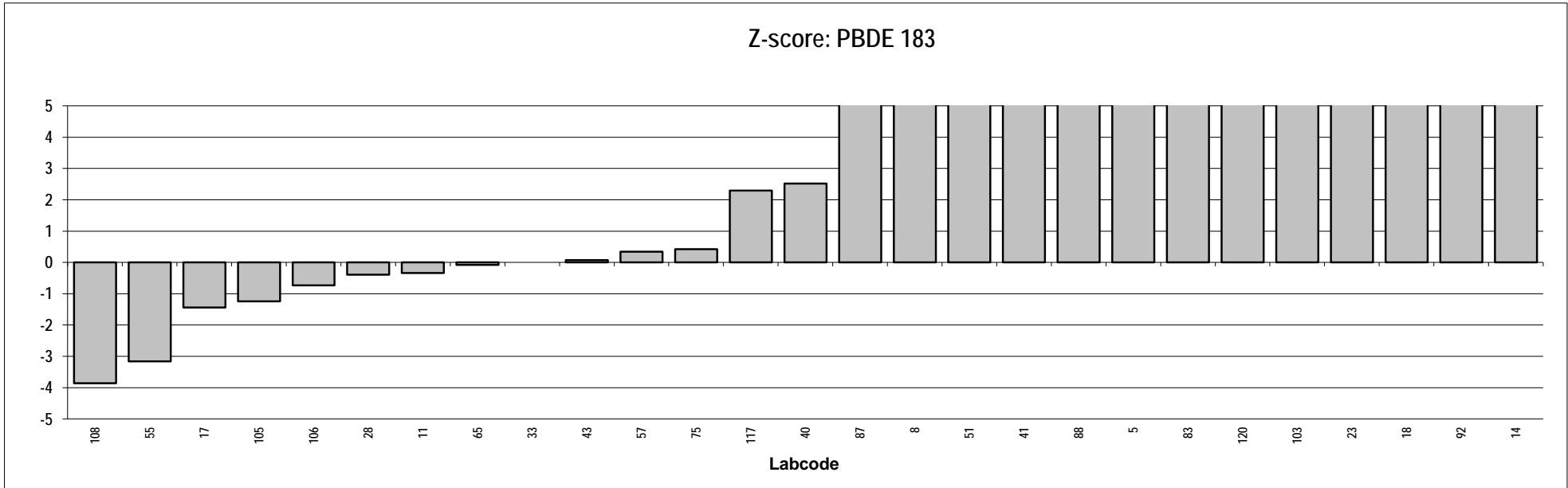
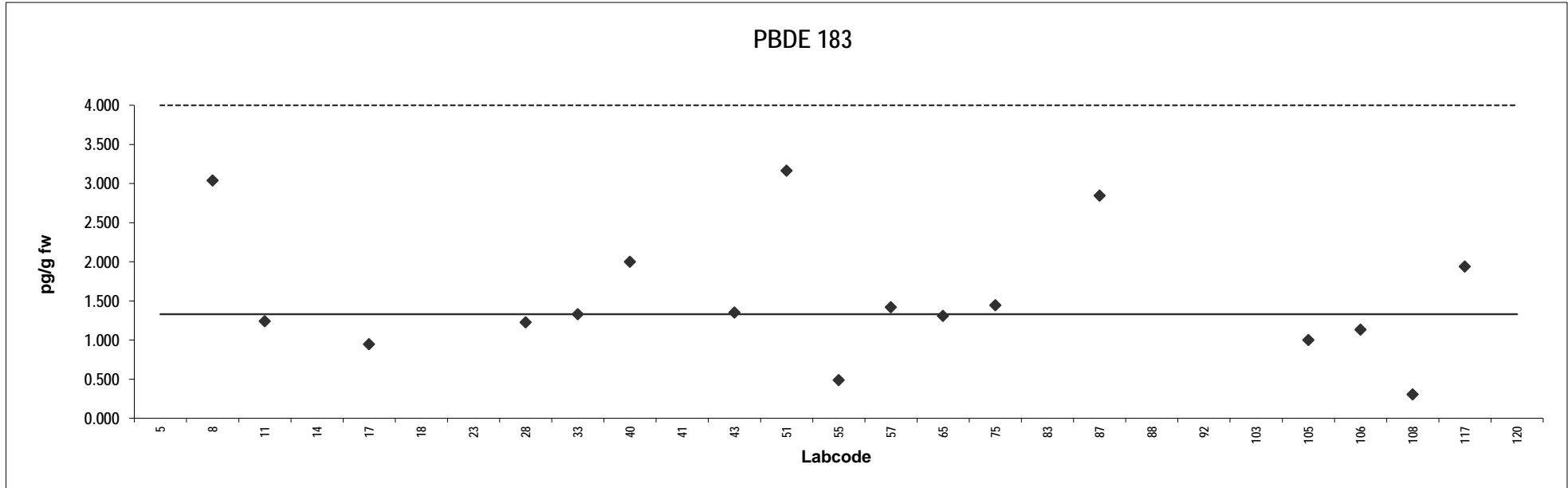


Cod liver
Congener: PBDE 183

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	5.2	14	Outlier				
8	3.0	6.4					
11	1.2	-0.34					
14	400	1499	Outlier,ND				
17	0.95	-1.4					
18	22	78	Outlier,ND				
23	16	55	Outlier,ND				
28	1.2	-0.40					
33	1.3	0.00					
40	2.0	2.5	ND				
41	4.9	13	Outlier				
43	1.4	0.075					
51	3.2	6.9					
55	0.49	-3.2					
57	1.4	0.34					
65	1.3	-0.075					
75	1.4	0.43					
83	6.0	18	Outlier,ND				
87	2.8	5.7					
88	5.0	14	Outlier,ND				
92	47	172	Outlier,ND				
103	10	33	Outlier				
105	1.0	-1.2	ND				
106	1.1	-0.73					
108	0.30	-3.9	ND				
117	1.9	2.3	ND				
120	6.4	19	Outlier,ND				

Consensus statistics

Consensus median, pg/g	1.3
Median all values pg/g	2.0
Consensus mean, pg/g	1.5
Standard deviation, pg/g	0.82
Relative standard deviation, %	53
No. of values reported	27
No. of values removed	10
No. of reported non-detects	11

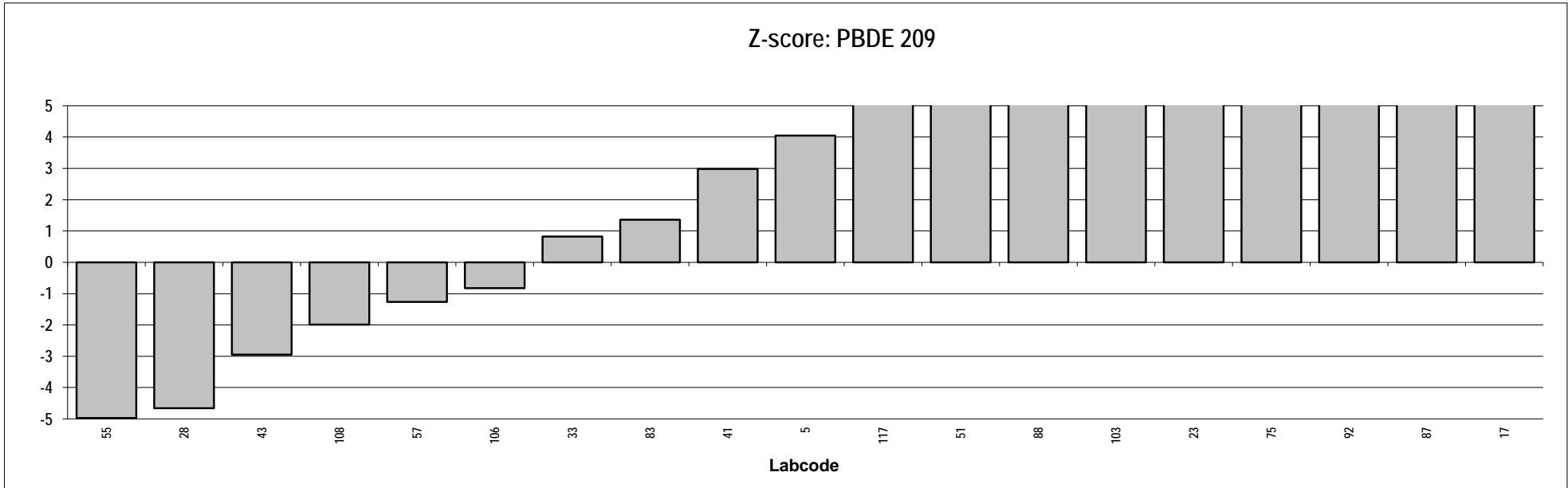
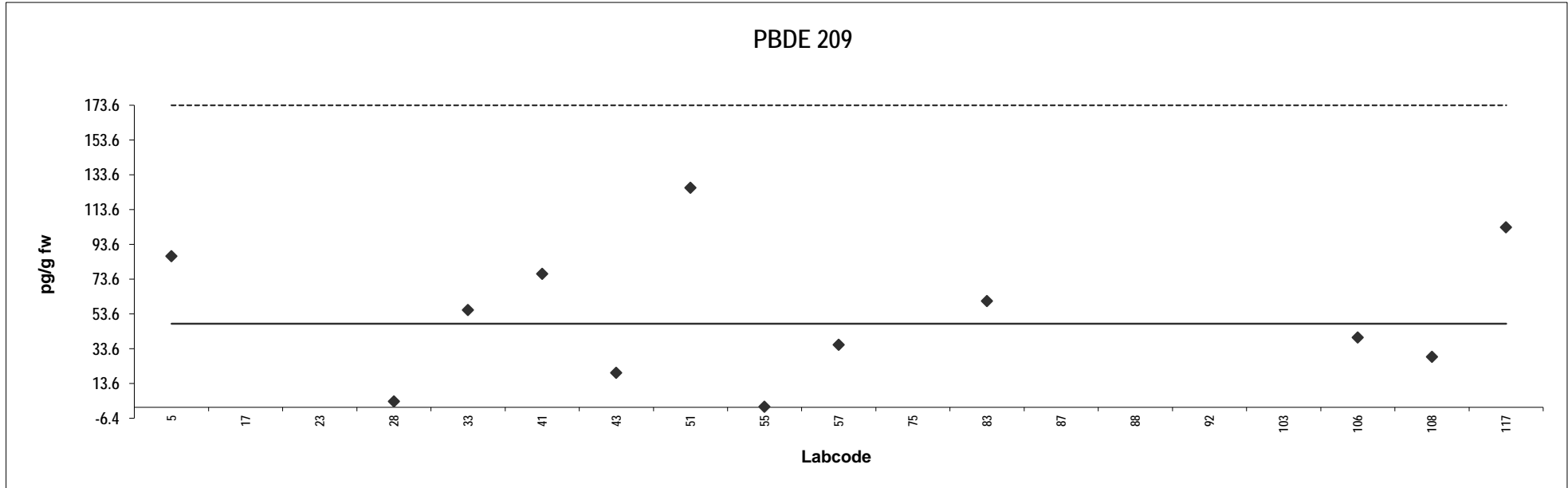


Cod liver
Congener: PBDE 209

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	87	4.0					
17	3776	389	Outlier				
23	590	57	Outlier,ND				
28	3.3	-4.7					
33	56	0.82					
41	77	3.0					
43	20	-2.9					
51	126	8.2	ND				
55	0.29	-5.0	ND				
57	36	-1.3					
75	763	75	Outlier				
83	61	1.4					
87	1232	123	Outlier				
88	200	16	Outlier,ND				
92	930	92	Outlier,ND				
103	369	33	Outlier				
106	40	-0.82					
108	29	-2.0					
117	103	5.8					

Consensus statistics

Consensus median, pg/g	48
Median all values pg/g	87
Consensus mean, pg/g	53
Standard deviation, pg/g	39
Relative standard deviation, %	74
No. of values reported	19
No. of values removed	7
No. of reported non-detects	5

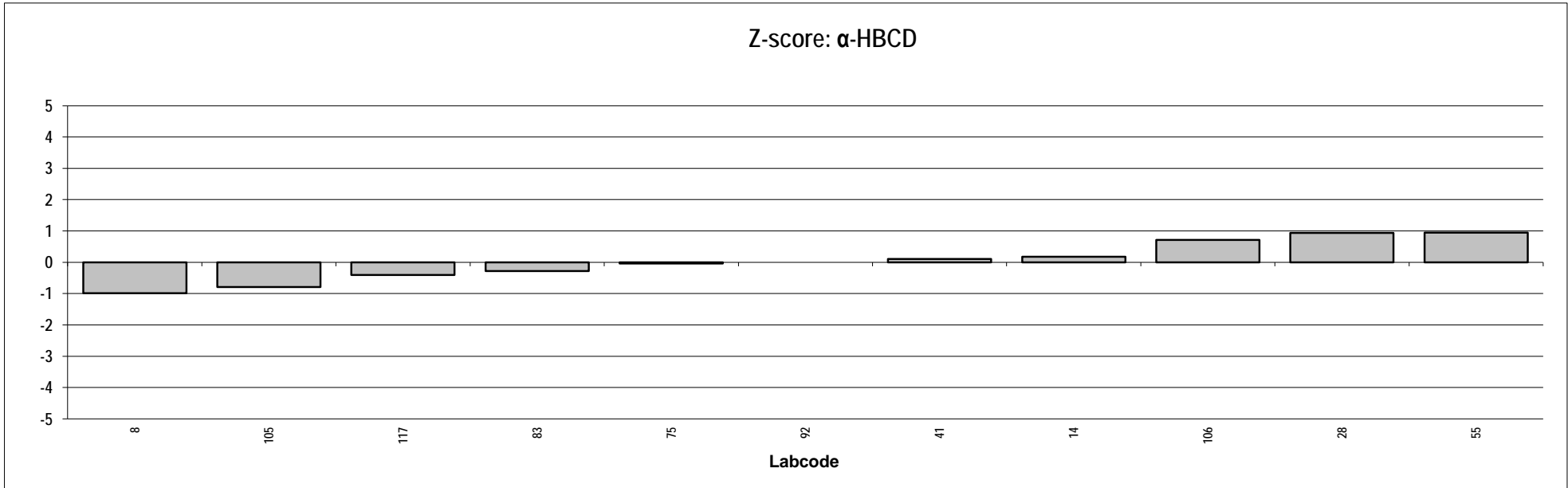
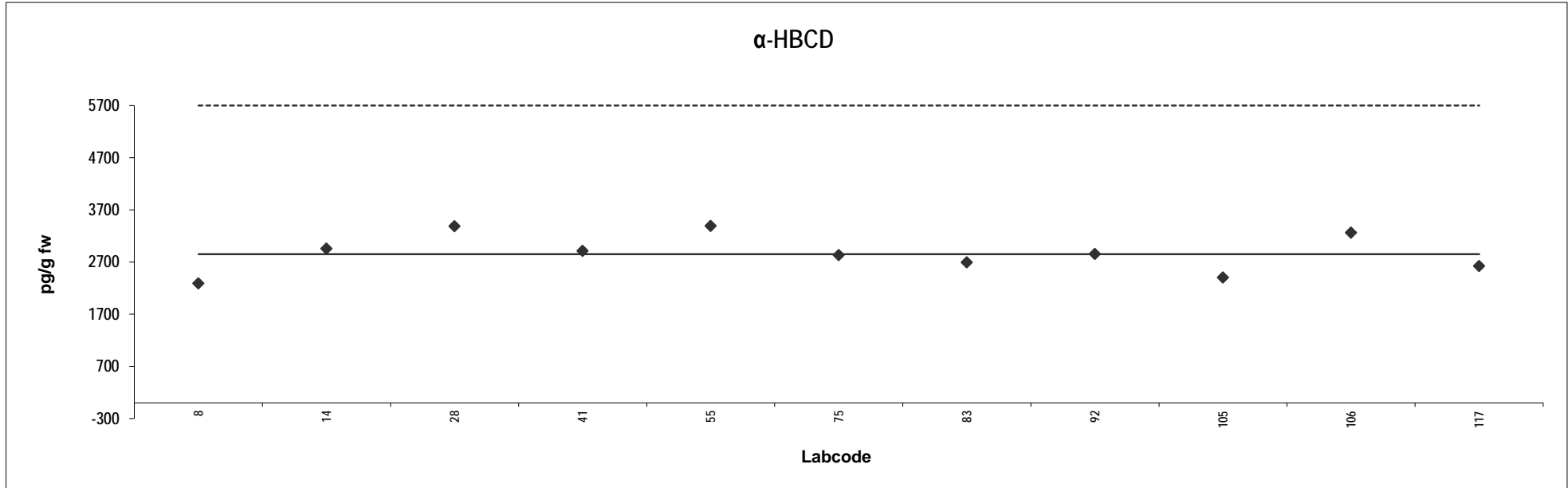


Cod liver
Congener: α -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	2287	-0.99					
14	2950	0.18					
28	3383	0.94					
41	2910	0.11					
55	3388	0.94					
75	2829	-0.037					
83	2690	-0.28					
92	2850	0.00					
105	2400	-0.79					
106	3256	0.71					
117	2620	-0.40					

Consensus statistics

Consensus median, pg/g	2850
Median all values pg/g	2850
Consensus mean, pg/g	2869
Standard deviation, pg/g	367
Relative standard deviation, %	13
No. of values reported	11
No. of values removed	0
No. of reported non-detects	0

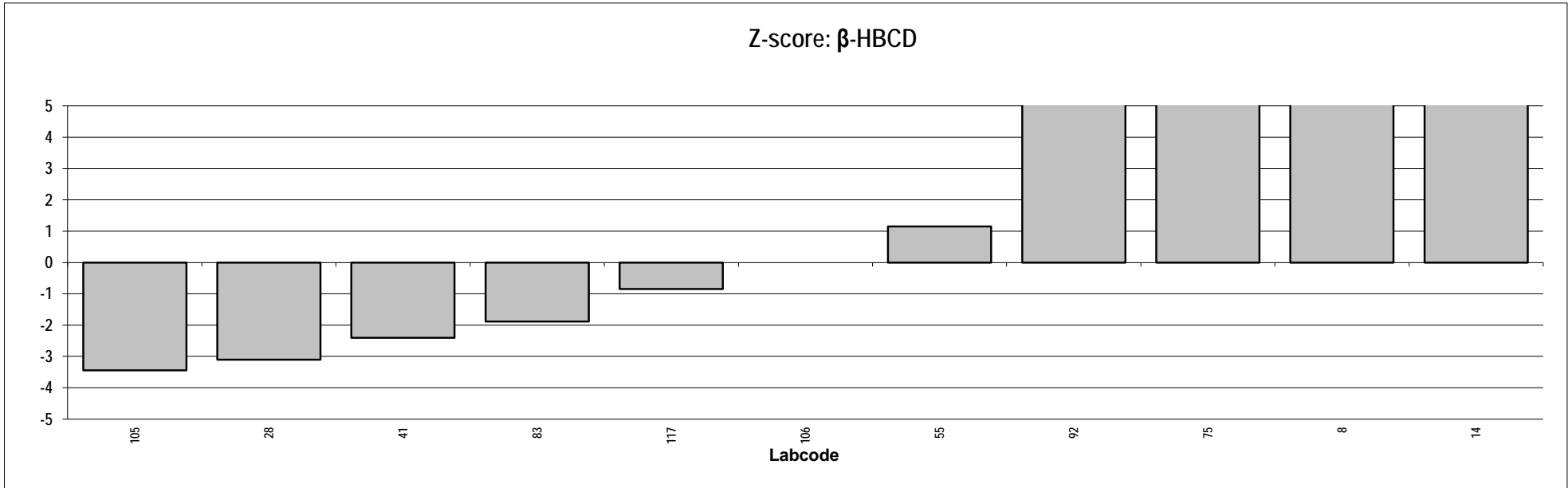
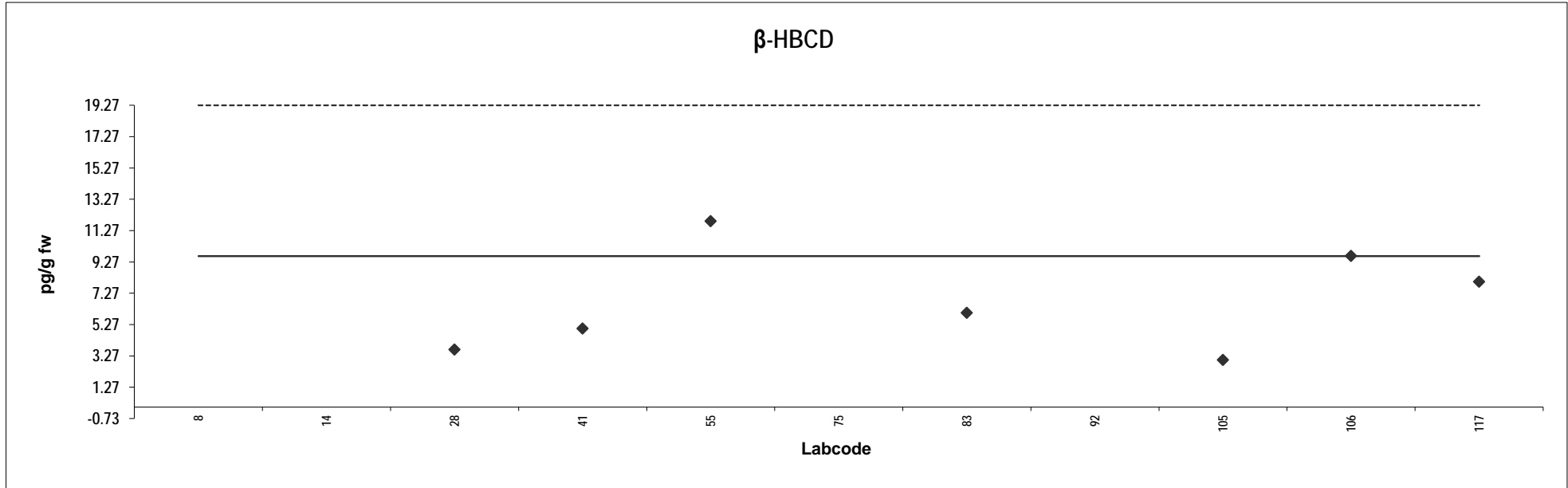


Cod liver
Congener: β -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	250	125	Outlier,ND				
14	300	151	Outlier,ND				
28	3.7	-3.1					
41	5.0	-2.4	ND				
55	12	1.2					
75	70	31	Outlier				
83	6.0	-1.9	ND				
92	69	31	Outlier				
105	3.0	-3.4	ND				
106	9.6	0.00					
117	8.0	-0.85	ND				

Consensus statistics

Consensus median, pg/g	9.6
Median all values pg/g	9.6
Consensus mean, pg/g	6.7
Standard deviation, pg/g	3.2
Relative standard deviation, %	48
No. of values reported	11
No. of values removed	4
No. of reported non-detects	6

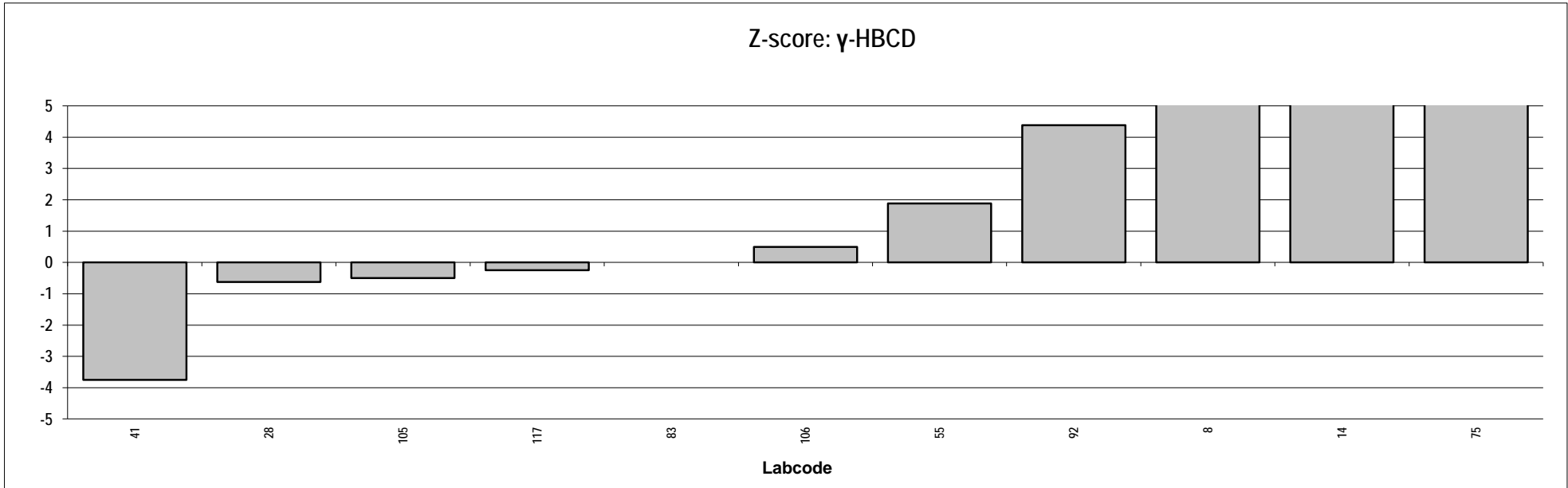
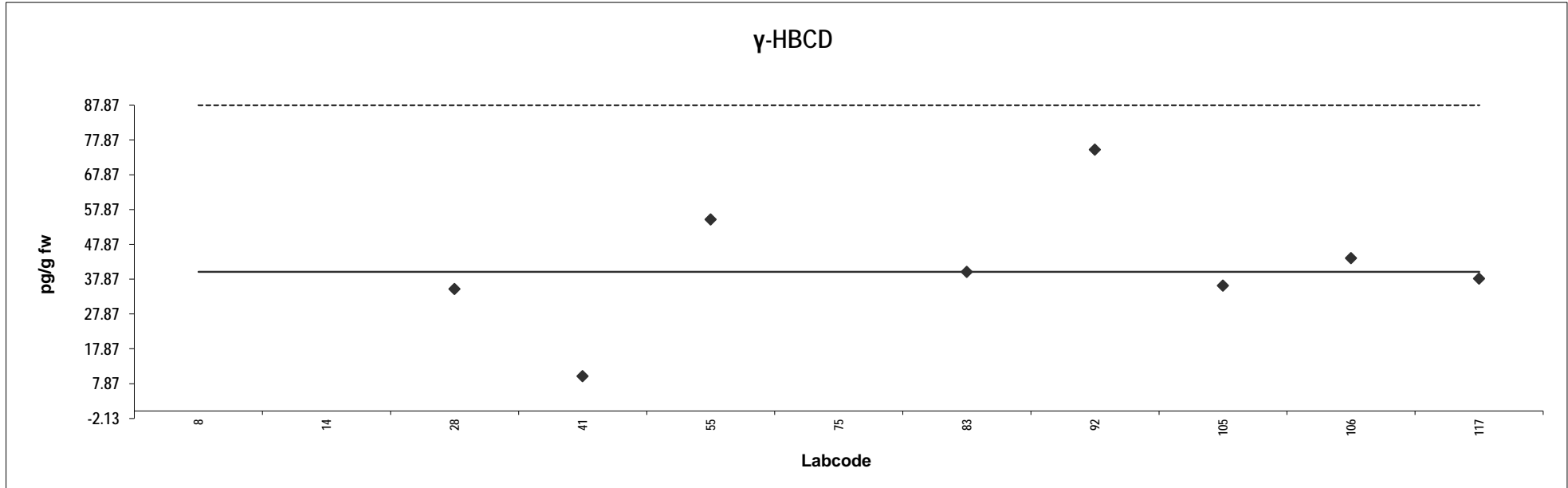


Cod liver
Congener: γ -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	250	26	Outlier,ND				
14	300	33	Outlier,ND				
28	35	-0.62					
41	10	-3.8	ND				
55	55	1.9					
75	640	75	Outlier				
83	40	0.00					
92	75	4.4					
105	36	-0.50					
106	44	0.49					
117	38	-0.25					

Consensus statistics

Consensus median, pg/g	40
Median all values pg/g	44
Consensus mean, pg/g	42
Standard deviation, pg/g	19
Relative standard deviation, %	44
No. of values reported	11
No. of values removed	3
No. of reported non-detects	3

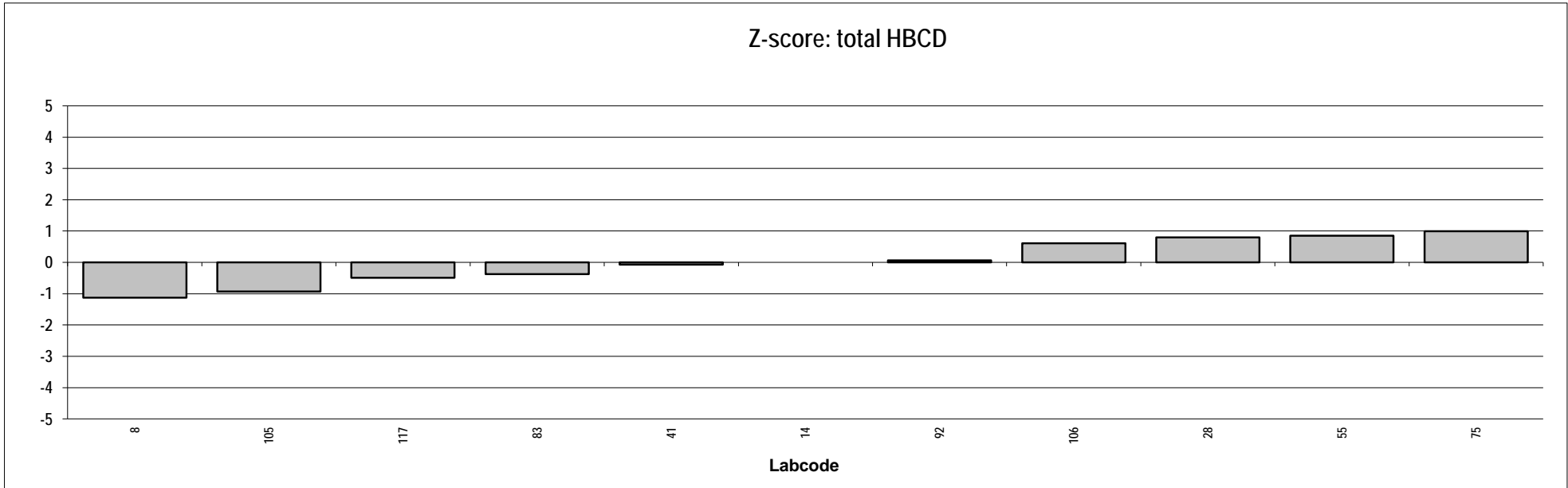
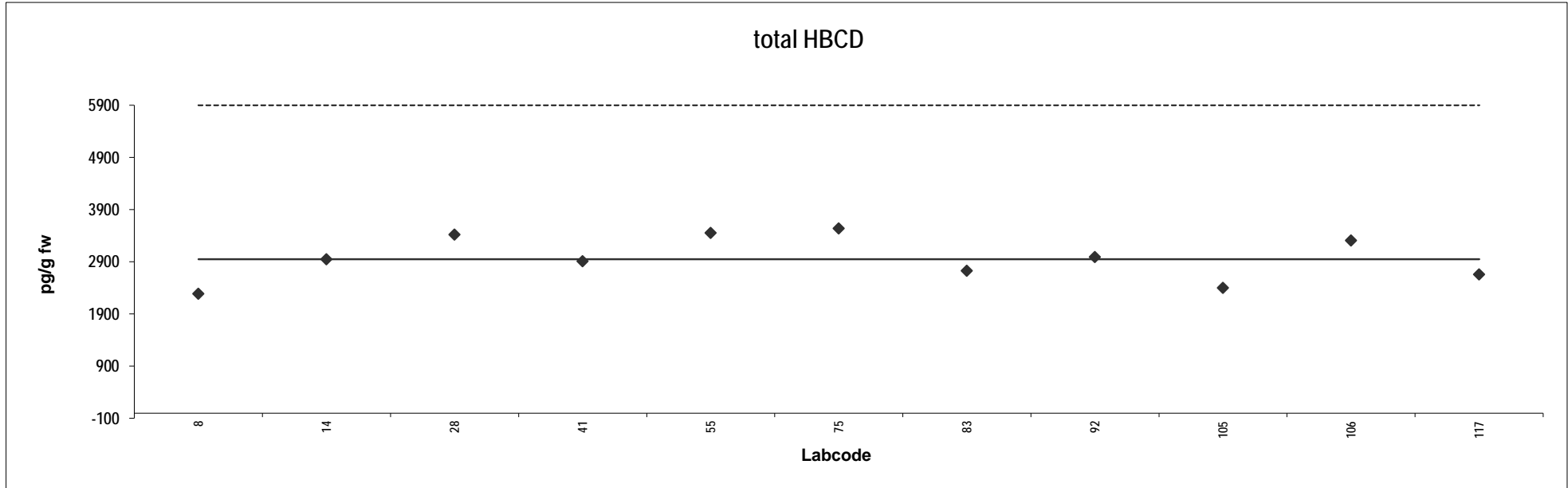


Cod liver
Congener: total HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	2287	-1.1					
14	2950	0.00					
28	3422	0.80					
41	2910	-0.068					
55	3455	0.86					
75	3539	1.0					
83	2730	-0.37					
92	2990	0.068					
105	2400	-0.93					
106	3309	0.61					
117	2660	-0.49					

Consensus statistics

Consensus median, pg/g	2950
Median all values pg/g	2950
Consensus mean, pg/g	2968
Standard deviation, pg/g	427
Relative standard deviation, %	14
No. of values reported	11
No. of values removed	0
No. of reported non-detects	0



Appendix 4:

Presentation of results
for Herring-2017

Appendix 3: Presentation of results: Herring-2017

Statistic calculations for PCDDs, PCDFs and dioxin-like PCBs

For each congener, the outliers were removed and the consensus value was calculated according to the following procedure:

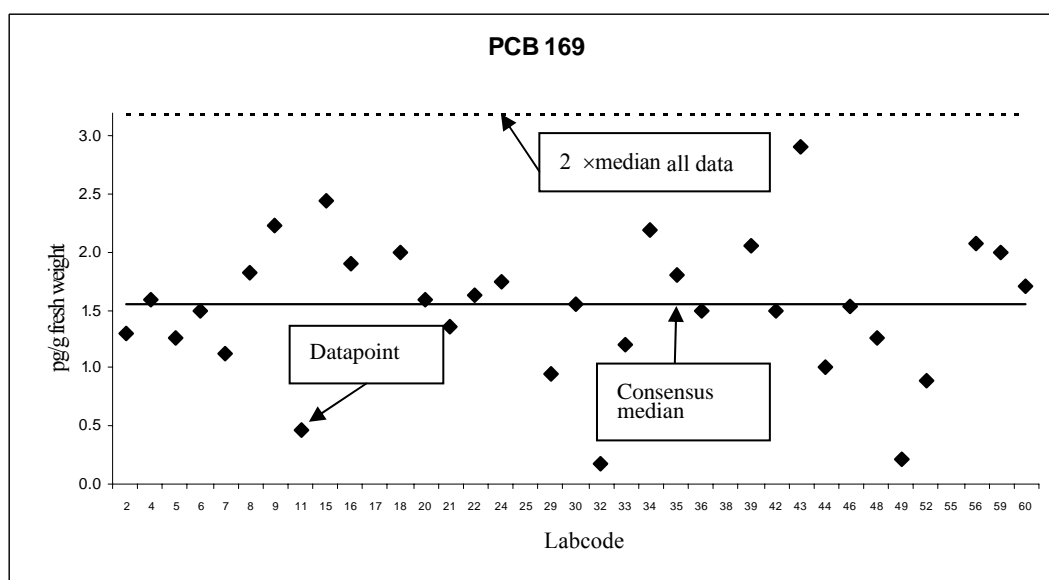
1. The median was calculated from all the reported data, using the detection limit as concentration for non-detected congeners.
2. Values exceeding $2 \times$ this median were defined as outliers and removed from the data set.
3. Median, mean and standard deviation were re-calculated from the remaining data. This second median was called consensus.

Statistic calculations for indicator PCBs, PBDEs and HBCD

For each congener, the outliers were removed and the consensus value was calculated according to the following procedure:

1. The median was calculated from all the reported data, using the detection limit as concentration for non-detected congeners (NDs).
2. Values exceeding $2 \times$ this median were defined as outliers and removed from the data set. The NDs were also removed.
3. Median, mean and standard deviation were re-calculated from the remaining data. This second median was called consensus.
4. For comparison, median, mean and standard deviation were also calculated without removing NDs.

The diagram shows the reported data up to approximately the limit for outliers ($2 \times$ the first median).



Z-Scores of individual congeners

Z-scores of each congener were calculated for each laboratory according to the following equation:

$$z = (x - X)/\sigma$$

where x = reported value; X = assigned value (consensus); σ = target value for standard deviation. A σ of 20% of the consensus was used, i.e. z-scores between +1 and -1 reflect a deviation of $\pm 20\%$ from the consensus value.

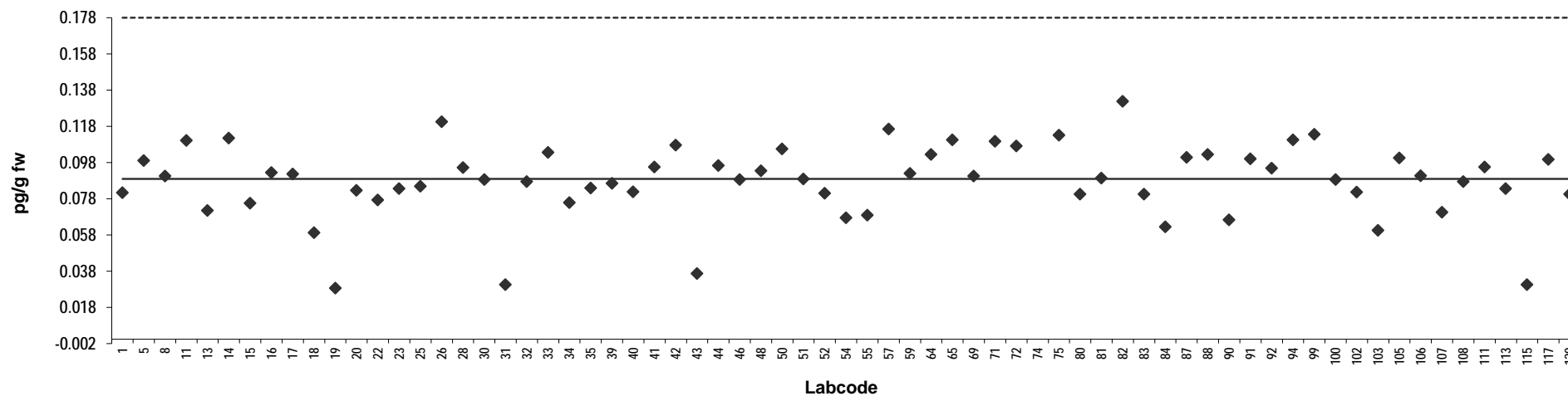
Herring
Congener: 2,3,7,8 TCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.081	-0.44		80	0.080	-0.49	
5	0.099	0.56		81	0.089	0.011	
8	0.090	0.079		82	0.13	2.4	
11	0.11	1.2		83	0.080	-0.49	
13	0.071	-0.99		84	0.062	-1.5	
14	0.11	1.3		87	0.10	0.66	
15	0.075	-0.77		88	0.10	0.76	
16	0.092	0.19		90	0.066	-1.3	
17	0.091	0.14		91	0.10	0.62	
18	0.059	-1.7		92	0.094	0.33	
19	0.028	-3.4		94	0.11	1.2	
20	0.082	-0.37		99	0.11	1.4	
22	0.077	-0.67		100	0.088	-0.034	
23	0.083	-0.32		102	0.081	-0.42	
25	0.084	-0.24		103	0.060	-1.6	
26	0.12	1.8		105	0.10	0.64	
28	0.095	0.34		106	0.090	0.090	
30	0.088	-0.034		107	0.070	-1.0	ND
31	0.030	-3.3		108	0.087	-0.090	
32	0.087	-0.090		111	0.095	0.36	
33	0.10	0.81		113	0.083	-0.32	
34	0.075	-0.75		115	0.030	-3.3	
35	0.083	-0.29		117	0.099	0.59	
39	0.086	-0.15		120	0.080	-0.49	
40	0.081	-0.41					
41	0.095	0.36					
42	0.11	1.0					
43	0.036	-3.0	ND				
44	0.096	0.40					
46	0.088	-0.034					
48	0.093	0.24					
50	0.11	0.93					
51	0.088	-0.011					
52	0.081	-0.46					
54	0.067	-1.2					
55	0.068	-1.1					
57	0.12	1.5					
59	0.092	0.16					
64	0.10	0.76					
65	0.11	1.2					
69	0.090	0.079					
71	0.11	1.2					
72	0.11	1.0					
74	0.18	5.2	Outlier				
75	0.11	1.4					

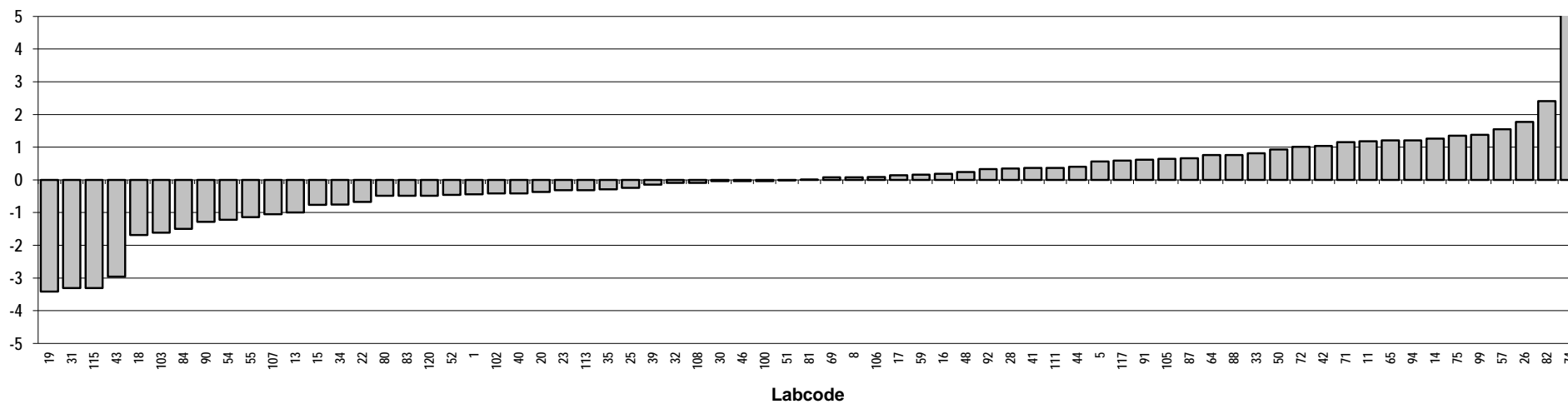
Consensus statistics

Consensus median, pg/g	0.089
Median all values pg/g	0.089
Consensus mean, pg/g	0.087
Standard deviation, pg/g	0.020
Relative standard deviation, %	23
No. of values reported	69
No. of values removed	1
No. of reported non-detects	2

2,3,7,8 TCDD



Z-score: 2,3,7,8 TCDD

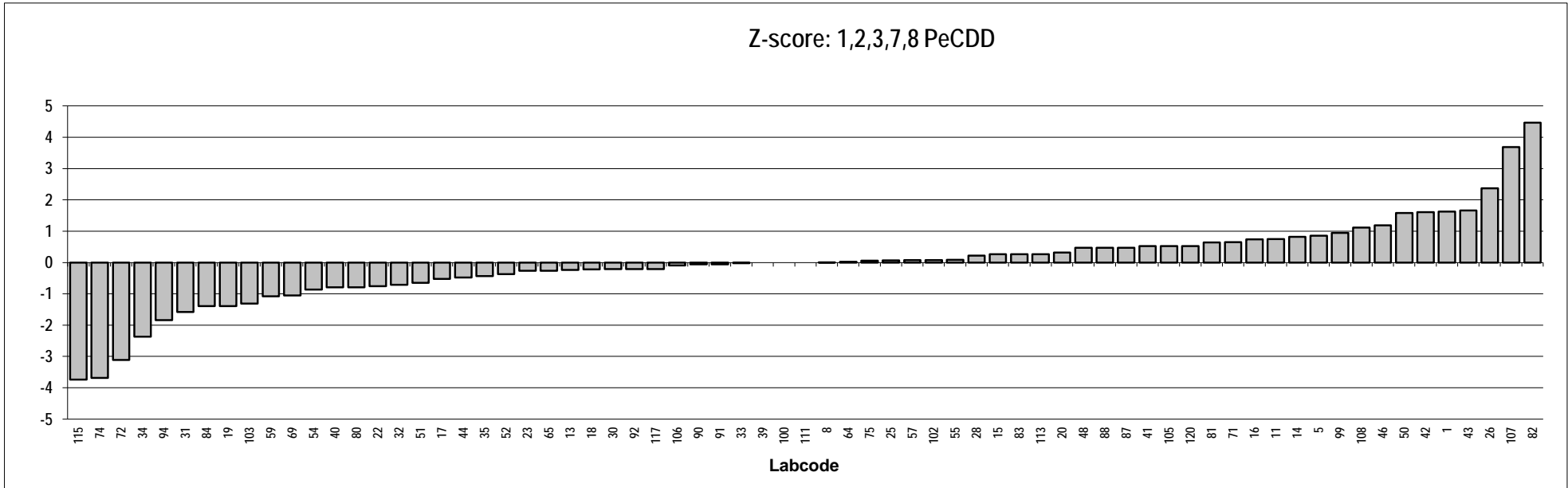
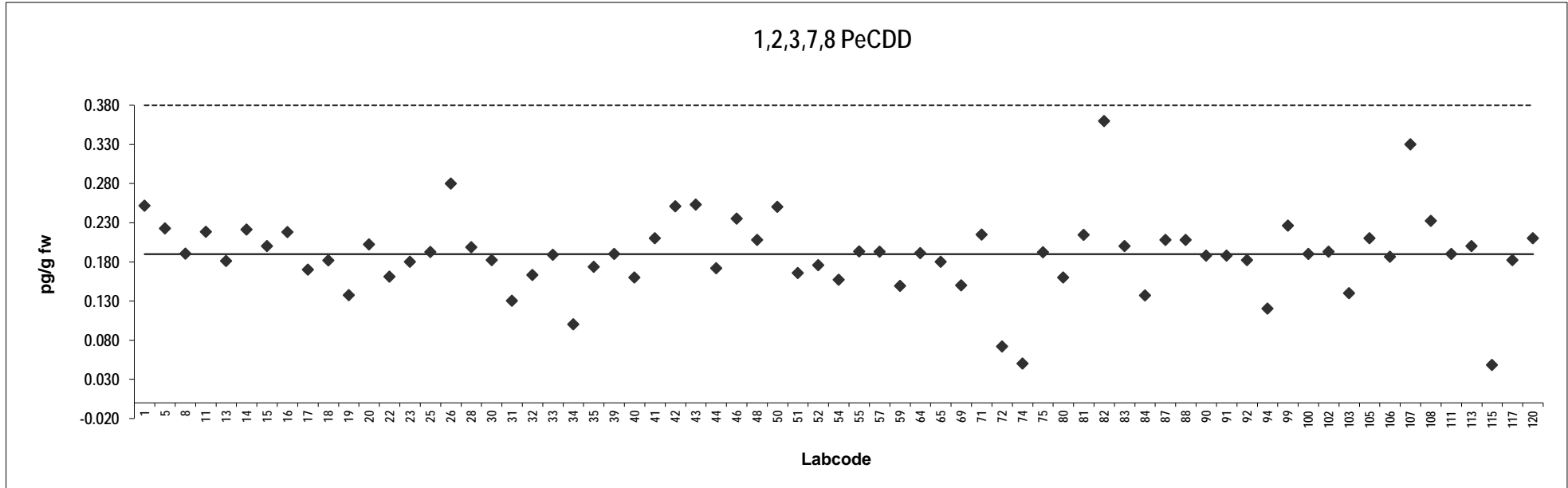


Herring
Congener: 1,2,3,7,8 PeCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.25	1.6		80	0.16	-0.79	
5	0.22	0.86		81	0.21	0.64	
8	0.19	0.0079		82	0.36	4.5	
11	0.22	0.74		83	0.20	0.26	
13	0.18	-0.24		84	0.14	-1.4	
14	0.22	0.82		87	0.21	0.47	
15	0.20	0.26		88	0.21	0.47	
16	0.22	0.74		90	0.19	-0.059	
17	0.17	-0.53		91	0.19	-0.059	
18	0.18	-0.22		92	0.18	-0.21	
19	0.14	-1.4		94	0.12	-1.8	
20	0.20	0.32		99	0.23	0.95	
22	0.16	-0.76		100	0.19	0.00	
23	0.18	-0.26		102	0.19	0.079	
25	0.19	0.064		103	0.14	-1.3	
26	0.28	2.4		105	0.21	0.53	
28	0.20	0.22		106	0.19	-0.095	
30	0.18	-0.21		107	0.33	3.7	ND
31	0.13	-1.6		108	0.23	1.1	
32	0.16	-0.71		111	0.19	0.00	
33	0.19	-0.026		113	0.20	0.26	
34	0.10	-2.4		115	0.048	-3.7	
35	0.17	-0.43		117	0.18	-0.21	
39	0.19	0.00		120	0.21	0.53	
40	0.16	-0.79					
41	0.21	0.53					
42	0.25	1.6					
43	0.25	1.7					
44	0.17	-0.48					
46	0.24	1.2					
48	0.21	0.47					
50	0.25	1.6					
51	0.17	-0.65					
52	0.18	-0.37					
54	0.16	-0.87					
55	0.19	0.085					
57	0.19	0.079					
59	0.15	-1.1					
64	0.19	0.026					
65	0.18	-0.26					
69	0.15	-1.1					
71	0.21	0.65					
72	0.072	-3.1	ND				
74	0.050	-3.7					
75	0.19	0.055					

Consensus statistics

Consensus median, pg/g	0.19
Median all values pg/g	0.19
Consensus mean, pg/g	0.19
Standard deviation, pg/g	0.050
Relative standard deviation, %	27
No. of values reported	69
No. of values removed	0
No. of reported non-detects	2



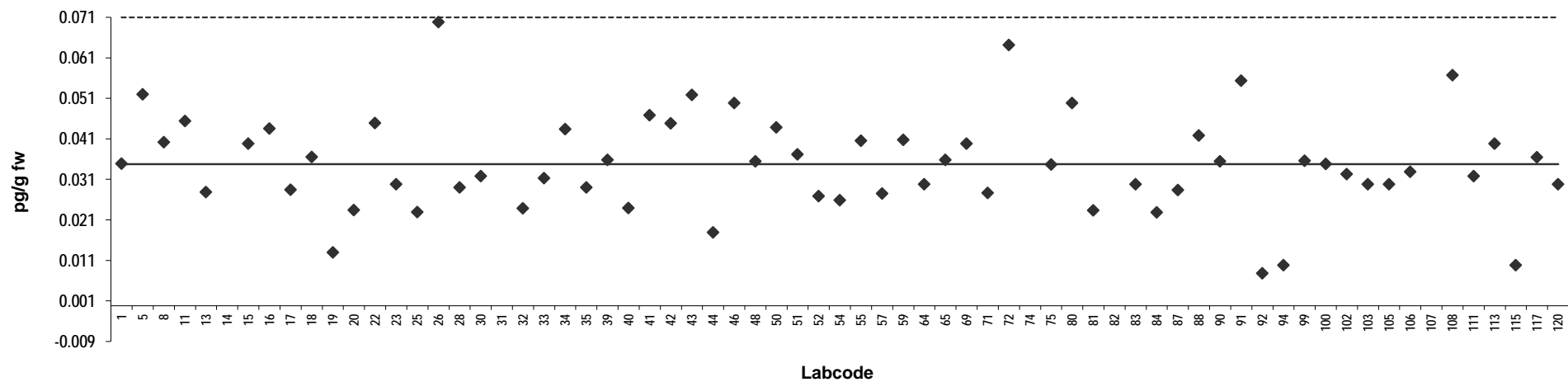
Herring
Congener: 1,2,3,4,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.035	0.016		80	0.050	2.2	ND
5	0.052	2.5		81	0.024	-1.6	
8	0.040	0.78		82	0.22	26	Outlier
11	0.046	1.5	ND	83	0.030	-0.71	
13	0.028	-0.99		84	0.023	-1.7	
14	0.20	24	Outlier,ND	87	0.029	-0.91	
15	0.040	0.73		88	0.042	1.0	
16	0.044	1.3		90	0.036	0.10	
17	0.029	-0.91		91	0.056	3.0	ND
18	0.037	0.25		92	0.0080	-3.9	ND
19	0.013	-3.1		94	0.010	-3.6	
20	0.024	-1.6		99	0.036	0.12	
22	0.045	1.5		100	0.035	0.010	ND
23	0.030	-0.71		102	0.033	-0.35	
25	0.023	-1.7	ND	103	0.030	-0.71	
26	0.070	5.0		105	0.030	-0.71	
28	0.029	-0.82		106	0.033	-0.27	
30	0.032	-0.42		107	0.10	9.3	Outlier,ND
31	0.090	7.9	Outlier	108	0.057	3.1	
32	0.024	-1.6		111	0.032	-0.42	
33	0.032	-0.49		113	0.040	0.73	
34	0.044	1.2		115	0.010	-3.6	
35	0.029	-0.82		117	0.037	0.24	
39	0.036	0.15		120	0.030	-0.71	
40	0.024	-1.6					
41	0.047	1.7					
42	0.045	1.4					
43	0.052	2.4					
44	0.018	-2.4	ND				
46	0.050	2.2	ND				
48	0.036	0.096					
50	0.044	1.3					
51	0.037	0.35					
52	0.027	-1.1					
54	0.026	-1.3					
55	0.041	0.82					
57	0.028	-1.0					
59	0.041	0.85					
64	0.030	-0.71					
65	0.036	0.15					
69	0.040	0.73					
71	0.028	-1.0					
72	0.064	4.2	ND				
74	0.090	7.9	Outlier				
75	0.035	-0.010					

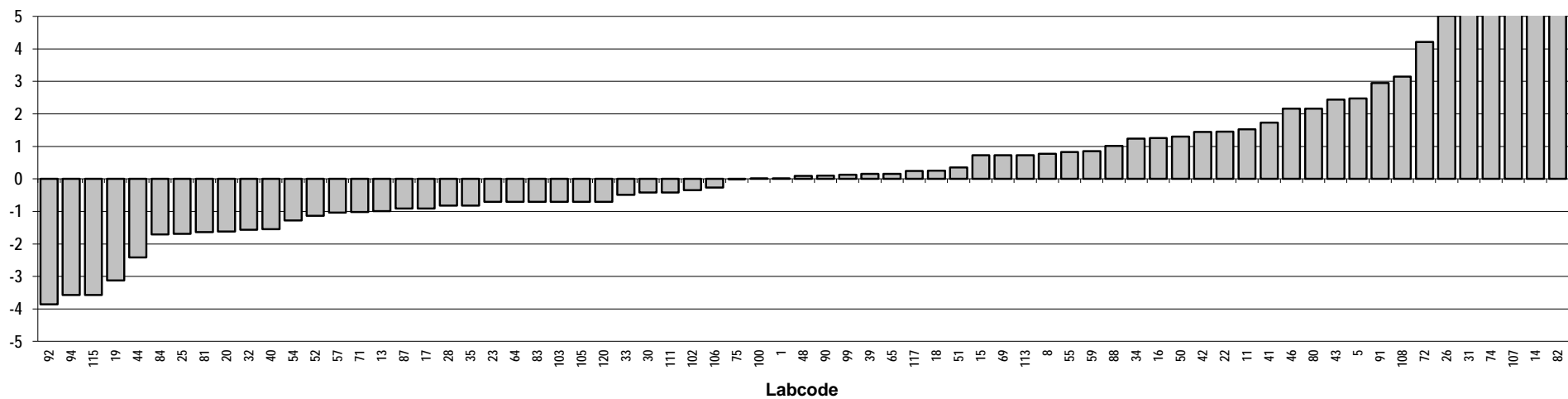
Consensus statistics

Consensus median, pg/g	0.035
Median all values pg/g	0.036
Consensus mean, pg/g	0.035
Standard deviation, pg/g	0.012
Relative standard deviation, %	34
No. of values reported	69
No. of values removed	5
No. of reported non-detects	11

1,2,3,4,7,8 HxCDD



Z-score: 1,2,3,4,7,8 HxCDD

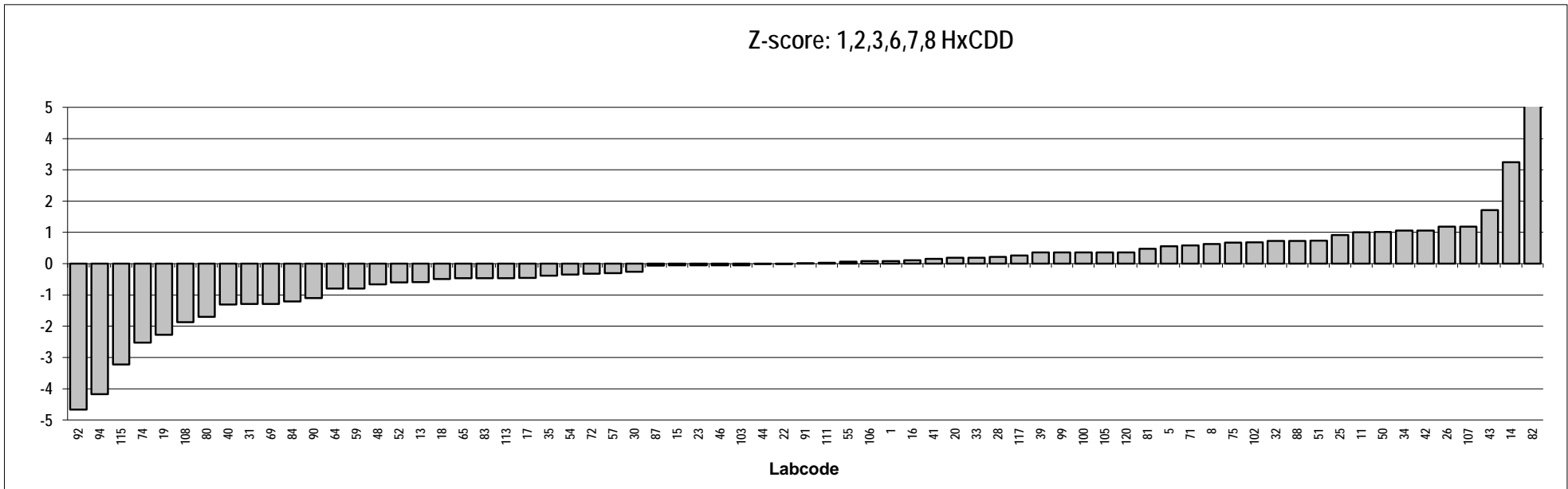
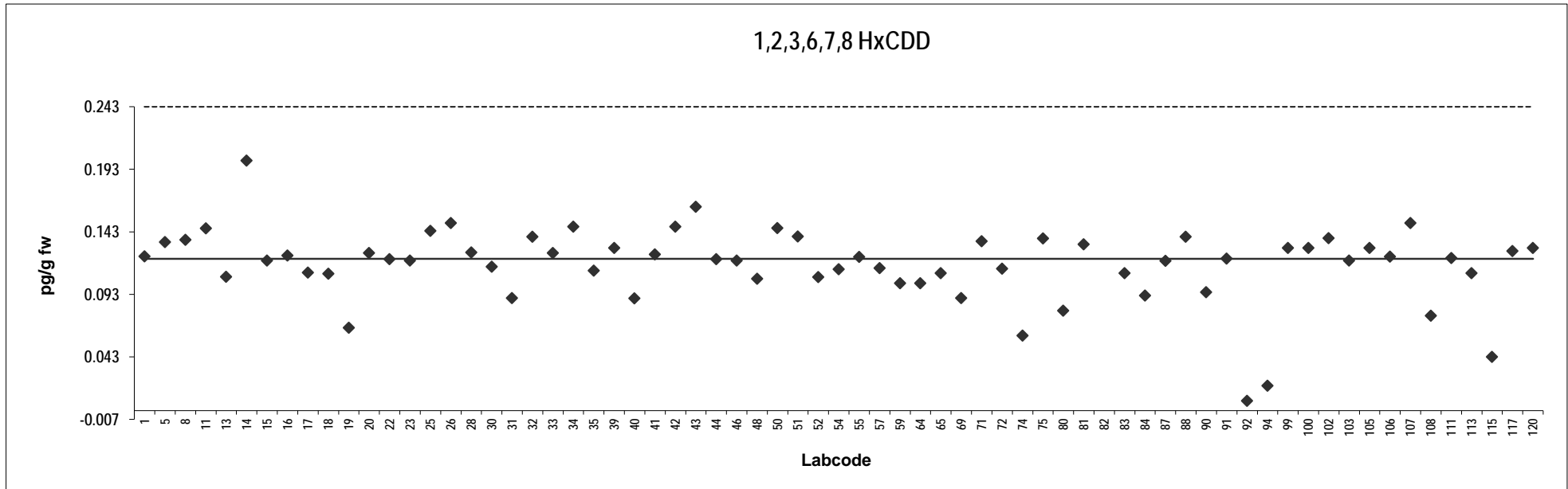


Herring
Congener: 1,2,3,6,7,8 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.12	0.086		80	0.080	-1.7	
5	0.13	0.56		81	0.13	0.48	
8	0.14	0.63		82	0.30	7.4	Outlier
11	0.15	1.0		83	0.11	-0.47	
13	0.11	-0.59		84	0.092	-1.2	
14	0.20	3.2	ND	87	0.12	-0.060	
15	0.12	-0.056		88	0.14	0.73	
16	0.12	0.11		90	0.095	-1.1	
17	0.11	-0.46		91	0.12	0.0065	
18	0.11	-0.49		92	0.0080	-4.7	ND
19	0.066	-2.3		94	0.020	-4.2	
20	0.13	0.19		99	0.13	0.36	
22	0.12	-0.0065		100	0.13	0.36	
23	0.12	-0.056		102	0.14	0.69	
25	0.14	0.92		103	0.12	-0.056	
26	0.15	1.2		105	0.13	0.36	
28	0.13	0.22		106	0.12	0.078	
30	0.12	-0.26		107	0.15	1.2	ND
31	0.090	-1.3		108	0.076	-1.9	
32	0.14	0.73		111	0.12	0.026	
33	0.13	0.19		113	0.11	-0.47	
34	0.15	1.1		115	0.043	-3.2	
35	0.11	-0.38		117	0.13	0.26	
39	0.13	0.36		120	0.13	0.36	
40	0.090	-1.3					
41	0.13	0.15					
42	0.15	1.1					
43	0.16	1.7					
44	0.12	-0.012					
46	0.12	-0.056					
48	0.11	-0.66					
50	0.15	1.0					
51	0.14	0.74					
52	0.11	-0.60					
54	0.11	-0.34					
55	0.12	0.068					
57	0.11	-0.30					
59	0.10	-0.80					
64	0.10	-0.80					
65	0.11	-0.47					
69	0.090	-1.3					
71	0.14	0.58					
72	0.11	-0.32					
74	0.060	-2.5					
75	0.14	0.67					

Consensus statistics

Consensus median, pg/g	0.12
Median all values pg/g	0.12
Consensus mean, pg/g	0.12
Standard deviation, pg/g	0.030
Relative standard deviation, %	26
No. of values reported	69
No. of values removed	1
No. of reported non-detects	3



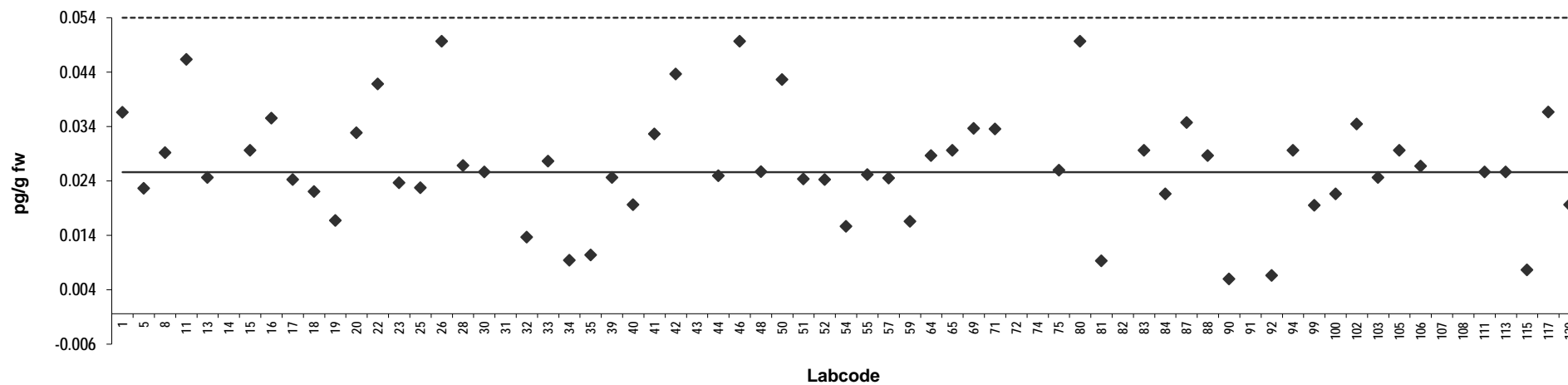
Herring
Congener: 1,2,3,7,8,9 HxCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.037	2.1		80	0.050	4.6	ND
5	0.023	-0.58	ND	81	0.0097	-3.1	
8	0.030	0.68		82	0.26	46	Outlier
11	0.047	4.0	ND	83	0.030	0.77	
13	0.025	-0.19		84	0.022	-0.77	
14	0.20	33	Outlier,ND	87	0.035	1.7	
15	0.030	0.77		88	0.029	0.58	
16	0.036	1.9		90	0.0063	-3.8	
17	0.025	-0.26		91	0.064	7.2	Outlier,ND
18	0.022	-0.69		92	0.0070	-3.7	ND
19	0.017	-1.7		94	0.030	0.77	ND
20	0.033	1.4		99	0.020	-1.2	
22	0.042	3.1		100	0.022	-0.77	ND
23	0.024	-0.38		102	0.035	1.7	
25	0.023	-0.55	ND	103	0.025	-0.19	ND
26	0.050	4.6	ND	105	0.030	0.77	
28	0.027	0.23		106	0.027	0.20	
30	0.026	0.00		107	0.10	14	Outlier,ND
31	0.31	55	Outlier,ND	108	0.074	9.3	Outlier
32	0.014	-2.3		111	0.026	0.00	
33	0.028	0.38		113	0.026	0.00	
34	0.0098	-3.1		115	0.0080	-3.5	
35	0.011	-2.9		117	0.037	2.1	
39	0.025	-0.19		120	0.020	-1.2	
40	0.020	-1.2	ND				
41	0.033	1.3					
42	0.044	3.5					
43	0.058	6.2	Outlier				
44	0.025	-0.14					
46	0.050	4.6	ND				
48	0.026	0.011					
50	0.043	3.3					
51	0.025	-0.25					
52	0.025	-0.27					
54	0.016	-1.9					
55	0.026	-0.089					
57	0.025	-0.21					
59	0.017	-1.8					
64	0.029	0.58					
65	0.030	0.77					
69	0.034	1.5	ND				
71	0.034	1.5					
72	0.062	6.8	Outlier,ND				
74	0.090	12	Outlier				
75	0.026	0.063					

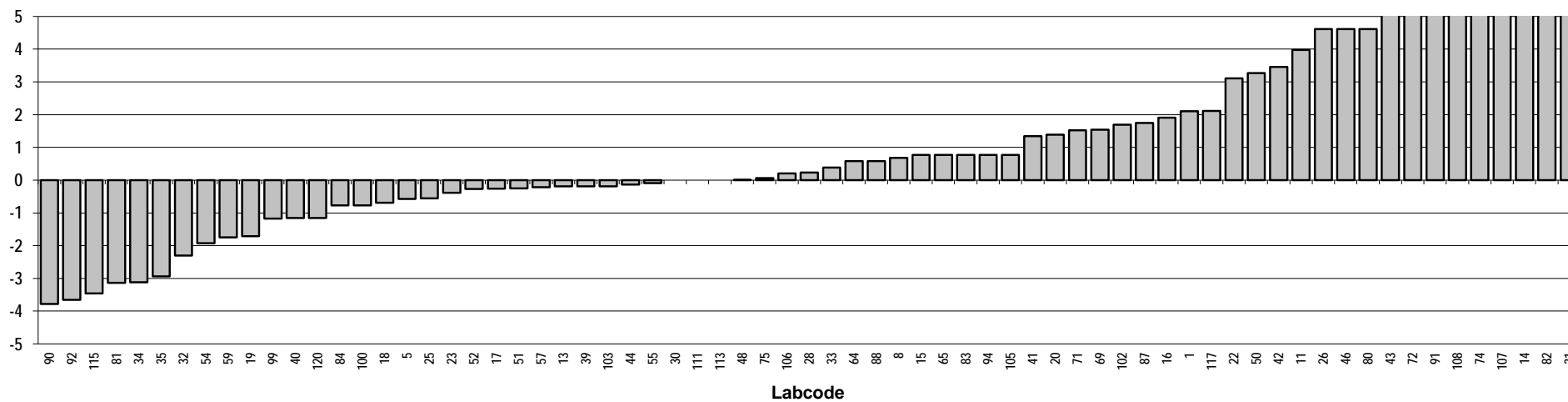
Consensus statistics

Consensus median, pg/g	0.026
Median all values pg/g	0.027
Consensus mean, pg/g	0.027
Standard deviation, pg/g	0.010
Relative standard deviation, %	38
No. of values reported	69
No. of values removed	9
No. of reported non-detects	17

1,2,3,7,8,9 HxCDD



Z-score: 1,2,3,7,8,9 HxCDD

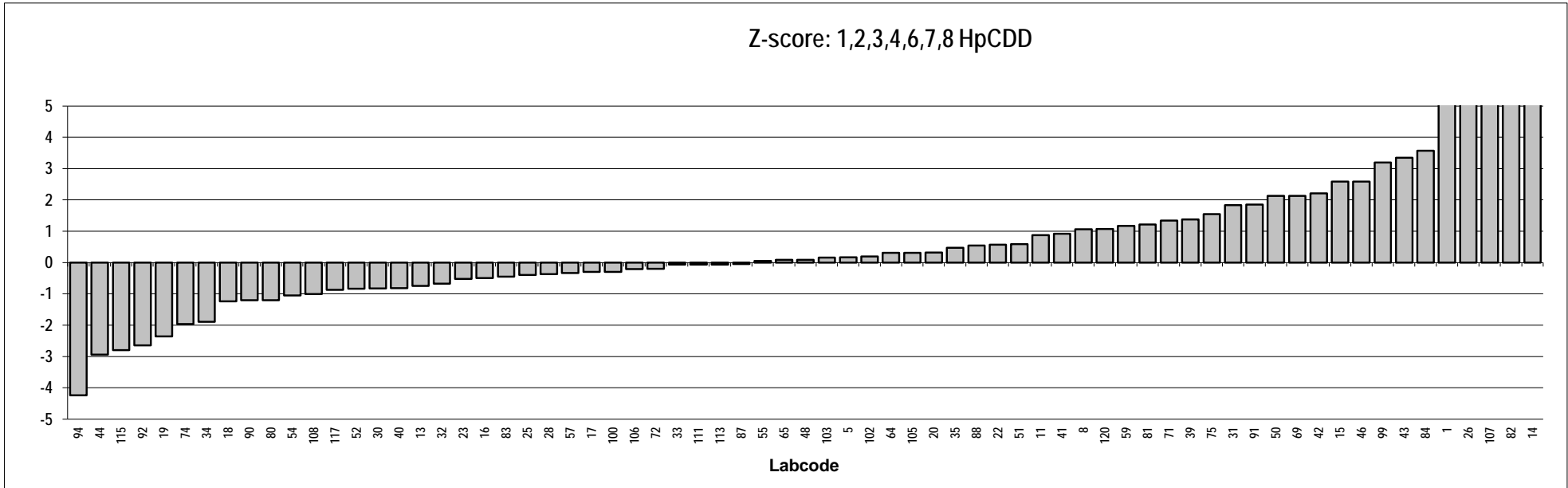
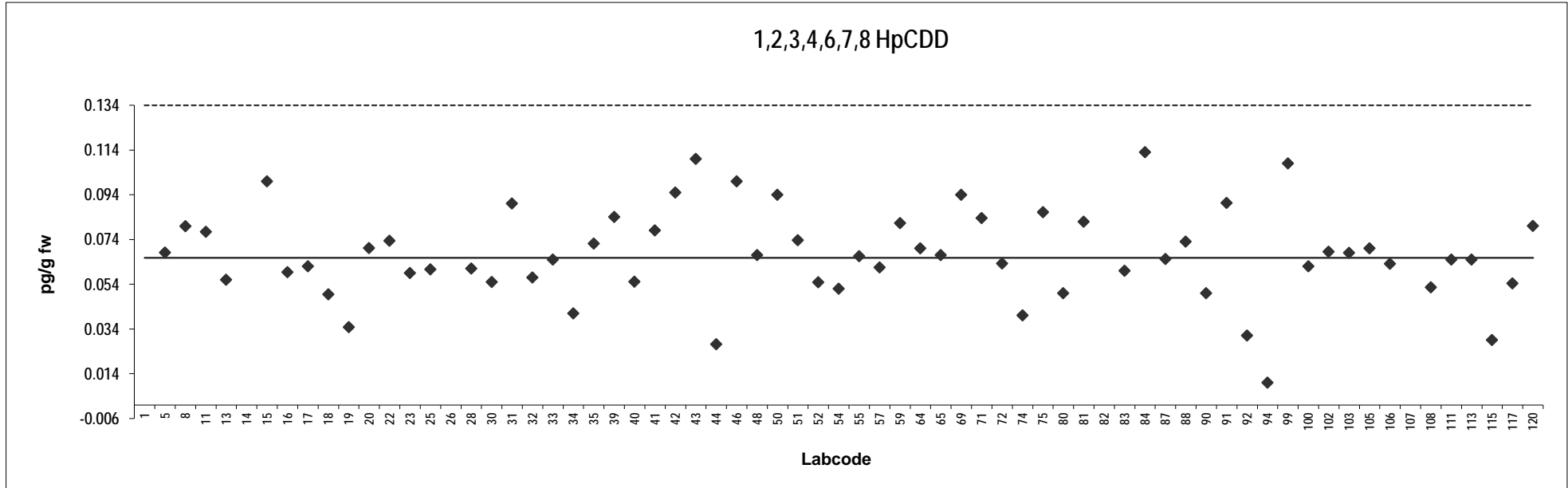


Herring
Congener: 1,2,3,4,6,7,8 HpCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.16	7.0	Outlier	80	0.050	-1.2	ND
5	0.068	0.17		81	0.082	1.2	
8	0.080	1.1		82	0.29	17	Outlier
11	0.077	0.87		83	0.060	-0.45	
13	0.056	-0.75		84	0.11	3.6	ND
14	0.40	25	Outlier,ND	87	0.065	-0.048	
15	0.10	2.6		88	0.073	0.54	
16	0.059	-0.49		90	0.050	-1.2	
17	0.062	-0.30		91	0.090	1.9	ND
18	0.050	-1.2		92	0.031	-2.6	ND
19	0.035	-2.4		94	0.010	-4.2	
20	0.070	0.32		99	0.11	3.2	
22	0.073	0.57		100	0.062	-0.29	ND
23	0.059	-0.52		102	0.069	0.20	
25	0.061	-0.40		103	0.068	0.16	
26	0.20	10	Outlier	105	0.070	0.31	
28	0.061	-0.37		106	0.063	-0.21	
30	0.055	-0.83		107	0.20	10	Outlier,ND
31	0.090	1.8		108	0.053	-1.0	
32	0.057	-0.67		111	0.065	-0.067	
33	0.065	-0.067		113	0.065	-0.067	
34	0.041	-1.9		115	0.029	-2.8	
35	0.072	0.47		117	0.054	-0.87	
39	0.084	1.4		120	0.080	1.1	
40	0.055	-0.82					
41	0.078	0.92					
42	0.095	2.2					
43	0.11	3.3					
44	0.027	-2.9					
46	0.10	2.6	ND				
48	0.067	0.085					
50	0.094	2.1					
51	0.074	0.59					
52	0.055	-0.83					
54	0.052	-1.1					
55	0.067	0.048					
57	0.062	-0.33					
59	0.081	1.2					
64	0.070	0.31					
65	0.067	0.085					
69	0.094	2.1	ND				
71	0.084	1.3					
72	0.063	-0.20					
74	0.040	-2.0					
75	0.086	1.5					

Consensus statistics

Consensus median, pg/g	0.066
Median all values pg/g	0.067
Consensus mean, pg/g	0.067
Standard deviation, pg/g	0.020
Relative standard deviation, %	30
No. of values reported	69
No. of values removed	5
No. of reported non-detects	9

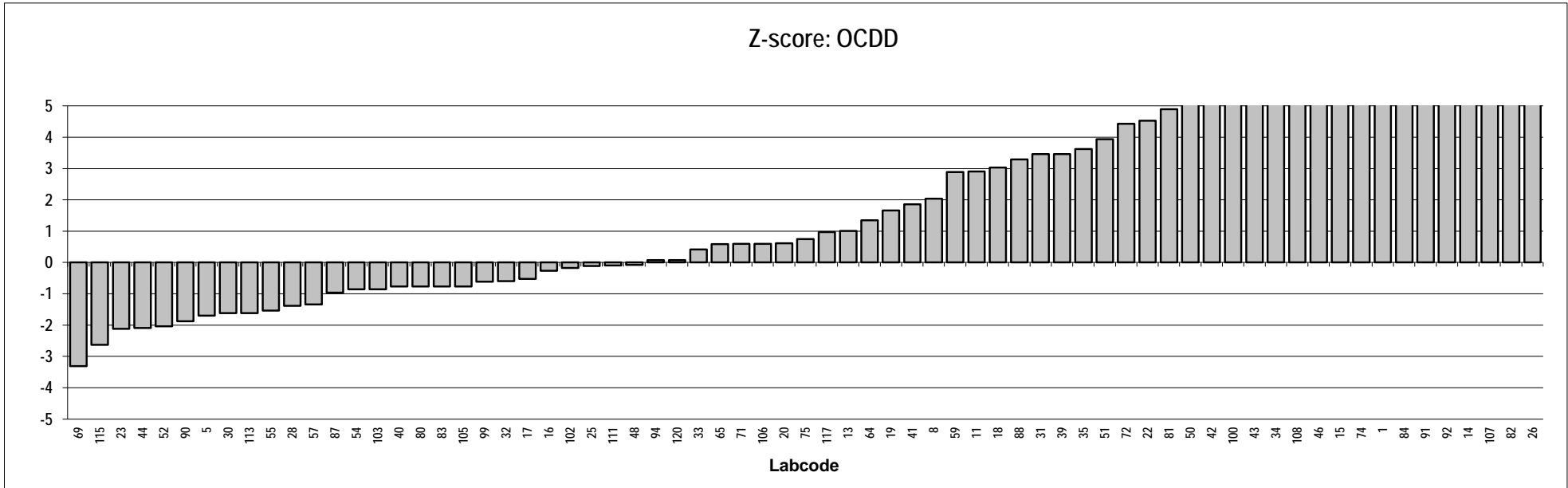
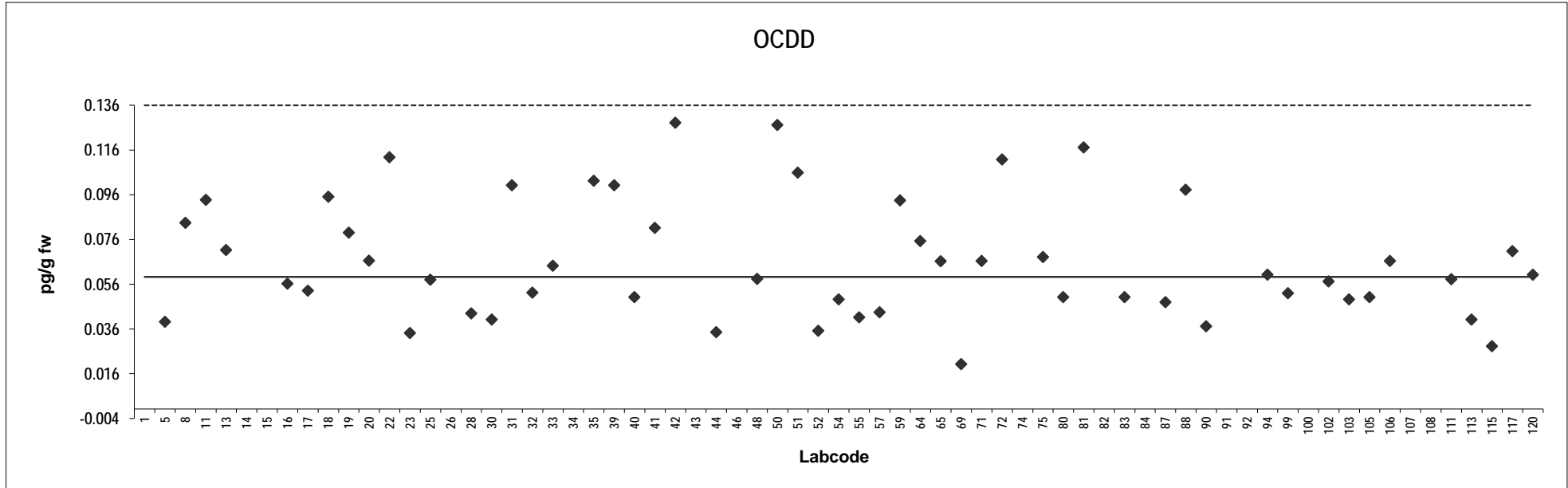


Herring
Congener: OCDD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.25	16	Outlier	80	0.050	-0.77	ND
5	0.039	-1.7	ND	81	0.12	4.9	
8	0.083	2.0		82	0.62	47	Outlier
11	0.093	2.9		83	0.050	-0.77	
13	0.071	1.0		84	0.34	24	Outlier,ND
14	0.40	29	Outlier,ND	87	0.048	-0.96	
15	0.22	14	Outlier	88	0.098	3.3	
16	0.056	-0.26		90	0.037	-1.9	
17	0.053	-0.52		91	0.35	24	Outlier,ND
18	0.095	3.0		92	0.35	25	Outlier,ND
19	0.079	1.7		94	0.060	0.078	
20	0.066	0.61		99	0.052	-0.62	
22	0.11	4.5		100	0.16	8.5	Outlier,ND
23	0.034	-2.1	ND	102	0.057	-0.18	
25	0.058	-0.11	ND	103	0.049	-0.85	
26	0.70	54	Outlier	105	0.050	-0.77	
28	0.043	-1.4		106	0.066	0.60	
30	0.040	-1.6		107	0.50	37	Outlier,ND
31	0.10	3.5		108	0.19	11	Outlier
32	0.052	-0.60		111	0.058	-0.092	
33	0.064	0.42		113	0.040	-1.6	
34	0.18	9.8	Outlier	115	0.028	-2.6	
35	0.10	3.6		117	0.071	0.97	
39	0.10	3.5		120	0.060	0.078	ND
40	0.050	-0.77	ND				
41	0.081	1.9					
42	0.13	5.8					
43	0.16	8.8	Outlier				
44	0.034	-2.1					
46	0.20	12	Outlier,ND				
48	0.058	-0.078					
50	0.13	5.7					
51	0.11	3.9	ND				
52	0.035	-2.0					
54	0.049	-0.85					
55	0.041	-1.5					
57	0.043	-1.3					
59	0.093	2.9					
64	0.075	1.3					
65	0.066	0.59					
69	0.020	-3.3					
71	0.066	0.59					
72	0.11	4.4	ND				
74	0.23	14	Outlier				
75	0.068	0.75					

Consensus statistics

Consensus median, pg/g	0.059
Median all values pg/g	0.068
Consensus mean, pg/g	0.066
Standard deviation, pg/g	0.027
Relative standard deviation, %	40
No. of values reported	69
No. of values removed	15
No. of reported non-detects	15



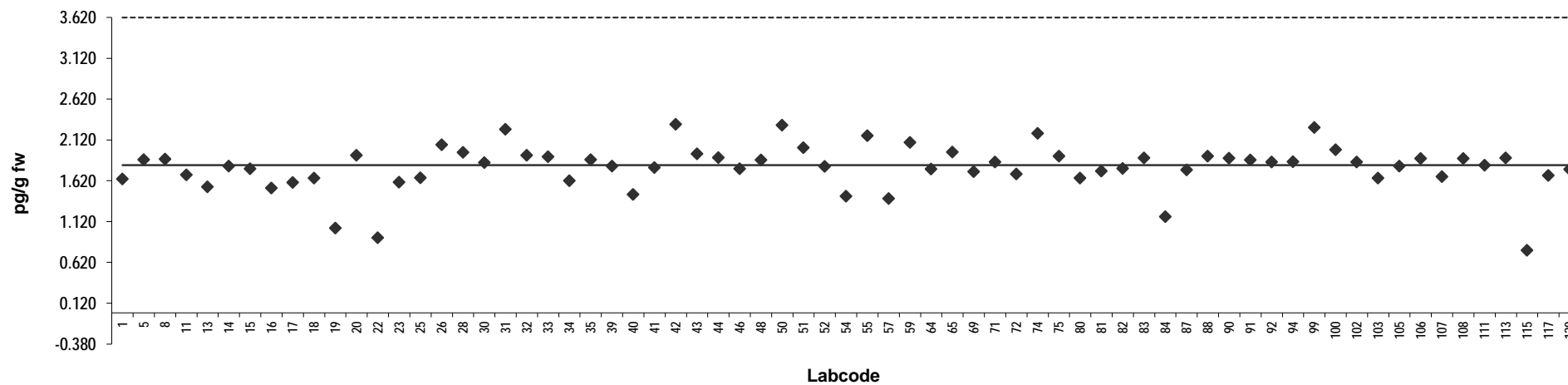
Herring
Congener: 2,3,7,8 TCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1.6	-0.46		80	1.7	-0.44	
5	1.9	0.18		81	1.7	-0.20	
8	1.9	0.20		82	1.8	-0.11	
11	1.7	-0.33		83	1.9	0.25	
13	1.5	-0.73		84	1.2	-1.7	
14	1.8	-0.028		87	1.8	-0.16	
15	1.8	-0.12		88	1.9	0.30	
16	1.5	-0.77		90	1.9	0.23	
17	1.6	-0.58		91	1.9	0.18	
18	1.7	-0.44		92	1.9	0.11	
19	1.0	-2.1		94	1.9	0.12	
20	1.9	0.33		99	2.3	1.3	
22	0.92	-2.5		100	2.0	0.52	
23	1.6	-0.58		102	1.9	0.11	
25	1.7	-0.43		103	1.7	-0.44	
26	2.1	0.69		105	1.8	-0.028	
28	2.0	0.44		106	1.9	0.22	
30	1.8	0.083		107	1.7	-0.39	
31	2.3	1.2		108	1.9	0.22	
32	1.9	0.33		111	1.8	0.00	
33	1.9	0.28		113	1.9	0.25	
34	1.6	-0.52		115	0.77	-2.9	
35	1.9	0.19		117	1.7	-0.34	
39	1.8	-0.028		120	1.8	-0.14	
40	1.5	-0.99					
41	1.8	-0.083					
42	2.3	1.4					
43	2.0	0.39					
44	1.9	0.26					
46	1.8	-0.12					
48	1.9	0.17					
50	2.3	1.4					
51	2.0	0.59					
52	1.8	-0.040					
54	1.4	-1.0					
55	2.2	0.99					
57	1.4	-1.1					
59	2.1	0.77					
64	1.8	-0.14					
65	2.0	0.44					
69	1.7	-0.22					
71	1.8	0.10					
72	1.7	-0.30					
74	2.2	1.1					
75	1.9	0.30					

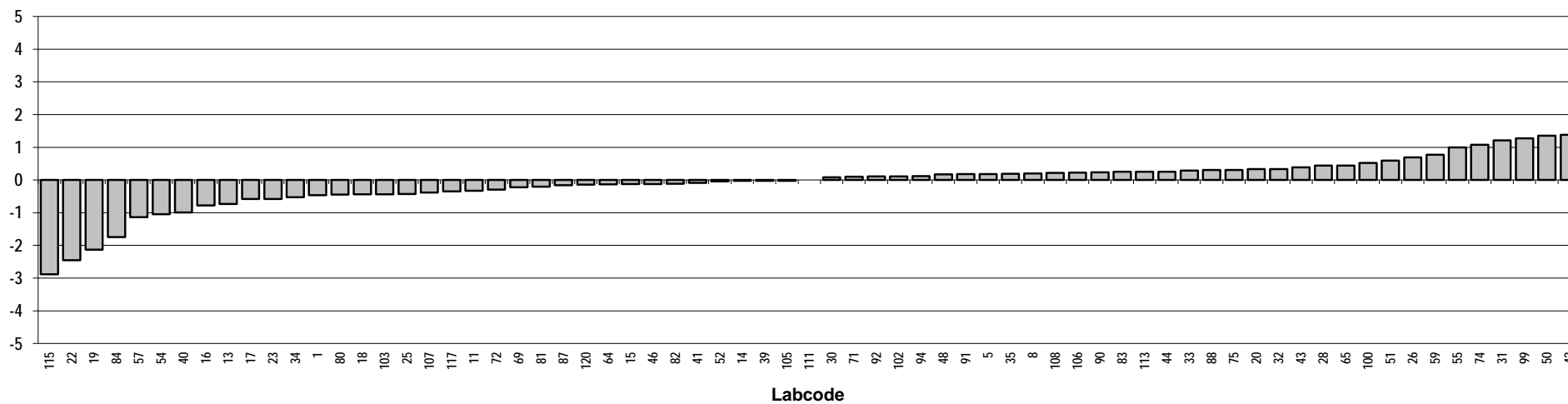
Consensus statistics

Consensus median, pg/g	1.8
Median all values pg/g	1.8
Consensus mean, pg/g	1.8
Standard deviation, pg/g	0.28
Relative standard deviation, %	16
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

2,3,7,8 TCDF



Z-score: 2,3,7,8 TCDF



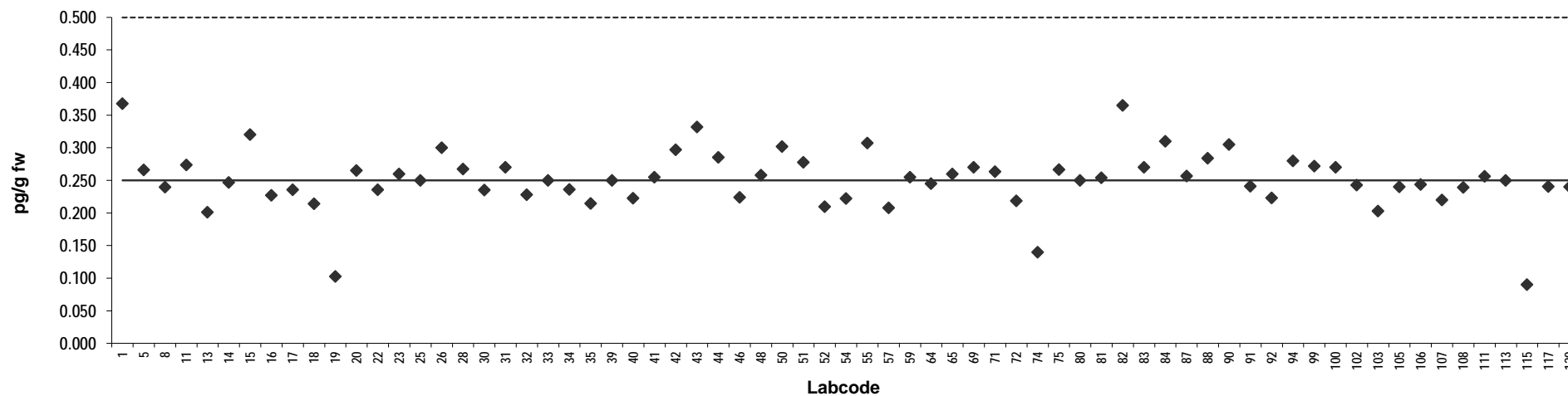
Herring
Congener: 1,2,3,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.37	2.4		80	0.25	0.00	
5	0.27	0.32		81	0.25	0.078	
8	0.24	-0.21		82	0.36	2.3	
11	0.27	0.47		83	0.27	0.40	
13	0.20	-0.98		84	0.31	1.2	
14	0.25	-0.060		87	0.26	0.13	
15	0.32	1.4		88	0.28	0.68	
16	0.23	-0.46		90	0.30	1.1	
17	0.24	-0.29		91	0.24	-0.18	
18	0.21	-0.72		92	0.22	-0.54	
19	0.10	-2.9		94	0.28	0.60	
20	0.27	0.30		99	0.27	0.44	
22	0.24	-0.29		100	0.27	0.40	
23	0.26	0.20		102	0.24	-0.14	
25	0.25	-0.0042		103	0.20	-0.94	
26	0.30	1.0		105	0.24	-0.20	
28	0.27	0.35		106	0.24	-0.13	
30	0.24	-0.30		107	0.22	-0.60	
31	0.27	0.40		108	0.24	-0.22	
32	0.23	-0.44		111	0.26	0.12	
33	0.25	0.00		113	0.25	0.00	
34	0.24	-0.28		115	0.090	-3.2	
35	0.21	-0.71		117	0.24	-0.19	
39	0.25	0.00		120	0.24	-0.20	
40	0.22	-0.55					
41	0.26	0.10					
42	0.30	0.94					
43	0.33	1.6					
44	0.29	0.71					
46	0.22	-0.52					
48	0.26	0.16					
50	0.30	1.0					
51	0.28	0.56					
52	0.21	-0.81					
54	0.22	-0.56					
55	0.31	1.1					
57	0.21	-0.84					
59	0.26	0.10					
64	0.25	-0.10					
65	0.26	0.20					
69	0.27	0.40					
71	0.26	0.27					
72	0.22	-0.63					
74	0.14	-2.2					
75	0.27	0.33					

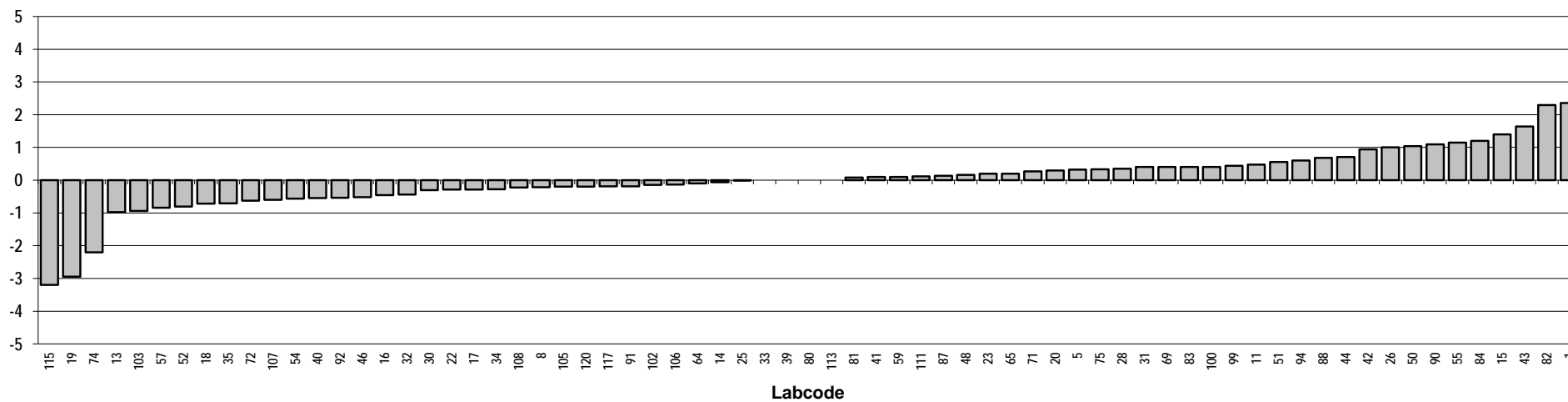
Consensus statistics

Consensus median, pg/g	0.25
Median all values pg/g	0.25
Consensus mean, pg/g	0.25
Standard deviation, pg/g	0.046
Relative standard deviation, %	18
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

1,2,3,7,8 PeCDF



Z-score: 1,2,3,7,8 PeCDF



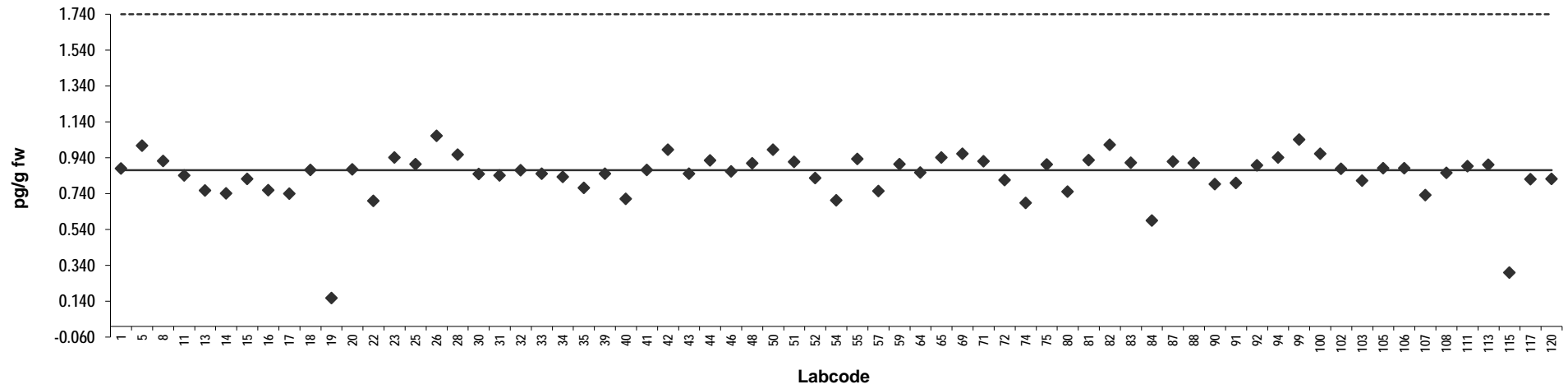
Herring
Congener: 2,3,4,7,8 PeCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.88	0.051		80	0.75	-0.69	
5	1.0	0.78		81	0.92	0.31	
8	0.92	0.29		82	1.0	0.81	
11	0.84	-0.18		83	0.91	0.23	
13	0.76	-0.66		84	0.59	-1.6	
14	0.74	-0.75		87	0.92	0.27	
15	0.82	-0.29		88	0.91	0.22	
16	0.76	-0.65		90	0.79	-0.45	
17	0.74	-0.76		91	0.80	-0.42	
18	0.87	0.00		92	0.90	0.15	
19	0.16	-4.1		94	0.94	0.40	
20	0.87	0.017		99	1.0	0.98	
22	0.70	-0.99		100	0.96	0.52	
23	0.94	0.40		102	0.88	0.040	
25	0.90	0.19		103	0.81	-0.34	
26	1.1	1.1		105	0.88	0.057	
28	0.96	0.49		106	0.88	0.062	
30	0.85	-0.13		107	0.73	-0.80	
31	0.84	-0.17		108	0.85	-0.092	
32	0.87	-0.0057		111	0.89	0.13	
33	0.85	-0.11		113	0.90	0.17	
34	0.83	-0.22		115	0.30	-3.3	
35	0.77	-0.57		117	0.82	-0.29	
39	0.85	-0.11		120	0.82	-0.29	
40	0.71	-0.93					
41	0.87	0.00					
42	0.98	0.66					
43	0.85	-0.11					
44	0.92	0.31					
46	0.86	-0.040					
48	0.91	0.21					
50	0.98	0.65					
51	0.91	0.26					
52	0.83	-0.25					
54	0.70	-0.97					
55	0.93	0.35					
57	0.75	-0.68					
59	0.90	0.19					
64	0.86	-0.080					
65	0.94	0.40					
69	0.96	0.52					
71	0.92	0.28					
72	0.81	-0.32					
74	0.69	-1.1					
75	0.90	0.18					

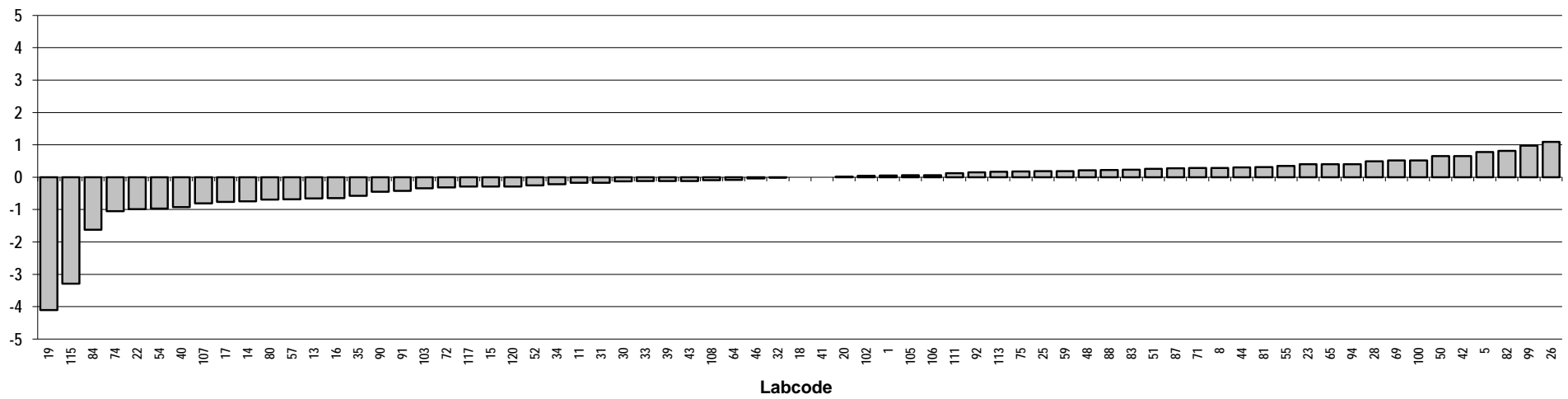
Consensus statistics

Consensus median, pg/g	0.87
Median all values pg/g	0.87
Consensus mean, pg/g	0.84
Standard deviation, pg/g	0.14
Relative standard deviation, %	17
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

2,3,4,7,8 PeCDF



Z-score: 2,3,4,7,8 PeCDF

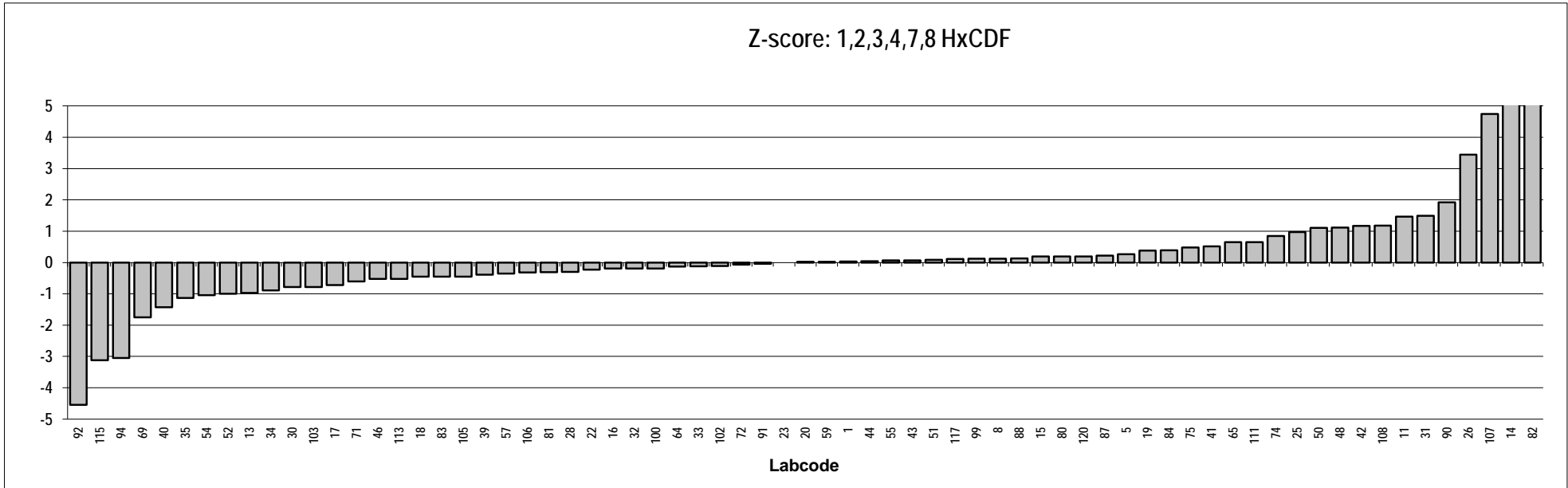
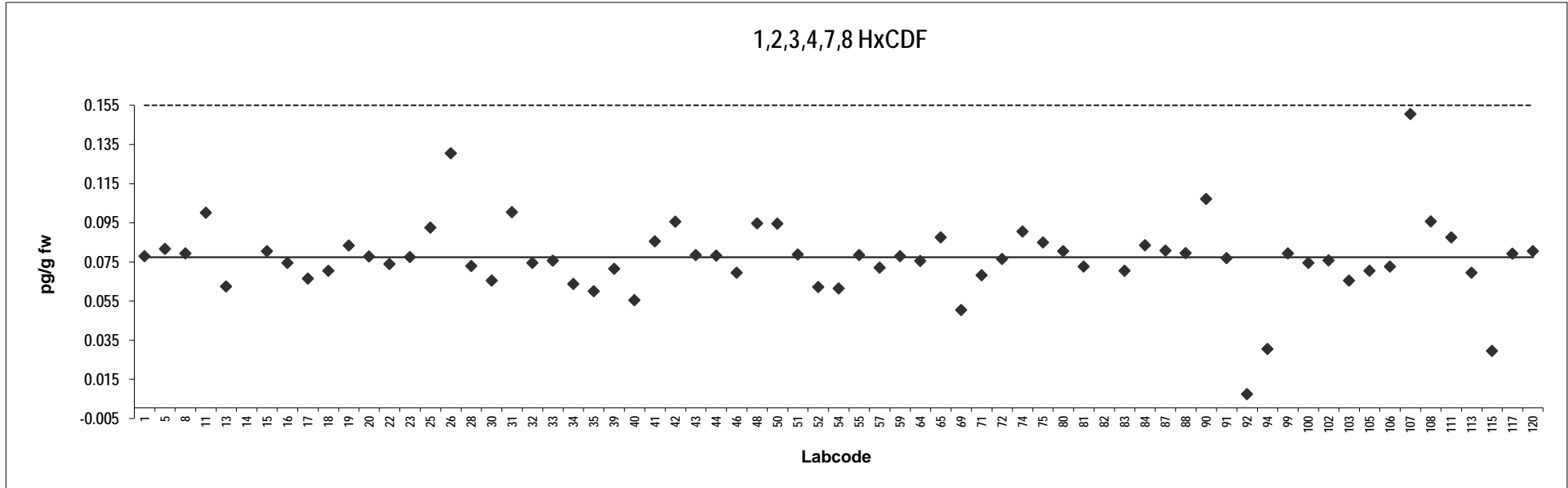


Herring
Congener: 1,2,3,4,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.077	0.032		80	0.080	0.19	
5	0.081	0.27		81	0.072	-0.31	
8	0.079	0.12		82	0.29	14	Outlier
11	0.10	1.5		83	0.070	-0.45	
13	0.062	-0.97		84	0.083	0.39	
14	0.20	8.0	Outlier,ND	87	0.080	0.22	
15	0.080	0.19		88	0.079	0.13	
16	0.074	-0.19		90	0.11	1.9	
17	0.066	-0.72		91	0.076	-0.038	
18	0.070	-0.45		92	0.0070	-4.5	ND
19	0.083	0.38		94	0.030	-3.1	
20	0.077	0.019		99	0.079	0.12	
22	0.073	-0.23		100	0.074	-0.19	
23	0.077	0.00		102	0.075	-0.11	
25	0.092	0.98		103	0.065	-0.78	
26	0.13	3.4		105	0.070	-0.45	
28	0.072	-0.30		106	0.072	-0.31	
30	0.065	-0.78		107	0.15	4.7	ND
31	0.10	1.5		108	0.095	1.2	
32	0.074	-0.19		111	0.087	0.65	
33	0.075	-0.12		113	0.069	-0.52	
34	0.063	-0.89		115	0.029	-3.1	
35	0.060	-1.1		117	0.079	0.11	
39	0.071	-0.39		120	0.080	0.19	
40	0.055	-1.4					
41	0.085	0.52					
42	0.095	1.2					
43	0.078	0.065					
44	0.078	0.046					
46	0.069	-0.52					
48	0.094	1.1					
50	0.094	1.1					
51	0.078	0.085					
52	0.062	-0.99					
54	0.061	-1.0					
55	0.078	0.064					
57	0.072	-0.35					
59	0.077	0.026					
64	0.075	-0.13					
65	0.087	0.65					
69	0.050	-1.8					
71	0.068	-0.60					
72	0.076	-0.068					
74	0.090	0.84					
75	0.084	0.48					

Consensus statistics

Consensus median, pg/g	0.077
Median all values pg/g	0.077
Consensus mean, pg/g	0.076
Standard deviation, pg/g	0.019
Relative standard deviation, %	25
No. of values reported	69
No. of values removed	2
No. of reported non-detects	3

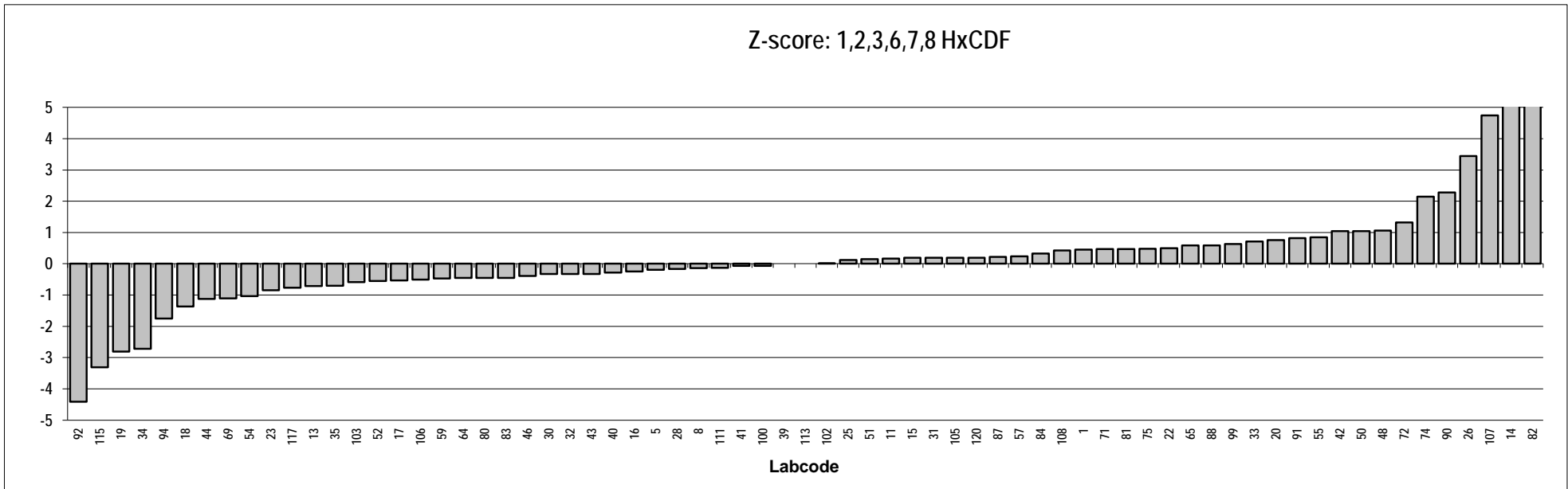
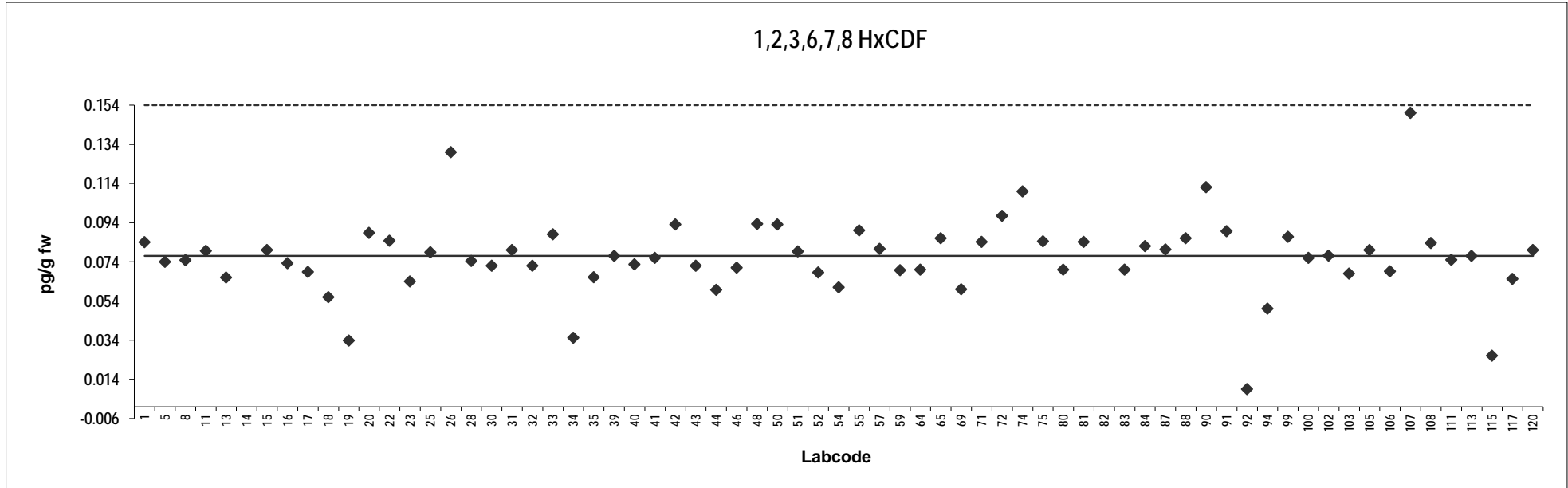


Herring
Congener: 1,2,3,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.084	0.45		80	0.070	-0.45	
5	0.074	-0.19		81	0.084	0.47	
8	0.075	-0.14		82	0.28	13	Outlier
11	0.080	0.16		83	0.070	-0.45	
13	0.066	-0.71		84	0.082	0.32	
14	0.20	8.0	Outlier,ND	87	0.080	0.22	
15	0.080	0.19		88	0.086	0.58	
16	0.073	-0.25		90	0.11	2.3	
17	0.069	-0.53		91	0.090	0.82	
18	0.056	-1.4		92	0.0090	-4.4	ND
19	0.034	-2.8		94	0.050	-1.8	
20	0.089	0.76		99	0.087	0.63	
22	0.085	0.50		100	0.076	-0.065	
23	0.064	-0.84		102	0.077	0.0065	
25	0.079	0.12		103	0.068	-0.58	
26	0.13	3.4		105	0.080	0.19	
28	0.074	-0.17		106	0.069	-0.51	
30	0.072	-0.32		107	0.15	4.7	ND
31	0.080	0.19		108	0.084	0.43	
32	0.072	-0.32		111	0.075	-0.13	
33	0.088	0.71		113	0.077	0.00	
34	0.035	-2.7		115	0.026	-3.3	
35	0.066	-0.70		117	0.065	-0.76	
39	0.077	0.00		120	0.080	0.19	
40	0.073	-0.28					
41	0.076	-0.065					
42	0.093	1.0					
43	0.072	-0.32					
44	0.060	-1.1					
46	0.071	-0.39					
48	0.093	1.1					
50	0.093	1.0					
51	0.079	0.14					
52	0.069	-0.55					
54	0.061	-1.0					
55	0.090	0.84					
57	0.081	0.23					
59	0.070	-0.47					
64	0.070	-0.45					
65	0.086	0.58					
69	0.060	-1.1					
71	0.084	0.47					
72	0.097	1.3					
74	0.11	2.1					
75	0.084	0.48					

Consensus statistics

Consensus median, pg/g	0.077
Median all values pg/g	0.077
Consensus mean, pg/g	0.076
Standard deviation, pg/g	0.020
Relative standard deviation, %	26
No. of values reported	69
No. of values removed	2
No. of reported non-detects	3



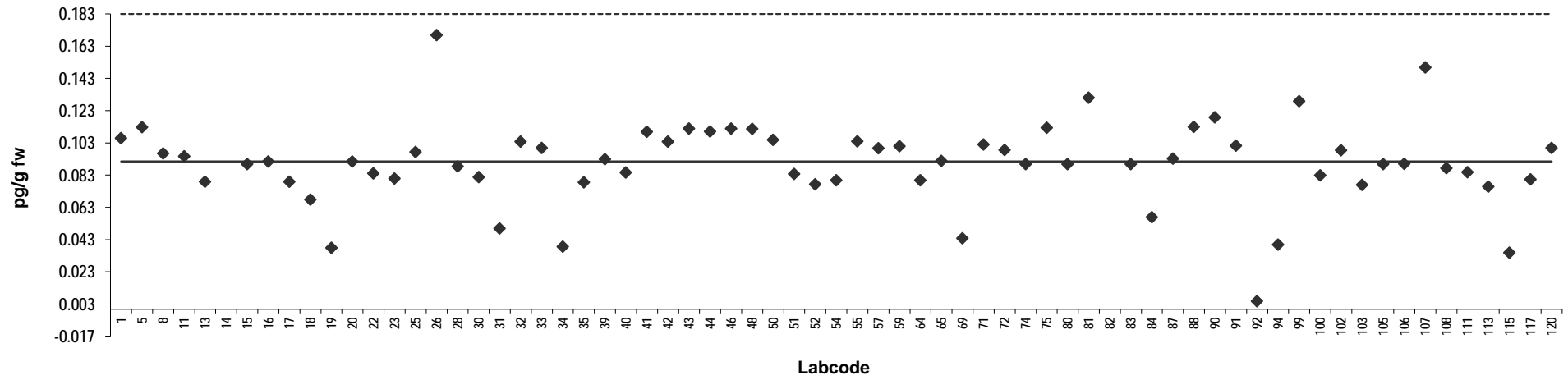
Herring
Congener: 2,3,4,6,7,8 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.11	0.80		80	0.090	-0.087	
5	0.11	1.2		81	0.13	2.2	
8	0.097	0.27		82	0.26	9.2	Outlier
11	0.095	0.18		83	0.090	-0.087	
13	0.079	-0.69		84	0.057	-1.9	
14	0.20	5.9	Outlier,ND	87	0.093	0.098	
15	0.090	-0.087		88	0.11	1.2	
16	0.092	0.00		90	0.12	1.5	
17	0.079	-0.68		91	0.10	0.54	
18	0.068	-1.3		92	0.0050	-4.7	ND
19	0.038	-2.9		94	0.040	-2.8	
20	0.092	0.00		99	0.13	2.0	
22	0.084	-0.40		100	0.083	-0.47	
23	0.081	-0.58		102	0.099	0.38	
25	0.098	0.33		103	0.077	-0.80	
26	0.17	4.3		105	0.090	-0.087	
28	0.089	-0.17		106	0.090	-0.077	
30	0.082	-0.52		107	0.15	3.2	ND
31	0.050	-2.3		108	0.088	-0.22	
32	0.10	0.68		111	0.085	-0.36	
33	0.10	0.46		113	0.076	-0.85	
34	0.039	-2.9		115	0.035	-3.1	
35	0.079	-0.70		117	0.080	-0.61	
39	0.093	0.076		120	0.10	0.46	
40	0.085	-0.38					
41	0.11	1.0					
42	0.10	0.68					
43	0.11	1.1					
44	0.11	1.0					
46	0.11	1.1					
48	0.11	1.1					
50	0.11	0.73					
51	0.084	-0.42					
52	0.077	-0.78					
54	0.080	-0.63					
55	0.10	0.69					
57	0.10	0.45					
59	0.10	0.51					
64	0.080	-0.63					
65	0.092	0.022					
69	0.044	-2.6	ND				
71	0.10	0.58					
72	0.099	0.39					
74	0.090	-0.087					
75	0.11	1.1					

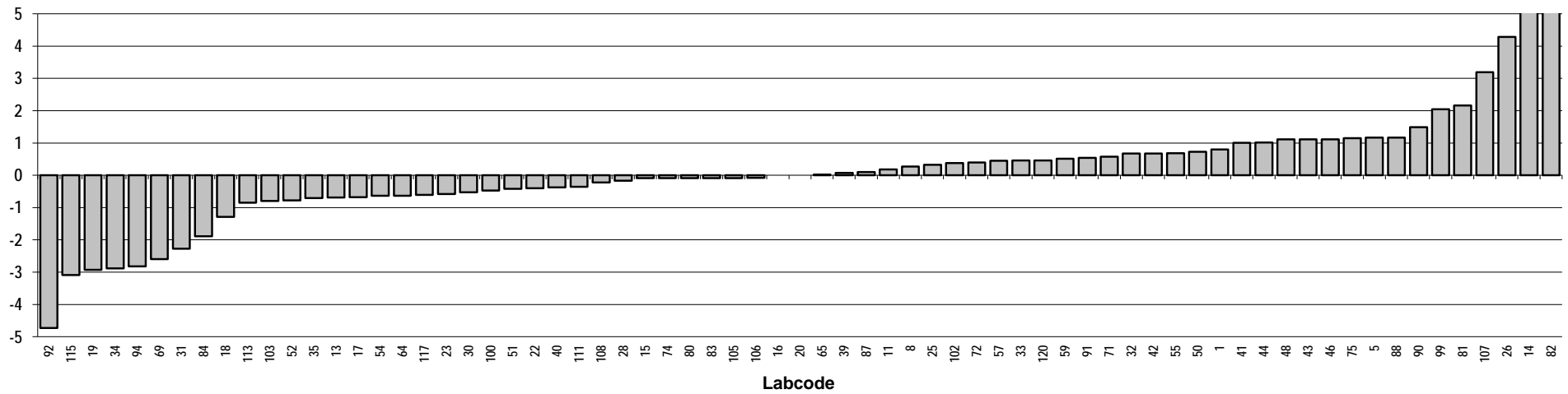
Consensus statistics

Consensus median, pg/g	0.092
Median all values pg/g	0.092
Consensus mean, pg/g	0.090
Standard deviation, pg/g	0.026
Relative standard deviation, %	29
No. of values reported	69
No. of values removed	2
No. of reported non-detects	4

2,3,4,6,7,8 HxCDF



Z-score: 2,3,4,6,7,8 HxCDF

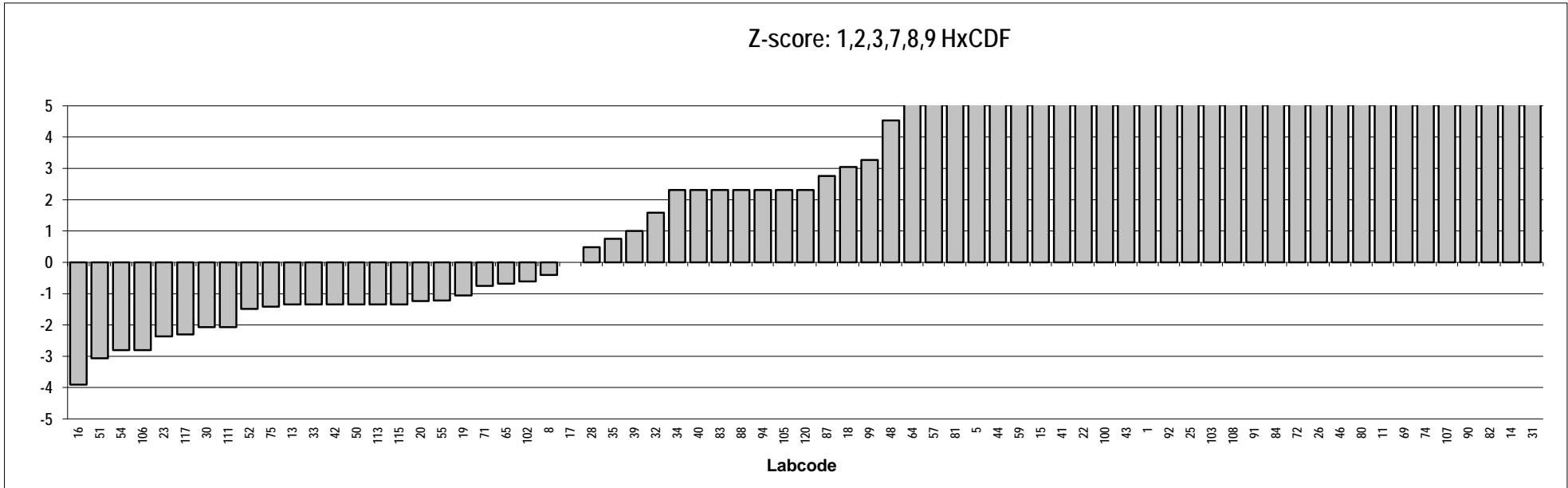
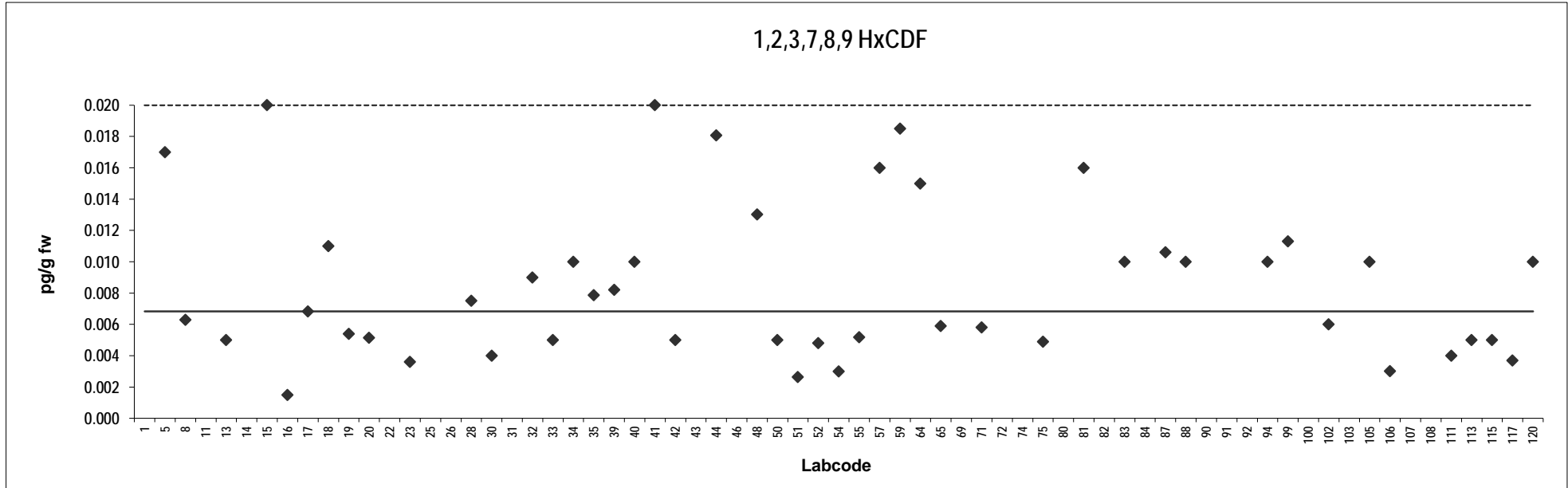


Herring
Congener: 1,2,3,7,8,9 HxCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.022	11	Outlier,ND	80	0.050	32	Outlier,ND
5	0.017	7.4	ND	81	0.016	6.7	
8	0.0063	-0.40		82	0.17	119	Outlier
11	0.053	34	Outlier,ND	83	0.010	2.3	ND
13	0.0050	-1.3	ND	84	0.038	23	Outlier
14	0.20	141	Outlier,ND	87	0.011	2.8	
15	0.020	9.6	ND	88	0.010	2.3	ND
16	0.0015	-3.9	ND	90	0.14	95	Outlier
17	0.0068	0.00		91	0.032	18	Outlier,ND
18	0.011	3.0	ND	92	0.023	12	Outlier,ND
19	0.0054	-1.1		94	0.010	2.3	ND
20	0.0052	-1.2		99	0.011	3.3	
22	0.021	10	Outlier	100	0.021	10	Outlier,ND
23	0.0036	-2.4	ND	102	0.0060	-0.61	ND
25	0.023	12	Outlier,ND	103	0.025	13	Outlier,ND
26	0.050	32	Outlier	105	0.010	2.3	ND
28	0.0075	0.49		106	0.0030	-2.8	
30	0.0040	-2.1	ND	107	0.10	68	Outlier,ND
31	0.23	163	Outlier,ND	108	0.030	17	Outlier
32	0.0090	1.6		111	0.0040	-2.1	
33	0.0050	-1.3		113	0.0050	-1.3	ND
34	0.010	2.3	ND	115	0.0050	-1.3	ND
35	0.0079	0.76	ND	117	0.0037	-2.3	
39	0.0082	1.0	ND	120	0.010	2.3	ND
40	0.010	2.3	ND				
41	0.020	9.6	ND				
42	0.0050	-1.3	ND				
43	0.022	11	Outlier,ND				
44	0.018	8.2	ND				
46	0.050	32	Outlier,ND				
48	0.013	4.5					
50	0.0050	-1.3	ND				
51	0.0026	-3.1	ND				
52	0.0048	-1.5					
54	0.0030	-2.8	ND				
55	0.0052	-1.2					
57	0.016	6.7	ND				
59	0.019	8.5					
64	0.015	6.0	ND				
65	0.0059	-0.68					
69	0.070	46	Outlier				
71	0.0058	-0.76	ND				
72	0.050	32	Outlier,ND				
74	0.090	61	Outlier				
75	0.0049	-1.4					

Consensus statistics

Consensus median, pg/g	0.0068
Median all values pg/g	0.010
Consensus mean, pg/g	0.0085
Standard deviation, pg/g	0.0050
Relative standard deviation, %	58
No. of values reported	69
No. of values removed	22
No. of reported non-detects	42

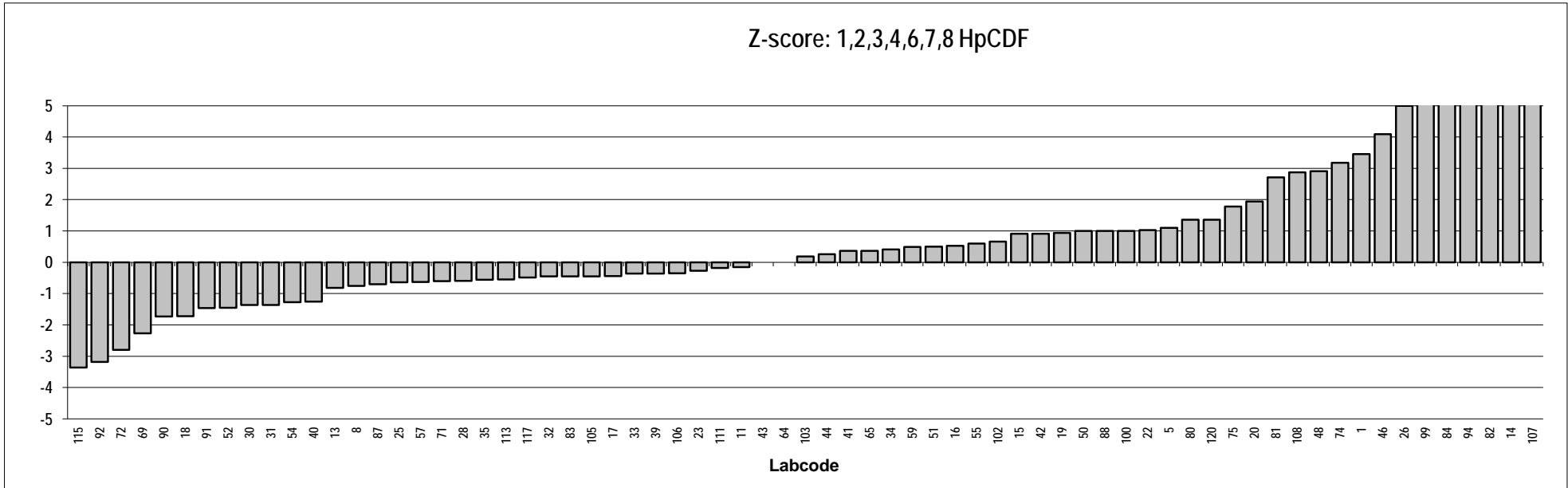
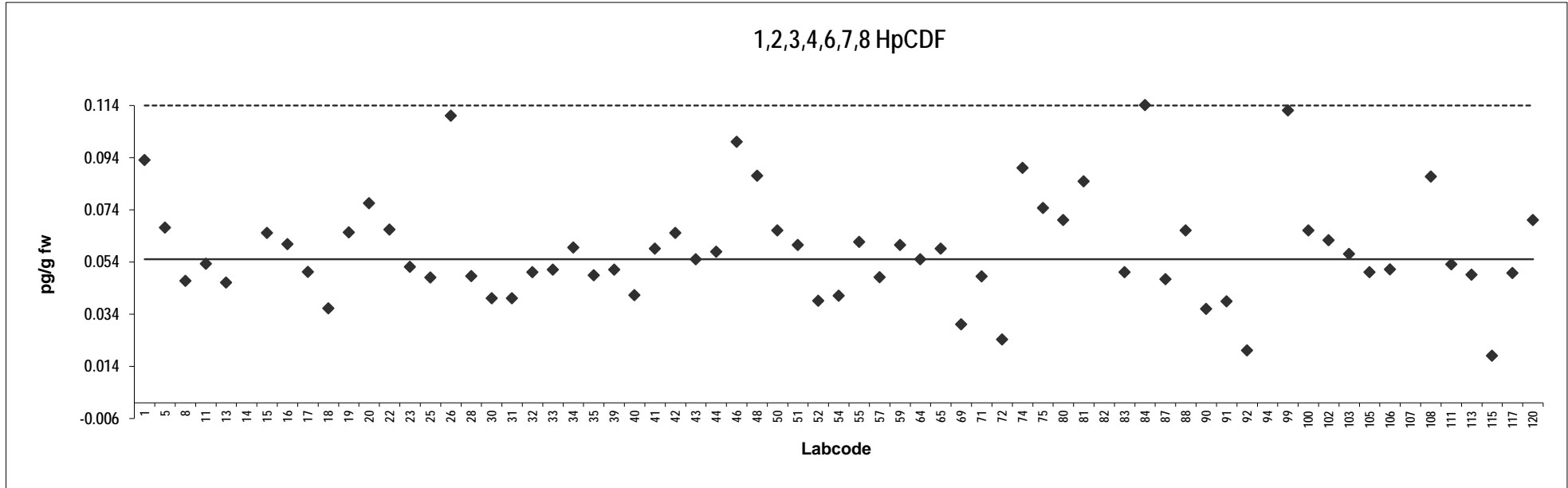


Herring
Congener: 1,2,3,4,6,7,8 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.093	3.5		80	0.070	1.4	
5	0.067	1.1		81	0.085	2.7	
8	0.047	-0.75		82	0.29	21	Outlier
11	0.053	-0.16		83	0.050	-0.45	
13	0.046	-0.82		84	0.11	5.4	ND
14	0.40	31	Outlier,ND	87	0.047	-0.70	
15	0.065	0.91		88	0.066	1.0	
16	0.061	0.53		90	0.036	-1.7	
17	0.050	-0.44		91	0.039	-1.5	
18	0.036	-1.7		92	0.020	-3.2	ND
19	0.065	0.94		94	0.12	5.9	Outlier
20	0.076	1.9		99	0.11	5.2	
22	0.066	1.0		100	0.066	1.0	
23	0.052	-0.27		102	0.062	0.66	
25	0.048	-0.64		103	0.057	0.18	
26	0.11	5.0		105	0.050	-0.45	
28	0.049	-0.59		106	0.051	-0.35	
30	0.040	-1.4		107	0.50	40	Outlier,ND
31	0.040	-1.4		108	0.087	2.9	
32	0.050	-0.45		111	0.053	-0.18	
33	0.051	-0.36		113	0.049	-0.55	
34	0.060	0.41		115	0.018	-3.4	
35	0.049	-0.56		117	0.050	-0.49	
39	0.051	-0.36		120	0.070	1.4	
40	0.041	-1.3					
41	0.059	0.36					
42	0.065	0.91					
43	0.055	0.00					
44	0.058	0.26					
46	0.10	4.1	ND				
48	0.087	2.9					
50	0.066	1.0					
51	0.060	0.50					
52	0.039	-1.5					
54	0.041	-1.3					
55	0.062	0.60					
57	0.048	-0.63					
59	0.060	0.49					
64	0.055	0.00					
65	0.059	0.36					
69	0.030	-2.3					
71	0.048	-0.60					
72	0.024	-2.8	ND				
74	0.090	3.2					
75	0.075	1.8					

Consensus statistics

Consensus median, pg/g	0.055
Median all values pg/g	0.057
Consensus mean, pg/g	0.058
Standard deviation, pg/g	0.020
Relative standard deviation, %	34
No. of values reported	69
No. of values removed	4
No. of reported non-detects	6

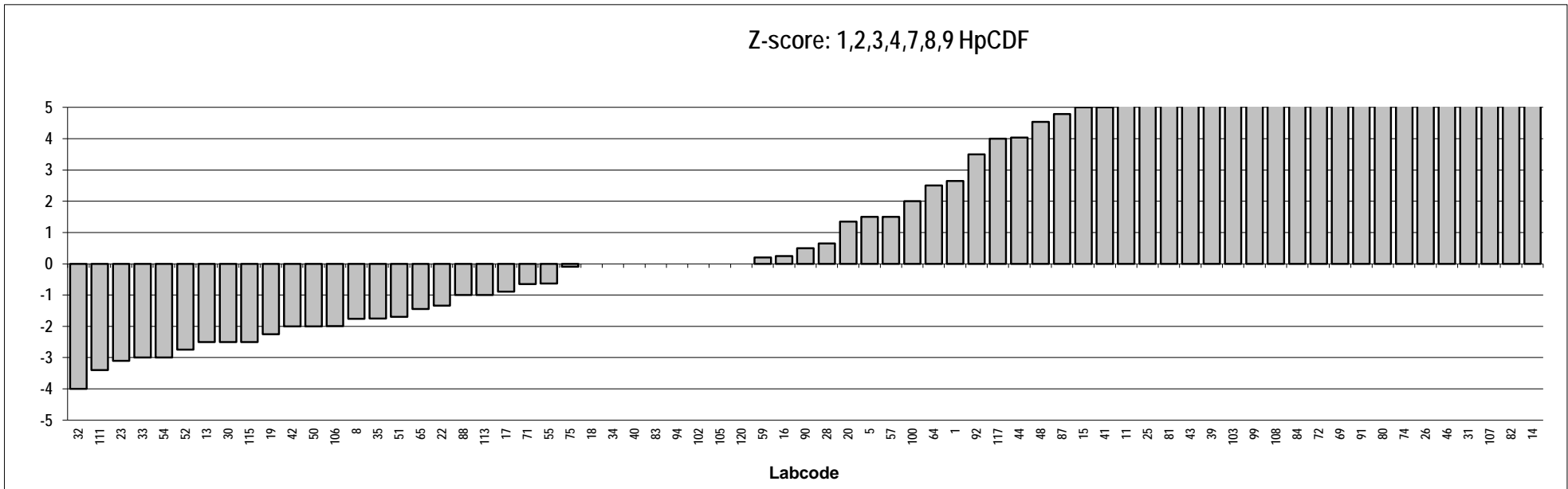
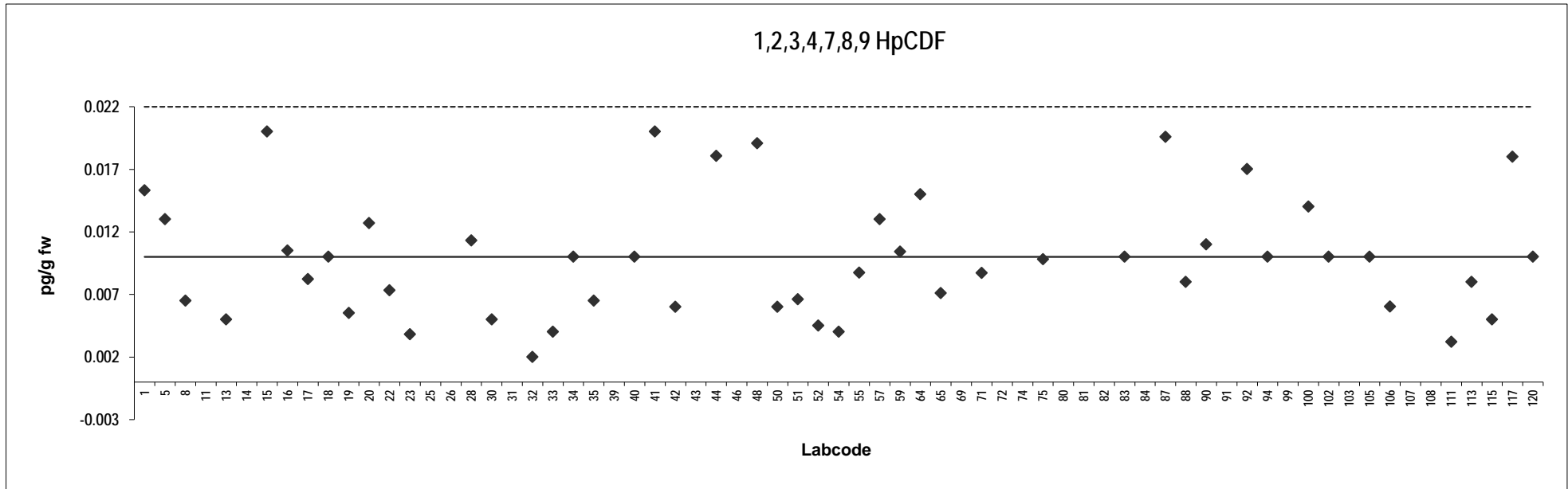


Herring
Congener: 1,2,3,4,7,8,9 HpCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.015	2.7	ND	80	0.050	20	Outlier,ND
5	0.013	1.5	ND	81	0.024	6.8	Outlier
8	0.0065	-1.8		82	0.22	107	Outlier
11	0.023	6.5	Outlier,ND	83	0.010	0.00	ND
13	0.0050	-2.5	ND	84	0.031	11	Outlier,ND
14	0.40	195	Outlier,ND	87	0.020	4.8	
15	0.020	5.0	ND	88	0.0080	-1.0	
16	0.011	0.25		90	0.011	0.50	
17	0.0082	-0.89		91	0.039	15	Outlier,ND
18	0.010	0.00		92	0.017	3.5	ND
19	0.0055	-2.3		94	0.010	0.00	ND
20	0.013	1.4		99	0.027	8.5	Outlier
22	0.0073	-1.3	ND	100	0.014	2.0	ND
23	0.0038	-3.1		102	0.010	0.00	ND
25	0.023	6.6	Outlier,ND	103	0.025	7.5	Outlier,ND
26	0.10	45	Outlier	105	0.010	0.00	ND
28	0.011	0.65		106	0.0060	-2.0	
30	0.0050	-2.5		107	0.20	95	Outlier,ND
31	0.14	65	Outlier,ND	108	0.030	10	Outlier
32	0.0020	-4.0		111	0.0032	-3.4	ND
33	0.0040	-3.0		113	0.0080	-1.0	ND
34	0.010	0.00	ND	115	0.0050	-2.5	ND
35	0.0065	-1.8	ND	117	0.018	4.0	
39	0.025	7.5	Outlier,ND	120	0.010	0.00	ND
40	0.010	0.00	ND				
41	0.020	5.0	ND				
42	0.0060	-2.0	ND				
43	0.024	7.0	Outlier				
44	0.018	4.0	ND				
46	0.10	45	Outlier,ND				
48	0.019	4.5					
50	0.0060	-2.0	ND				
51	0.0066	-1.7	ND				
52	0.0045	-2.8					
54	0.0040	-3.0	ND				
55	0.0087	-0.63					
57	0.013	1.5	ND				
59	0.010	0.20					
64	0.015	2.5	ND				
65	0.0071	-1.5					
69	0.039	15	Outlier,ND				
71	0.0087	-0.65	ND				
72	0.032	11	Outlier,ND				
74	0.090	40	Outlier				
75	0.0098	-0.098					

Consensus statistics

Consensus median, pg/g	0.010
Median all values pg/g	0.011
Consensus mean, pg/g	0.010
Standard deviation, pg/g	0.0048
Relative standard deviation, %	49
No. of values reported	69
No. of values removed	20
No. of reported non-detects	40

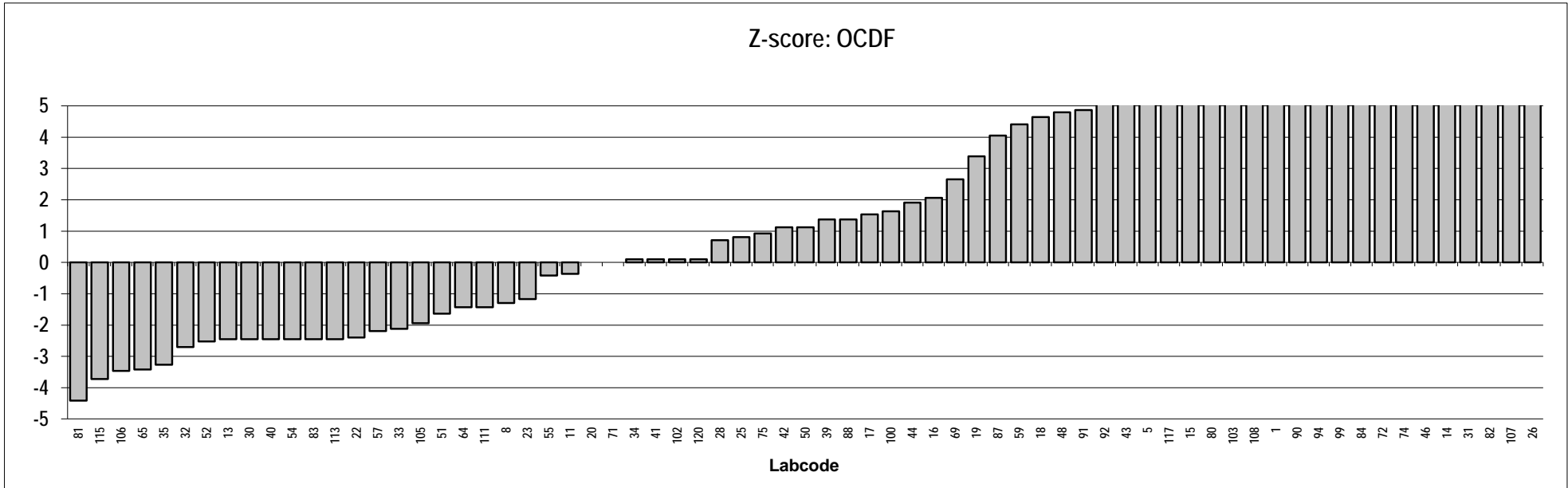
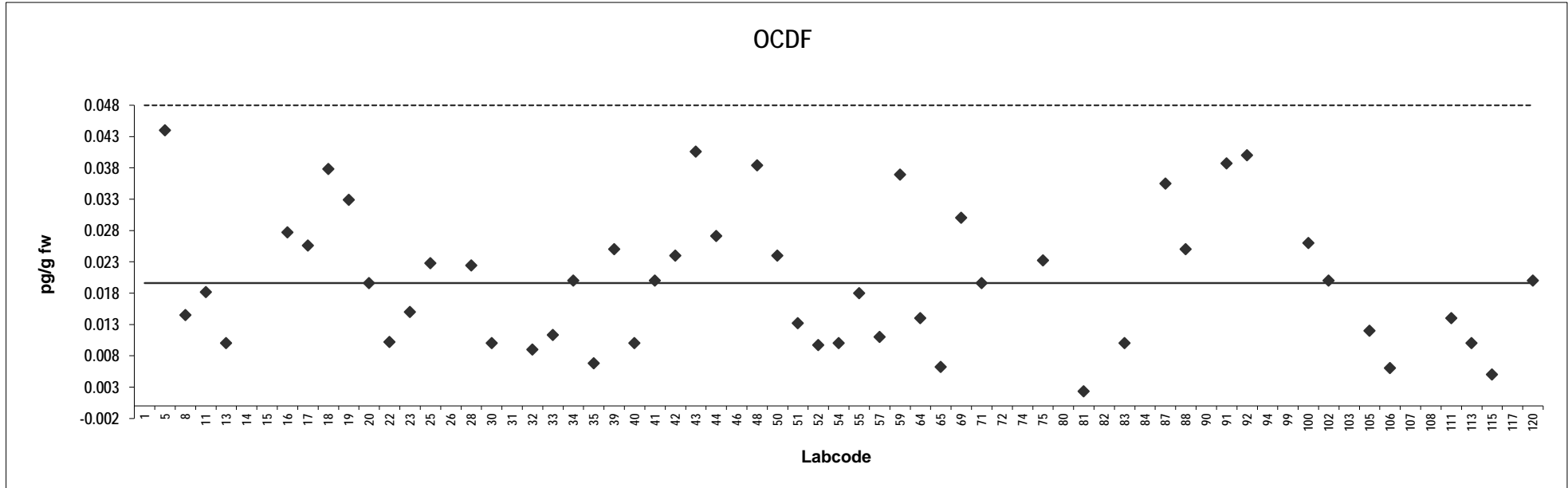


Herring
Congener: OCDF

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	0.071	13	Outlier	80	0.050	7.8	Outlier,ND
5	0.044	6.2	ND	81	0.0023	-4.4	ND
8	0.015	-1.3		82	0.49	119	Outlier
11	0.018	-0.37	ND	83	0.010	-2.4	
13	0.010	-2.4	ND	84	0.13	29	Outlier,ND
14	0.40	97	Outlier,ND	87	0.035	4.1	
15	0.050	7.8	Outlier,ND	88	0.025	1.4	
16	0.028	2.1		90	0.077	15	Outlier
17	0.026	1.5		91	0.039	4.9	ND
18	0.038	4.6		92	0.040	5.2	ND
19	0.033	3.4		94	0.090	18	Outlier
20	0.020	0.00		99	0.11	23	Outlier
22	0.010	-2.4	ND	100	0.026	1.6	ND
23	0.015	-1.2		102	0.020	0.10	ND
25	0.023	0.81	ND	103	0.050	7.8	Outlier,ND
26	0.53	130	Outlier	105	0.012	-1.9	
28	0.022	0.71		106	0.0060	-3.5	
30	0.010	-2.4		107	0.50	123	Outlier,ND
31	0.43	105	Outlier,ND	108	0.060	10	Outlier
32	0.0090	-2.7		111	0.014	-1.4	
33	0.011	-2.1		113	0.010	-2.4	ND
34	0.020	0.10	ND	115	0.0050	-3.7	ND
35	0.0068	-3.3	ND	117	0.050	7.6	Outlier,ND
39	0.025	1.4	ND	120	0.020	0.10	ND
40	0.010	-2.4	ND				
41	0.020	0.10	ND				
42	0.024	1.1					
43	0.041	5.4	ND				
44	0.027	1.9	ND				
46	0.20	46	Outlier,ND				
48	0.038	4.8					
50	0.024	1.1					
51	0.013	-1.6	ND				
52	0.0097	-2.5					
54	0.010	-2.4					
55	0.018	-0.42					
57	0.011	-2.2	ND				
59	0.037	4.4					
64	0.014	-1.4					
65	0.0062	-3.4					
69	0.030	2.7					
71	0.020	0.00					
72	0.14	30	Outlier				
74	0.19	43	Outlier				
75	0.023	0.93					

Consensus statistics

Consensus median, pg/g	0.020
Median all values pg/g	0.024
Consensus mean, pg/g	0.020
Standard deviation, pg/g	0.011
Relative standard deviation, %	54
No. of values reported	69
No. of values removed	18
No. of reported non-detects	31

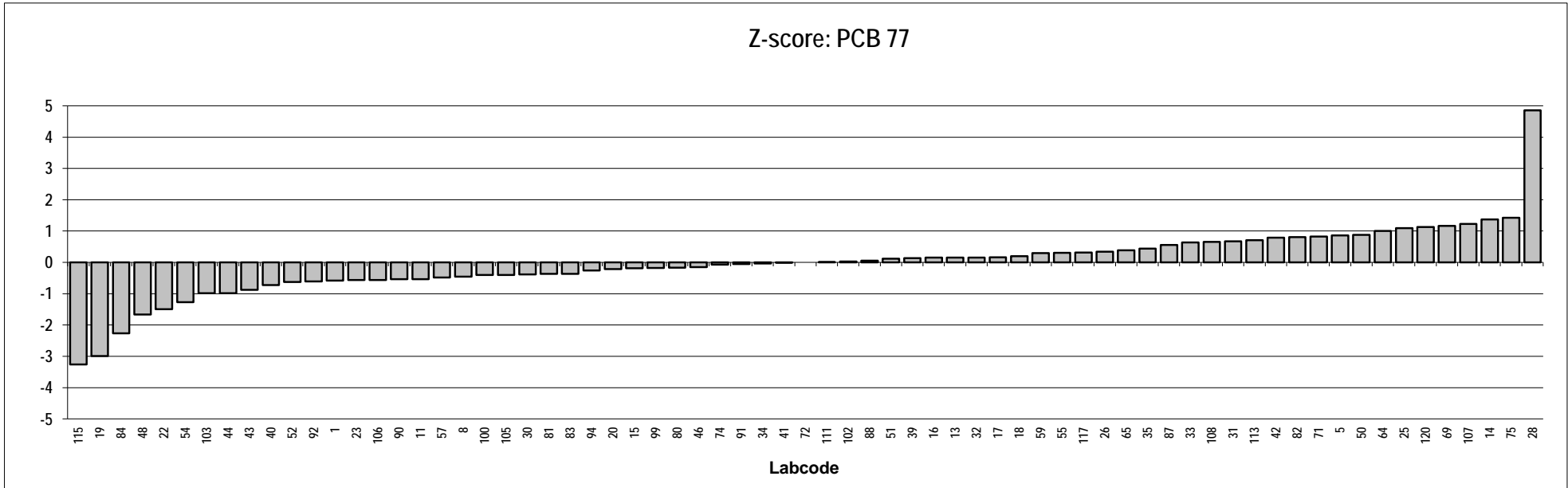
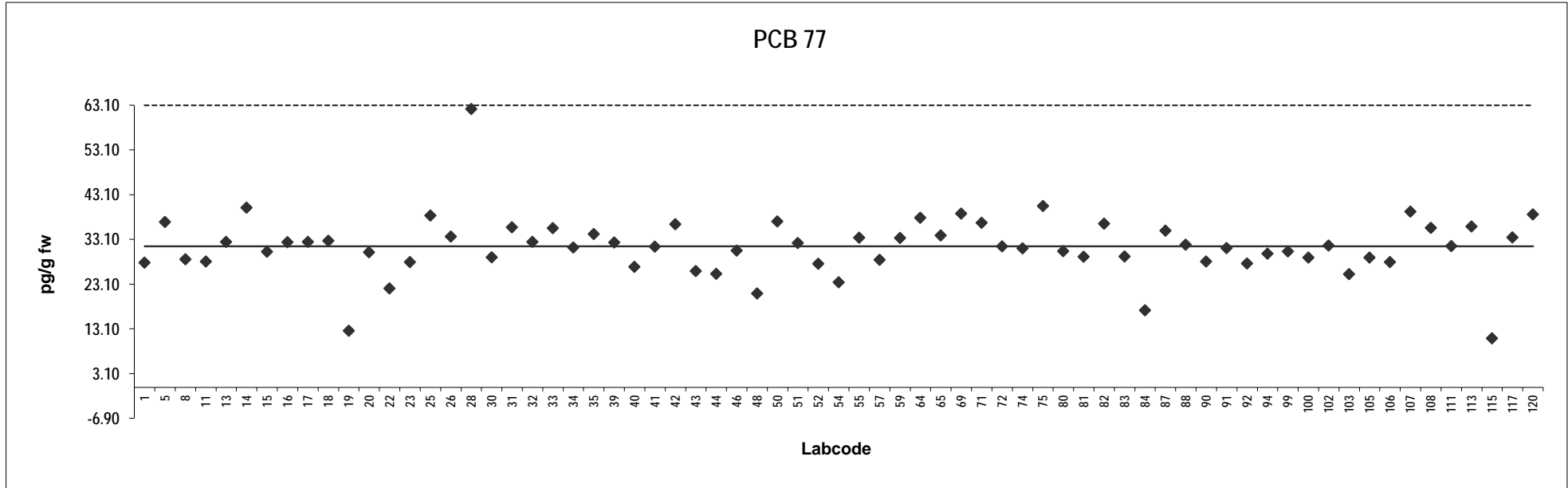


Herring
Congener: PCB 77

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	28	-0.58		80	31	-0.17	
5	37	0.86		81	29	-0.37	
8	29	-0.45		82	37	0.80	
11	28	-0.54		83	29	-0.36	
13	33	0.15		84	17	-2.3	
14	40	1.4		87	35	0.55	
15	30	-0.19		88	32	0.056	
16	33	0.15		90	28	-0.54	
17	33	0.16		91	31	-0.057	
18	33	0.20		92	28	-0.61	
19	13	-3.0		94	30	-0.26	
20	30	-0.21		99	30	-0.18	
22	22	-1.5		100	29	-0.40	
23	28	-0.56		102	32	0.024	
25	38	1.1		103	25	-0.99	
26	34	0.34		105	29	-0.40	
28	62	4.9		106	28	-0.56	
30	29	-0.39		107	39	1.2	
31	36	0.67		108	36	0.66	
32	33	0.15		111	32	0.0082	
33	36	0.64		113	36	0.71	
34	31	-0.039		115	11	-3.3	
35	34	0.44		117	34	0.32	
39	32	0.13		120	39	1.1	
40	27	-0.73					
41	32	-0.0076					
42	37	0.78					
43	26	-0.88					
44	25	-0.98					
46	31	-0.16					
48	21	-1.7					
50	37	0.88					
51	32	0.11					
52	28	-0.62					
54	24	-1.3					
55	33	0.30					
57	29	-0.48					
59	33	0.29					
64	38	1.0					
65	34	0.38					
69	39	1.2					
71	37	0.83					
72	32	0.00					
74	31	-0.071					
75	41	1.4					

Consensus statistics

Consensus median, pg/g	32
Median all values pg/g	32
Consensus mean, pg/g	31
Standard deviation, pg/g	6.8
Relative standard deviation, %	22
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

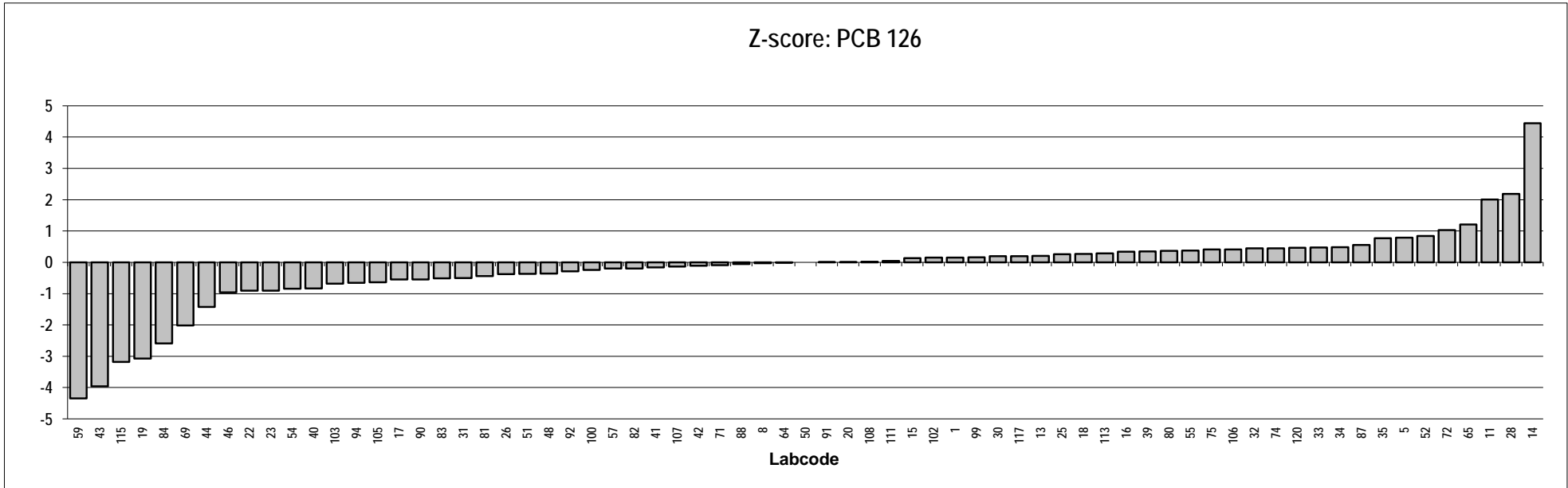
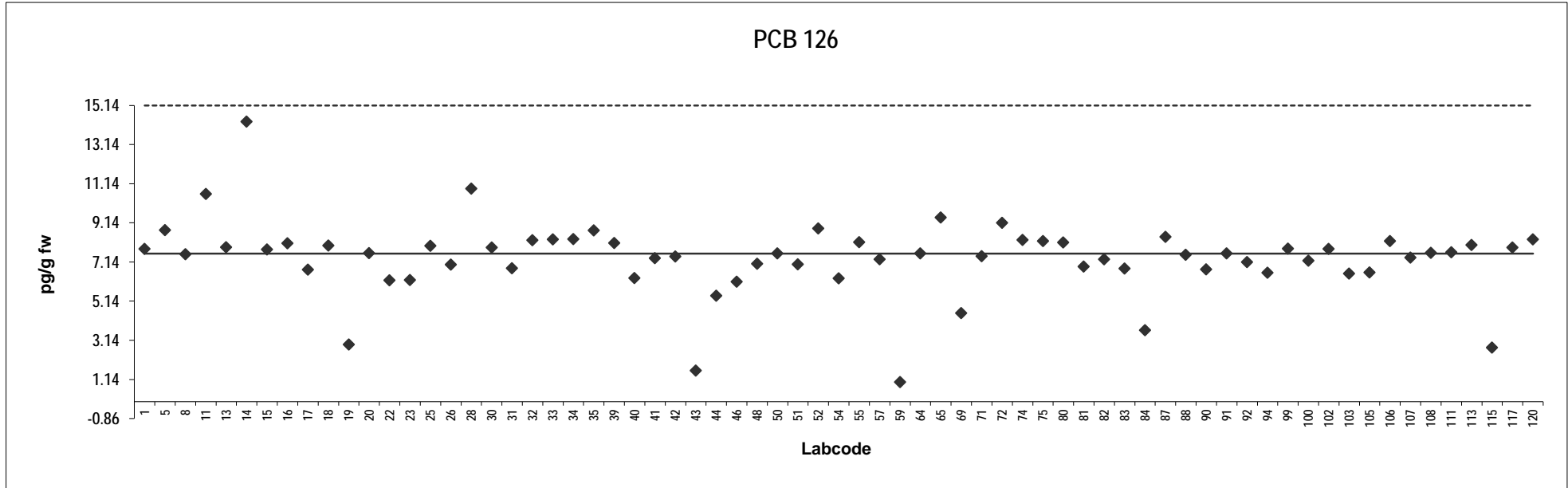


Herring
Congener: PCB 126

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	7.8	0.15		80	8.1	0.36	
5	8.8	0.79		81	6.9	-0.44	
8	7.5	-0.026		82	7.3	-0.20	
11	11	2.0		83	6.8	-0.51	
13	7.9	0.21		84	3.7	-2.6	
14	14	4.4		87	8.4	0.55	
15	7.8	0.13		88	7.5	-0.053	
16	8.1	0.34		90	6.7	-0.55	
17	6.7	-0.55		91	7.6	0.0016	
18	8.0	0.26		92	7.1	-0.29	
19	2.9	-3.1		94	6.6	-0.65	
20	7.6	0.0066		99	7.8	0.16	
22	6.2	-0.91		100	7.2	-0.24	
23	6.2	-0.90		102	7.8	0.15	
25	8.0	0.26		103	6.5	-0.69	
26	7.0	-0.38		105	6.6	-0.64	
28	11	2.2		106	8.2	0.41	
30	7.9	0.20		107	7.4	-0.14	
31	6.8	-0.50		108	7.6	0.013	
32	8.2	0.44		111	7.6	0.040	
33	8.3	0.48		113	8.0	0.28	
34	8.3	0.48		115	2.8	-3.2	
35	8.7	0.77		117	7.9	0.20	
39	8.1	0.35		120	8.3	0.47	
40	6.3	-0.83					
41	7.3	-0.17					
42	7.4	-0.11					
43	1.6	-4.0	ND				
44	5.4	-1.4					
46	6.1	-0.96					
48	7.0	-0.36					
50	7.6	0.00					
51	7.0	-0.37					
52	8.8	0.84					
54	6.3	-0.84					
55	8.1	0.37					
57	7.3	-0.20					
59	0.99	-4.3					
64	7.6	0.00					
65	9.4	1.2					
69	4.5	-2.0					
71	7.4	-0.092					
72	9.1	1.0					
74	8.3	0.45					
75	8.2	0.41					

Consensus statistics

Consensus median, pg/g	7.6
Median all values pg/g	7.6
Consensus mean, pg/g	7.3
Standard deviation, pg/g	1.9
Relative standard deviation, %	26
No. of values reported	69
No. of values removed	0
No. of reported non-detects	1



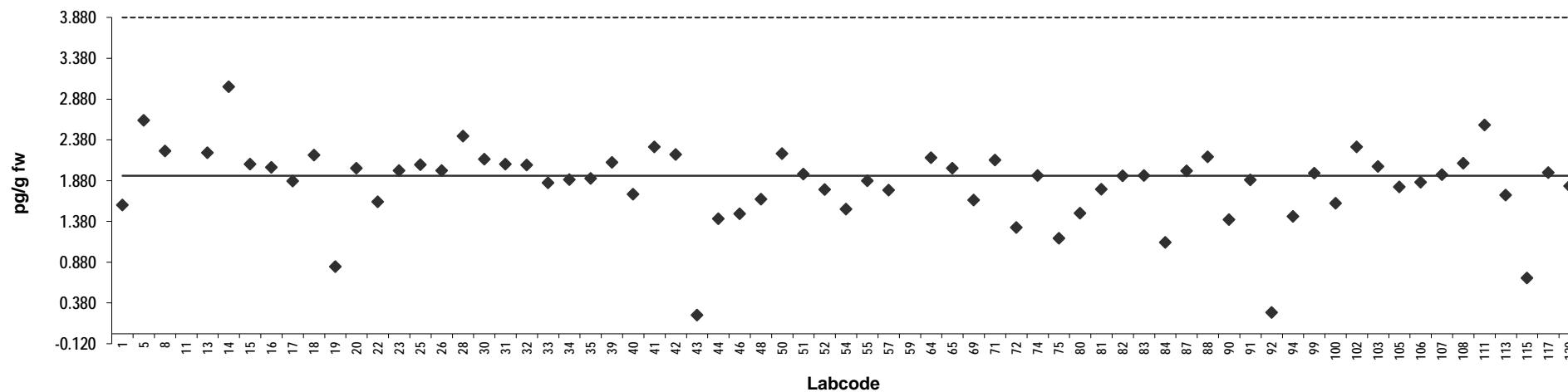
Herring
Congener: PCB 169

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1.6	-0.93		80	1.5	-1.2	
5	2.6	1.7		81	1.8	-0.44	
8	2.2	0.78		82	1.9	-0.011	
11	8.9	18	Outlier,ND	83	1.9	0.00	
13	2.2	0.72		84	1.1	-2.1	
14	3.0	2.8		87	2.0	0.15	
15	2.1	0.36		88	2.2	0.59	
16	2.0	0.26		90	1.4	-1.4	
17	1.9	-0.17		91	1.9	-0.14	
18	2.2	0.64		92	0.26	-4.3	ND
19	0.82	-2.9		94	1.4	-1.3	
20	2.0	0.23		99	2.0	0.077	
22	1.6	-0.83		100	1.6	-0.88	
23	2.0	0.15		102	2.3	0.90	
25	2.1	0.34		103	2.1	0.29	
26	2.0	0.15		105	1.8	-0.36	
28	2.4	1.3		106	1.9	-0.21	
30	2.1	0.52		107	2.0	0.026	
31	2.1	0.36		108	2.1	0.39	
32	2.1	0.34		111	2.6	1.6	
33	1.9	-0.23		113	1.7	-0.62	
34	1.9	-0.13		115	0.69	-3.2	
35	1.9	-0.093		117	2.0	0.091	
39	2.1	0.41		120	1.8	-0.34	
40	1.7	-0.59					
41	2.3	0.90					
42	2.2	0.67					
43	0.23	-4.4	ND				
44	1.4	-1.4					
46	1.5	-1.2					
48	1.6	-0.75					
50	2.2	0.70					
51	2.0	0.049					
52	1.8	-0.44					
54	1.5	-1.1					
55	1.9	-0.17					
57	1.8	-0.46					
59	8.5	17	Outlier				
64	2.2	0.57					
65	2.0	0.23					
69	1.6	-0.77					
71	2.1	0.49					
72	1.3	-1.6					
74	1.9	0.00					
75	1.2	-2.0					

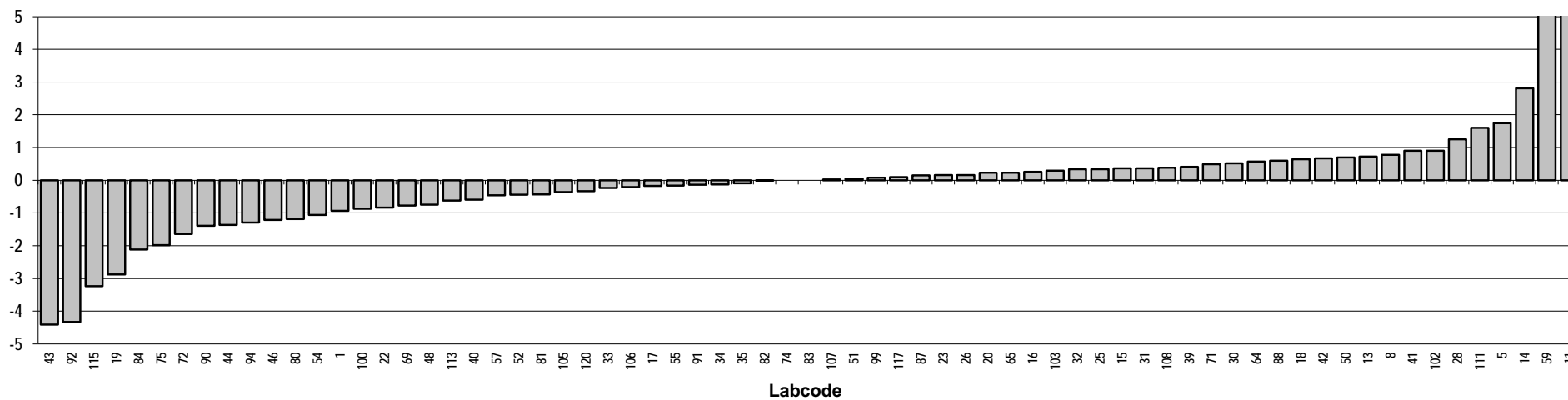
Consensus statistics

Consensus median, pg/g	1.9
Median all values pg/g	1.9
Consensus mean, pg/g	1.8
Standard deviation, pg/g	0.48
Relative standard deviation, %	26
No. of values reported	69
No. of values removed	2
No. of reported non-detects	3

PCB 169



Z-score: PCB 169

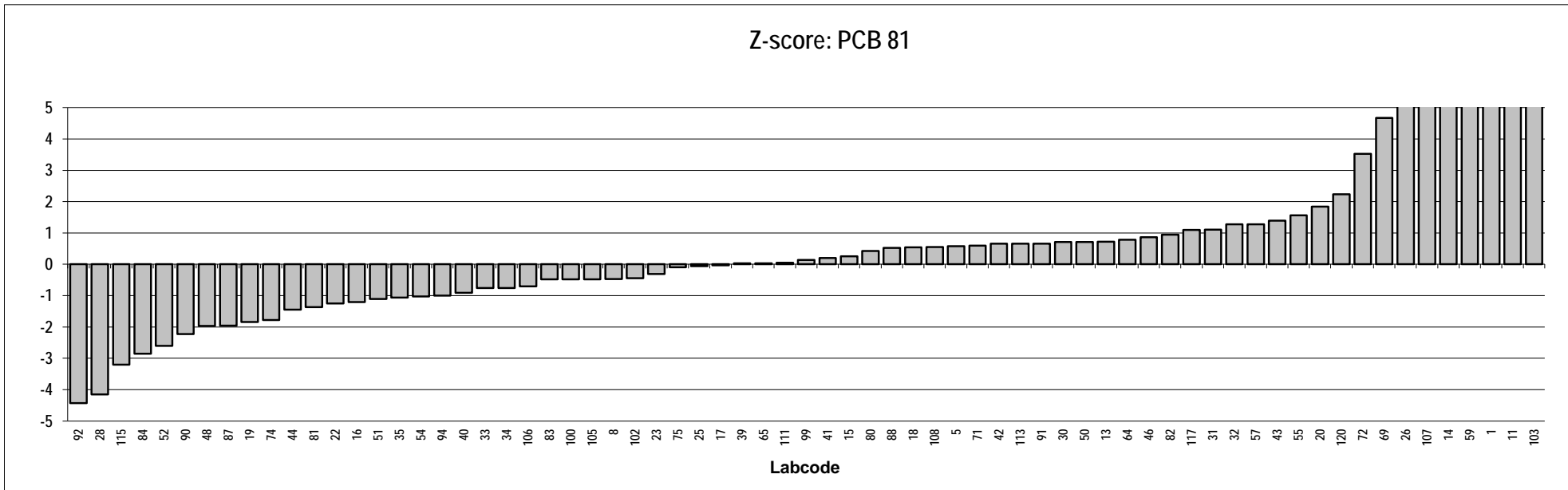
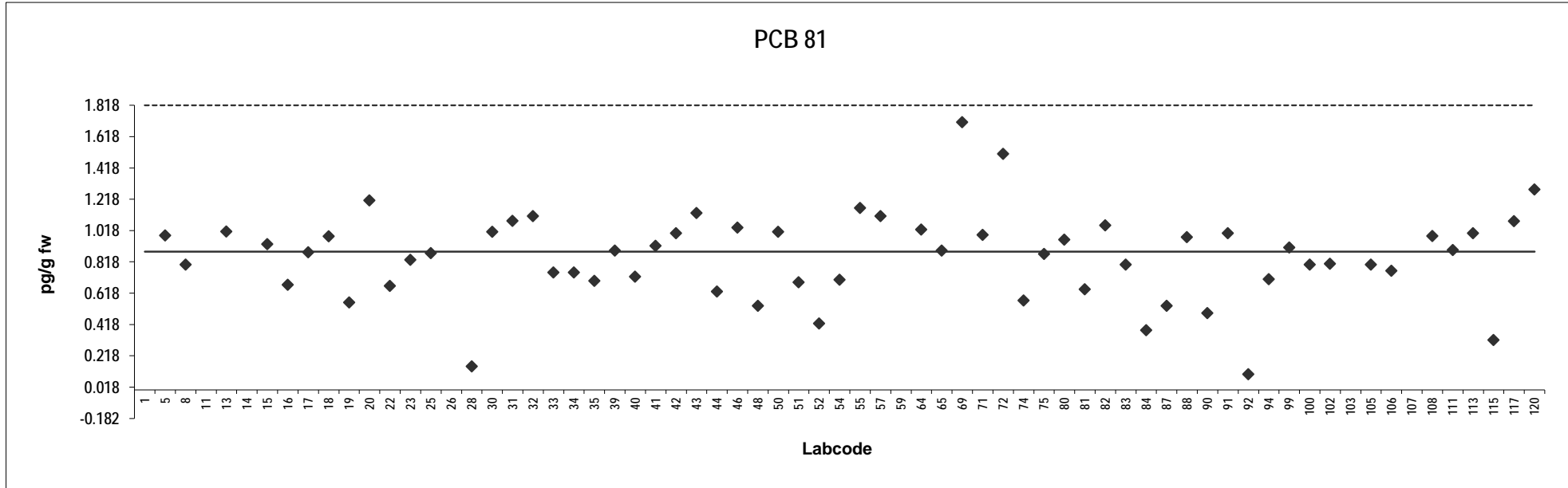


Herring
Congener: PCB 81

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2.8	11	Outlier	80	0.96	0.43	
5	0.99	0.58		81	0.64	-1.4	
8	0.80	-0.47		82	1.1	0.95	
11	3.4	14	Outlier,ND	83	0.80	-0.48	
13	1.0	0.72		84	0.38	-2.9	
14	2.0	6.5	Outlier	87	0.54	-2.0	
15	0.93	0.26		88	0.98	0.52	
16	0.67	-1.2		90	0.49	-2.2	
17	0.88	-0.033		91	1.0	0.66	
18	0.98	0.54		92	0.10	-4.4	ND
19	0.56	-1.8		94	0.71	-1.0	
20	1.2	1.8		99	0.91	0.14	
22	0.66	-1.2		100	0.80	-0.48	
23	0.83	-0.31		102	0.81	-0.45	
25	0.87	-0.061		103	4.3	19	Outlier
26	2.0	6.3	Outlier,ND	105	0.80	-0.48	
28	0.15	-4.2	ND	106	0.76	-0.70	
30	1.0	0.71		107	2.0	6.3	Outlier,ND
31	1.1	1.1		108	0.98	0.55	
32	1.1	1.3		111	0.89	0.050	
33	0.75	-0.76		113	1.0	0.66	
34	0.75	-0.76		115	0.32	-3.2	
35	0.70	-1.1		117	1.1	1.1	
39	0.89	0.033		120	1.3	2.2	
40	0.72	-0.91					
41	0.92	0.20					
42	1.0	0.66					
43	1.1	1.4					
44	0.63	-1.4					
46	1.0	0.86					
48	0.54	-2.0					
50	1.0	0.71					
51	0.69	-1.1					
52	0.42	-2.6					
54	0.70	-1.0					
55	1.2	1.6					
57	1.1	1.3					
59	2.0	6.5	Outlier				
64	1.0	0.79					
65	0.89	0.033					
69	1.7	4.7					
71	0.99	0.60					
72	1.5	3.5					
74	0.57	-1.8					
75	0.87	-0.093					

Consensus statistics

Consensus median, pg/g	0.88
Median all values pg/g	0.91
Consensus mean, pg/g	0.85
Standard deviation, pg/g	0.28
Relative standard deviation, %	33
No. of values reported	69
No. of values removed	7
No. of reported non-detects	5

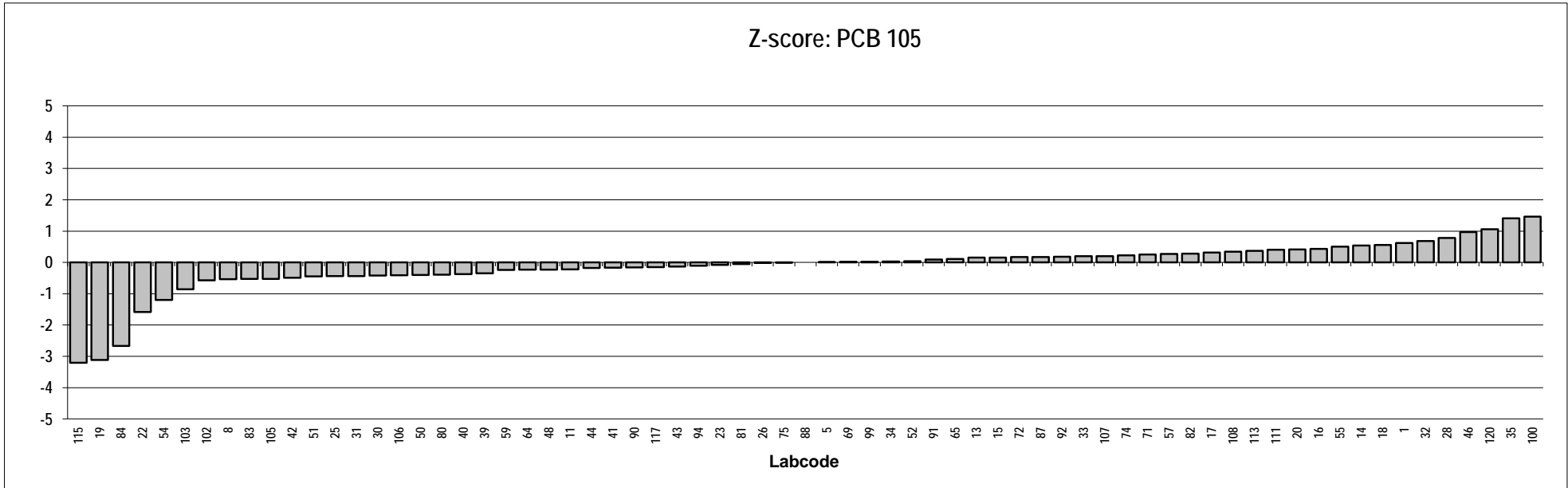
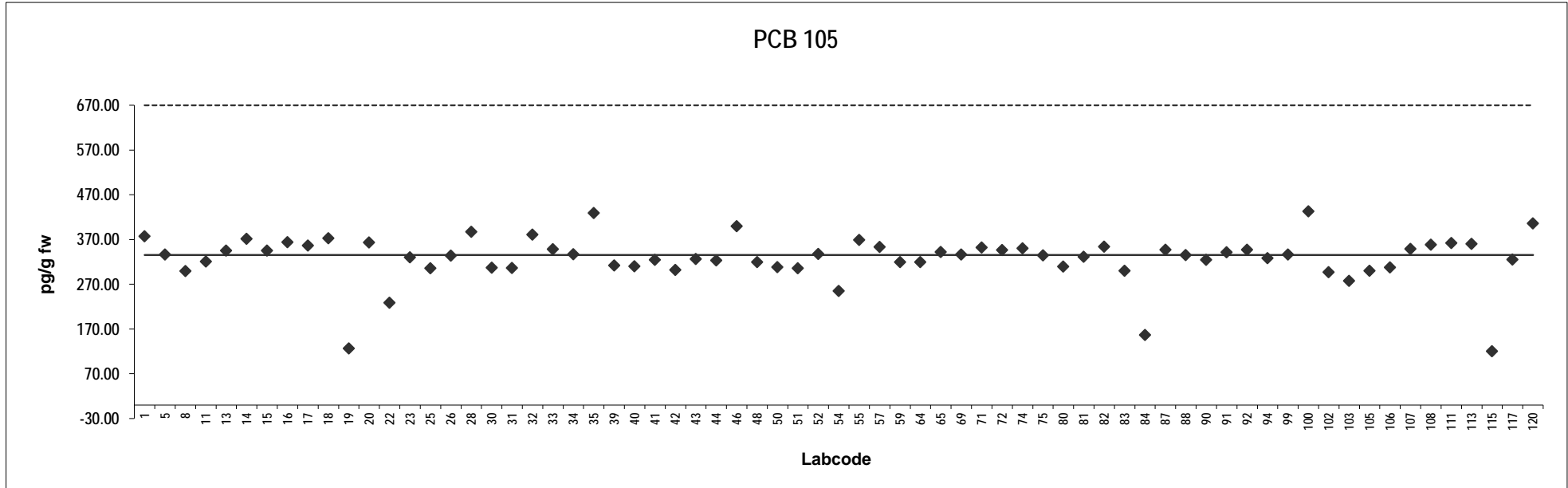


Herring
Congener: PCB 105

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	377	0.62		80	309	-0.39	
5	336	0.015		81	331	-0.053	
8	299	-0.54		82	354	0.28	
11	320	-0.22		83	300	-0.52	
13	345	0.15		84	156	-2.7	
14	371	0.54		87	347	0.17	
15	345	0.15		88	335	0.00	
16	364	0.43		90	324	-0.16	
17	356	0.32		91	341	0.093	
18	372	0.56		92	347	0.18	
19	126	-3.1		94	328	-0.10	
20	363	0.42		99	336	0.018	
22	229	-1.6		100	433	1.5	
23	330	-0.075		102	297	-0.57	
25	306	-0.44		103	277	-0.86	
26	334	-0.015		105	300	-0.52	
28	387	0.78		106	308	-0.41	
30	307	-0.42		107	349	0.20	
31	306	-0.43		108	358	0.34	
32	381	0.69		111	362	0.40	
33	348	0.20		113	360	0.37	
34	337	0.030		115	120	-3.2	
35	429	1.4		117	325	-0.15	
39	312	-0.34		120	406	1.1	
40	310	-0.38					
41	324	-0.16					
42	302	-0.49					
43	326	-0.13					
44	323	-0.18					
46	400	0.97					
48	320	-0.23					
50	308	-0.40					
51	305	-0.44					
52	338	0.037					
54	255	-1.2					
55	369	0.50					
57	353	0.27					
59	319	-0.24					
64	319	-0.23					
65	342	0.11					
69	336	0.017					
71	352	0.25					
72	347	0.17					
74	350	0.22					
75	334	-0.0085					

Consensus statistics

Consensus median, pg/g	335
Median all values pg/g	335
Consensus mean, pg/g	328
Standard deviation, pg/g	54
Relative standard deviation, %	16
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

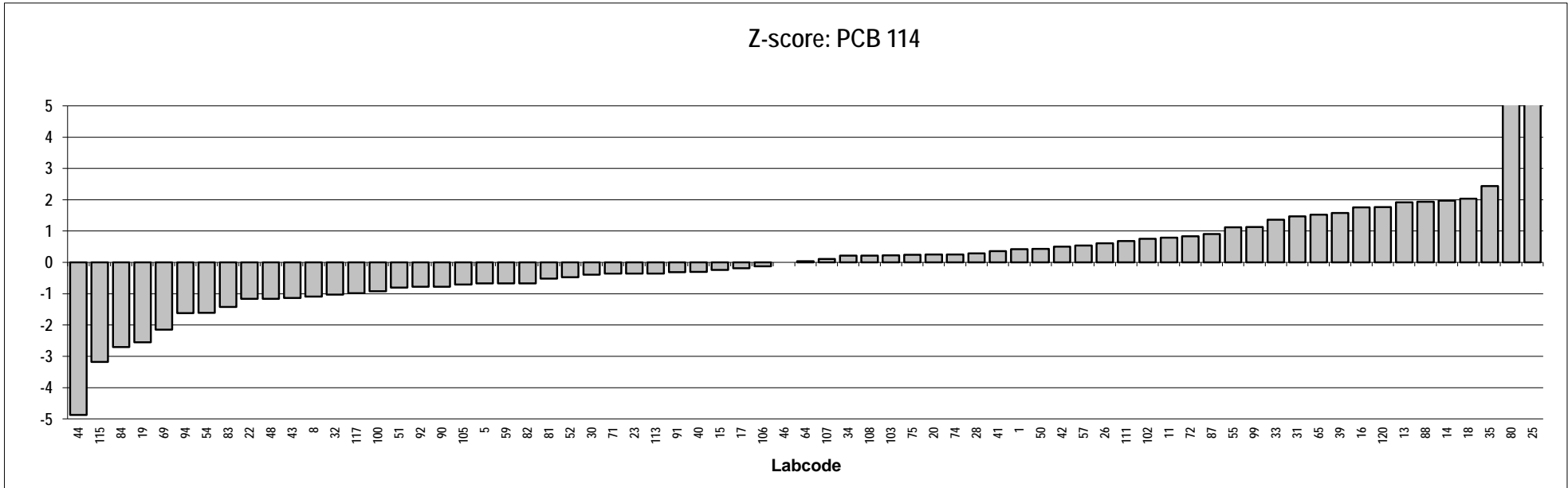
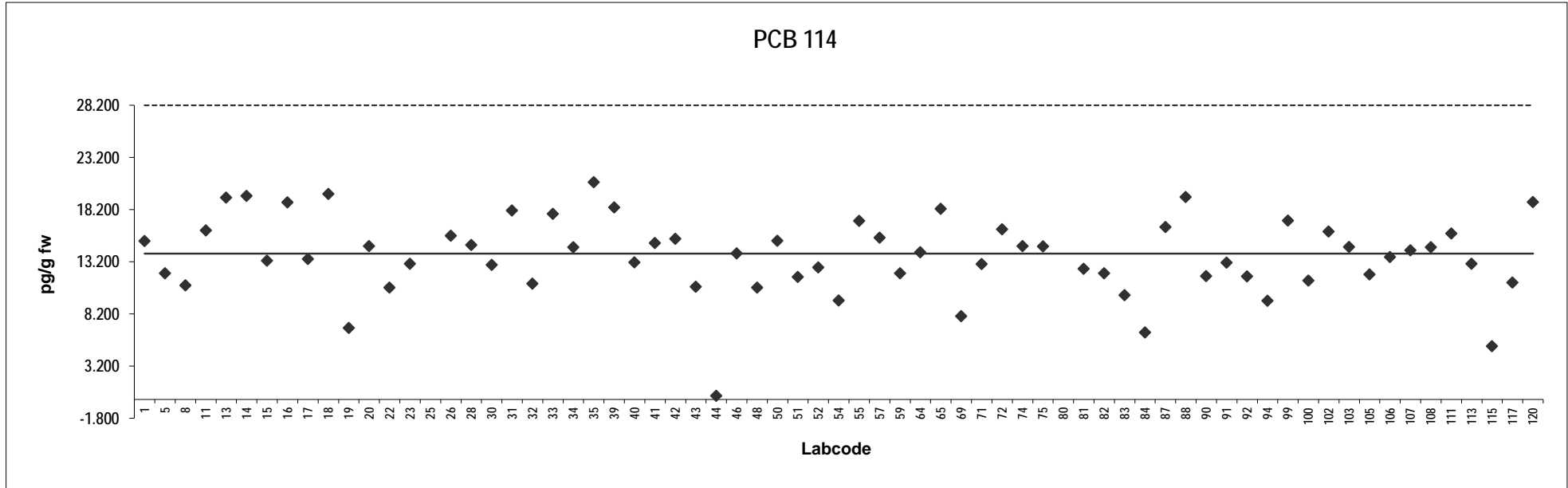


Herring
Congener: PCB 114

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	15	0.42		80	39	8.9	Outlier
5	12	-0.68		81	13	-0.52	
8	11	-1.1	ND	82	12	-0.67	
11	16	0.79		83	10	-1.4	
13	19	1.9		84	6.4	-2.7	
14	20	2.0		87	17	0.91	
15	13	-0.24		88	19	1.9	
16	19	1.8		90	12	-0.77	
17	13	-0.19		91	13	-0.32	
18	20	2.0		92	12	-0.78	
19	6.9	-2.6		94	9.5	-1.6	
20	15	0.25		99	17	1.1	
22	11	-1.2		100	11	-0.93	
23	13	-0.35		102	16	0.75	
25	43	11	Outlier	103	15	0.23	
26	16	0.61		105	12	-0.71	
28	15	0.29		106	14	-0.13	
30	13	-0.39		107	14	0.11	
31	18	1.5		108	15	0.22	
32	11	-1.0		111	16	0.68	
33	18	1.4		113	13	-0.35	
34	15	0.22		115	5.1	-3.2	
35	21	2.4		117	11	-0.99	
39	18	1.6		120	19	1.8	
40	13	-0.31					
41	15	0.36					
42	15	0.50					
43	11	-1.1					
44	0.36	-4.9	ND				
46	14	0.00					
48	11	-1.2					
50	15	0.43					
51	12	-0.80					
52	13	-0.48					
54	9.5	-1.6					
55	17	1.1					
57	16	0.54					
59	12	-0.68					
64	14	0.039					
65	18	1.5					
69	8.0	-2.1					
71	13	-0.36					
72	16	0.83					
74	15	0.25					
75	15	0.24					

Consensus statistics

Consensus median, pg/g	14
Median all values pg/g	14
Consensus mean, pg/g	14
Standard deviation, pg/g	3.7
Relative standard deviation, %	27
No. of values reported	69
No. of values removed	2
No. of reported non-detects	2

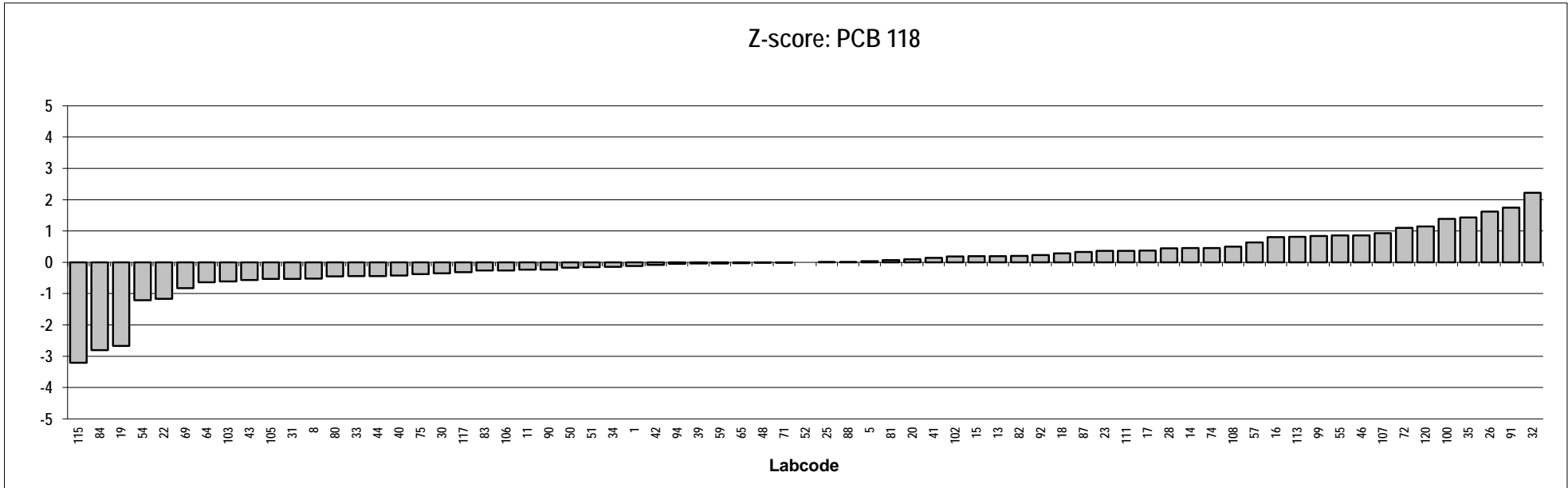
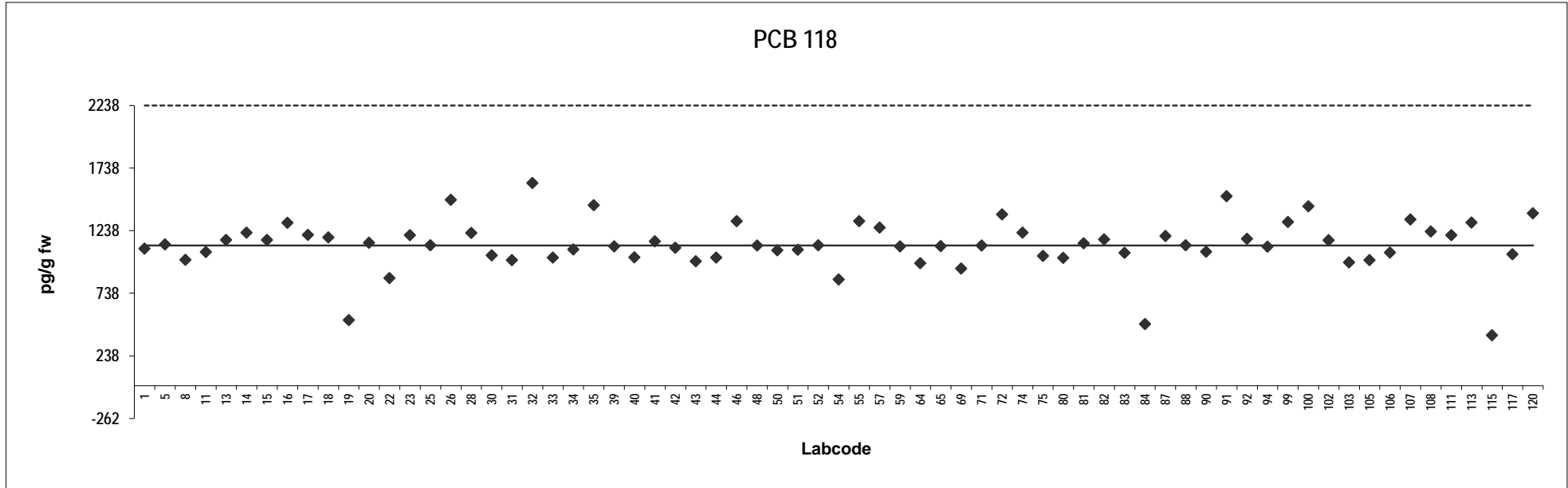


Herring
Congener: PCB 118

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1092	-0.12		80	1018	-0.45	
5	1126	0.032		81	1134	0.069	
8	1003	-0.52		82	1166	0.21	
11	1067	-0.23		83	1060	-0.26	
13	1163	0.20		84	491	-2.8	
14	1220	0.45		87	1193	0.33	
15	1163	0.20		88	1120	0.0050	
16	1299	0.80		90	1067	-0.23	
17	1203	0.37		91	1510	1.7	
18	1183	0.29		92	1170	0.23	
19	521	-2.7		94	1109	-0.044	
20	1140	0.094		99	1306	0.84	
22	858	-1.2		100	1430	1.4	
23	1200	0.36		102	1160	0.18	
25	1119	0.0013		103	982	-0.61	
26	1482	1.6		105	1000	-0.53	
28	1219	0.45		106	1061	-0.26	
30	1040	-0.35		107	1326	0.93	
31	1001	-0.53		108	1230	0.50	
32	1616	2.2		111	1200	0.36	
33	1020	-0.44		113	1300	0.81	
34	1086	-0.15		115	400	-3.2	
35	1440	1.4		117	1048	-0.32	
39	1110	-0.040		120	1374	1.1	
40	1023	-0.43					
41	1150	0.14					
42	1100	-0.084					
43	992	-0.57					
44	1021	-0.44					
46	1311	0.86					
48	1117	-0.0068					
50	1080	-0.17					
51	1084	-0.15					
52	1119	0.00					
54	847	-1.2					
55	1311	0.86					
57	1260	0.63					
59	1110	-0.040					
64	975	-0.64					
65	1113	-0.025					
69	933	-0.83					
71	1118	-0.0060					
72	1365	1.1					
74	1220	0.45					
75	1034	-0.38					

Consensus statistics

Consensus median, pg/g	1119
Median all values pg/g	1119
Consensus mean, pg/g	1123
Standard deviation, pg/g	203
Relative standard deviation, %	18
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

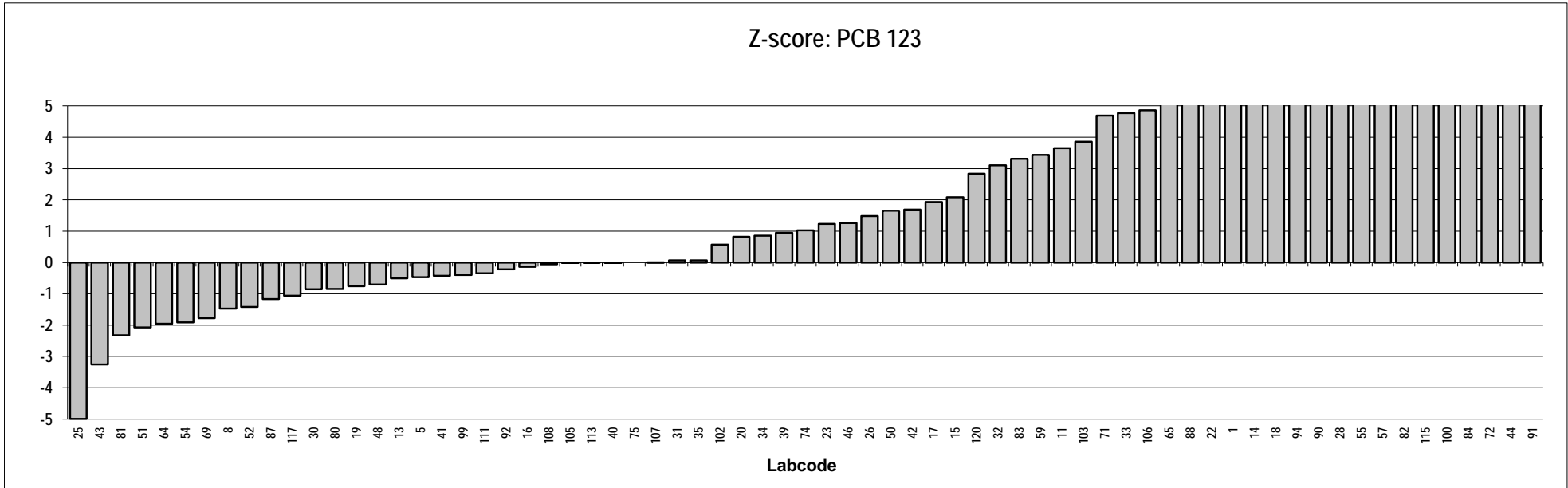
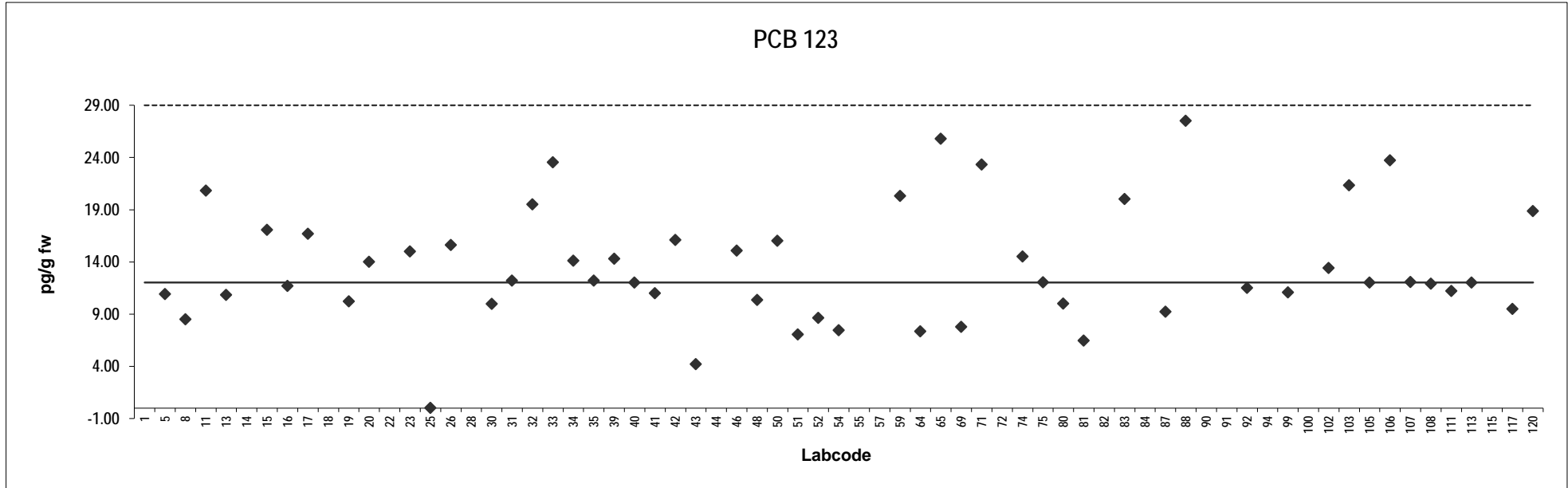


Herring
Congener: PCB 123

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	33	8.9	Outlier	80	10	-0.84	ND
5	11	-0.47		81	6.4	-2.3	
8	8.5	-1.5	ND	82	73	25	Outlier
11	21	3.7	ND	83	20	3.3	
13	11	-0.50		84	111	41	Outlier
14	40	12	Outlier	87	9.2	-1.2	
15	17	2.1		88	28	6.4	ND
16	12	-0.14		90	52	17	Outlier
17	17	1.9		91	210	82	Outlier
18	45	14	Outlier	92	12	-0.22	
19	10	-0.76		94	47	14	Outlier
20	14	0.82		99	11	-0.40	
22	29	7.1	Outlier	100	86	31	Outlier
23	15	1.2		102	13	0.57	
25	0.0047	-5.0	ND	103	21	3.9	
26	16	1.5		105	12	-0.013	
28	52	17	Outlier	106	24	4.9	
30	10	-0.85		107	12	0.0082	
31	12	0.071		108	12	-0.054	
32	20	3.1		111	11	-0.35	
33	24	4.8		113	12	-0.013	
34	14	0.86		115	75	26	Outlier,ND
35	12	0.071		117	9.5	-1.1	
39	14	0.94		120	19	2.8	
40	12	-0.0096					
41	11	-0.43					
42	16	1.7					
43	4.2	-3.3					
44	137	52	Outlier				
46	15	1.3					
48	10	-0.70					
50	16	1.6					
51	7.0	-2.1					
52	8.6	-1.4					
54	7.4	-1.9					
55	55	18	Outlier				
57	58	19	Outlier				
59	20	3.4					
64	7.3	-2.0	ND				
65	26	5.7					
69	7.8	-1.8					
71	23	4.7					
72	122	46	Outlier				
74	15	1.0					
75	12	0.00					

Consensus statistics

Consensus median, pg/g	12
Median all values pg/g	15
Consensus mean, pg/g	14
Standard deviation, pg/g	5.6
Relative standard deviation, %	41
No. of values reported	69
No. of values removed	16
No. of reported non-detects	7

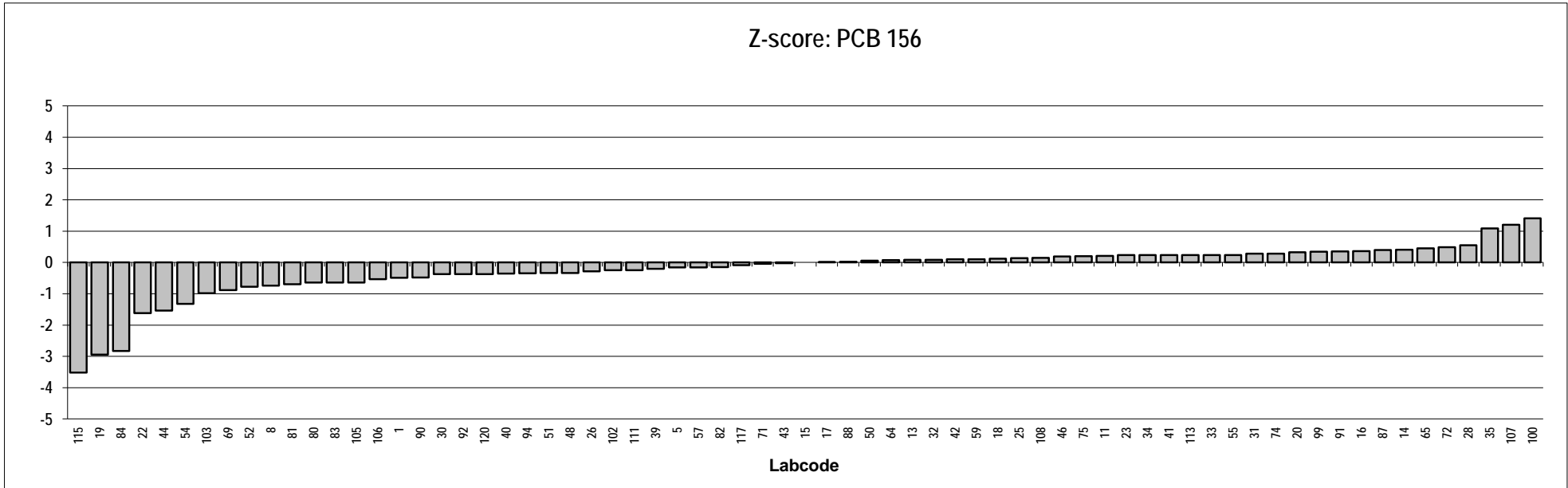
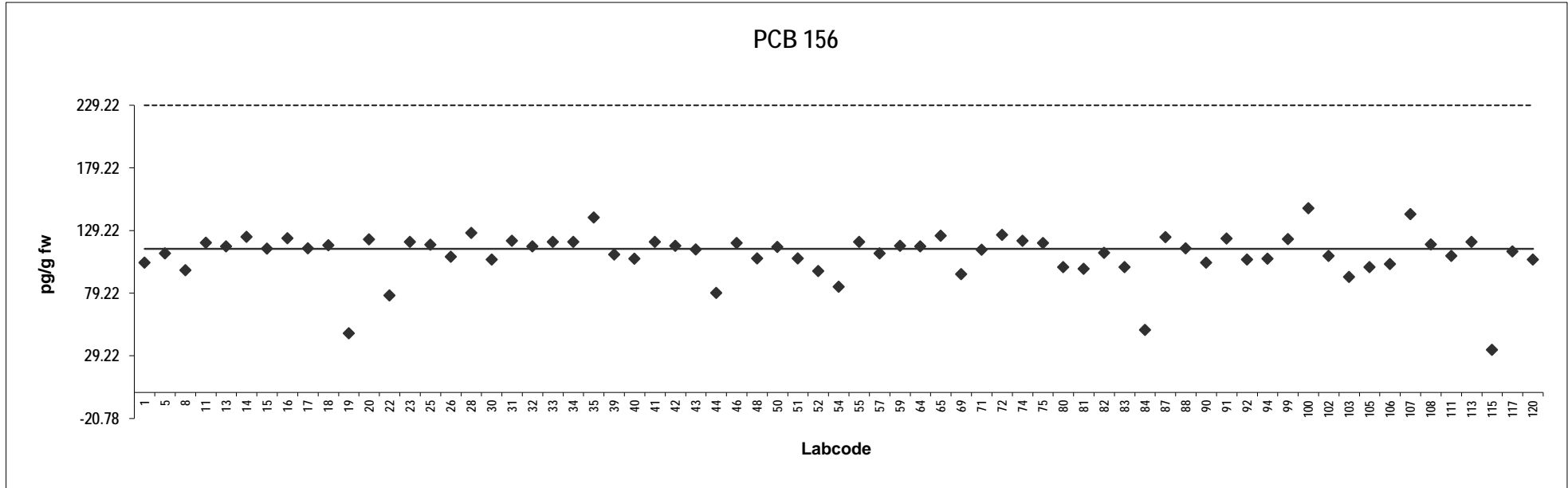


Herring
Congener: PCB 156

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	103	-0.49		80	100	-0.64	
5	111	-0.16		81	99	-0.69	
8	98	-0.74		82	111	-0.15	
11	119	0.21		83	100	-0.64	
13	116	0.080		84	50	-2.8	
14	124	0.41		87	124	0.40	
15	115	0.00		88	115	0.017	
16	123	0.37		90	104	-0.48	
17	115	0.013		91	123	0.35	
18	117	0.119		92	106	-0.38	
19	47	-2.9		94	107	-0.35	
20	122	0.32		99	122	0.34	
22	77	-1.6		100	147	1.4	
23	120	0.24		102	109	-0.24	
25	118	0.14		103	92	-0.98	
26	108	-0.28		105	100	-0.64	
28	127	0.55		106	102	-0.53	
30	106	-0.38		107	142	1.2	
31	121	0.28		108	118	0.15	
32	117	0.082		111	109	-0.24	
33	120	0.24		113	120	0.24	
34	120	0.24		115	34	-3.5	
35	139	1.1		117	113	-0.089	
39	110	-0.20		120	106	-0.37	
40	107	-0.35					
41	120	0.24					
42	117	0.10					
43	114	-0.027					
44	79	-1.5					
46	119	0.20					
48	107	-0.34					
50	116	0.061					
51	107	-0.34					
52	97	-0.78					
54	84	-1.3					
55	120	0.24					
57	111	-0.16					
59	117	0.10					
64	116	0.078					
65	125	0.45					
69	94	-0.88					
71	114	-0.039					
72	126	0.49					
74	121	0.28					
75	119	0.20					

Consensus statistics

Consensus median, pg/g	115
Median all values pg/g	115
Consensus mean, pg/g	110
Standard deviation, pg/g	19
Relative standard deviation, %	17
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

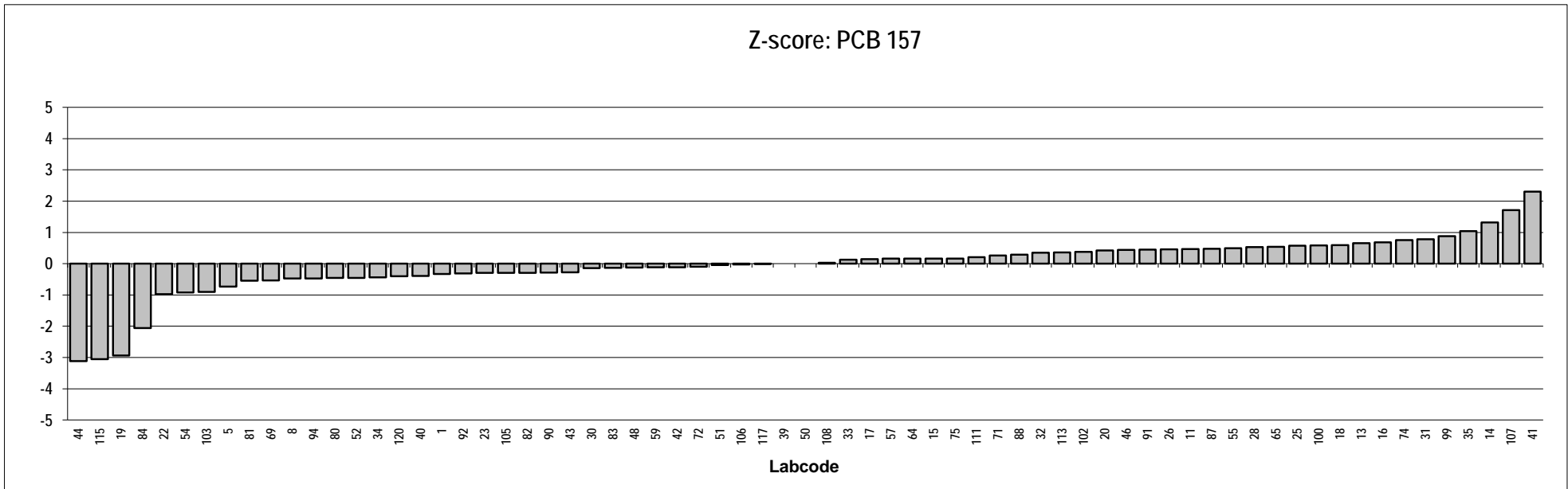
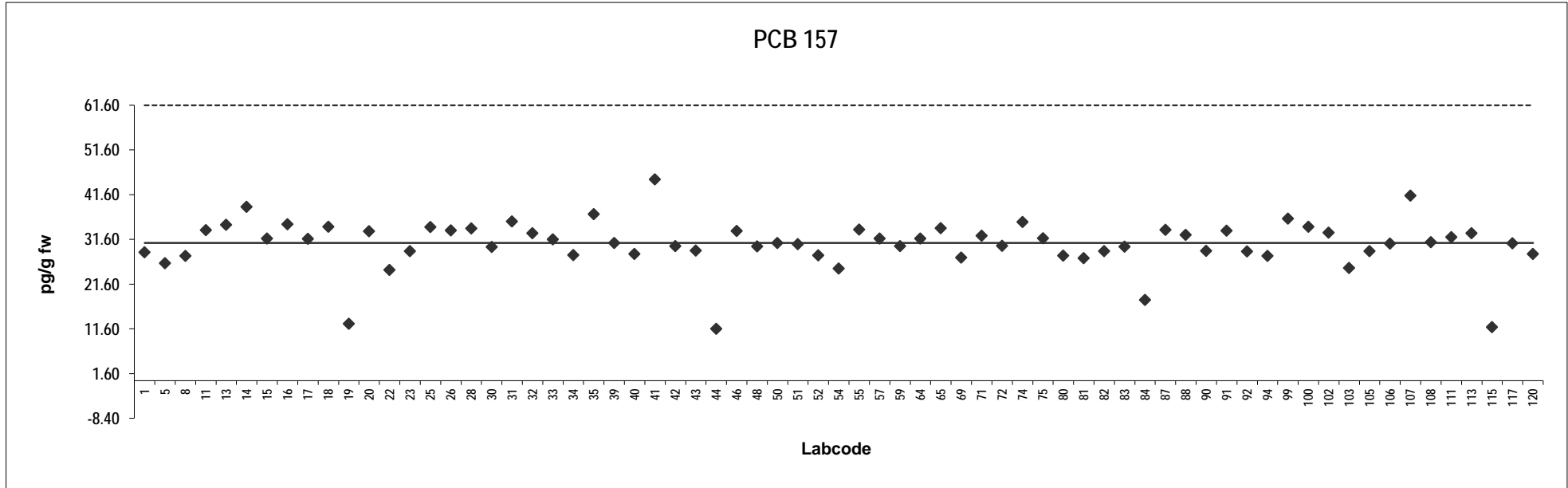


Herring
Congener: PCB 157

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	29	-0.33		80	28	-0.45	
5	26	-0.73		81	27	-0.55	
8	28	-0.47		82	29	-0.29	
11	34	0.47		83	30	-0.13	
13	35	0.66		84	18	-2.1	
14	39	1.3		87	34	0.48	
15	32	0.17		88	33	0.29	
16	35	0.68		90	29	-0.28	
17	32	0.15		91	34	0.45	
18	34	0.59		92	29	-0.31	
19	13	-2.9		94	28	-0.47	
20	33	0.42		99	36	0.88	
22	25	-0.98		100	34	0.58	
23	29	-0.29		102	33	0.37	
25	34	0.57		103	25	-0.90	
26	34	0.45		105	29	-0.29	
28	34	0.53		106	31	-0.022	
30	30	-0.15		107	41	1.7	
31	36	0.78		108	31	0.032	
32	33	0.35		111	32	0.21	
33	32	0.13		113	33	0.36	
34	28	-0.44		115	12	-3.1	
35	37	1.0		117	31	-0.011	
39	31	0.00		120	28	-0.40	
40	28	-0.39					
41	45	2.3					
42	30	-0.11					
43	29	-0.28					
44	12	-3.1					
46	33	0.44					
48	30	-0.12					
50	31	0.00					
51	31	-0.043					
52	28	-0.45					
54	25	-0.93					
55	34	0.49					
57	32	0.16					
59	30	-0.11					
64	32	0.16					
65	34	0.54					
69	28	-0.53					
71	32	0.26					
72	30	-0.10					
74	35	0.76					
75	32	0.17					

Consensus statistics

Consensus median, pg/g	31
Median all values pg/g	31
Consensus mean, pg/g	31
Standard deviation, pg/g	5.6
Relative standard deviation, %	18
No. of values reported	69
No. of values removed	0
No. of reported non-detects	0

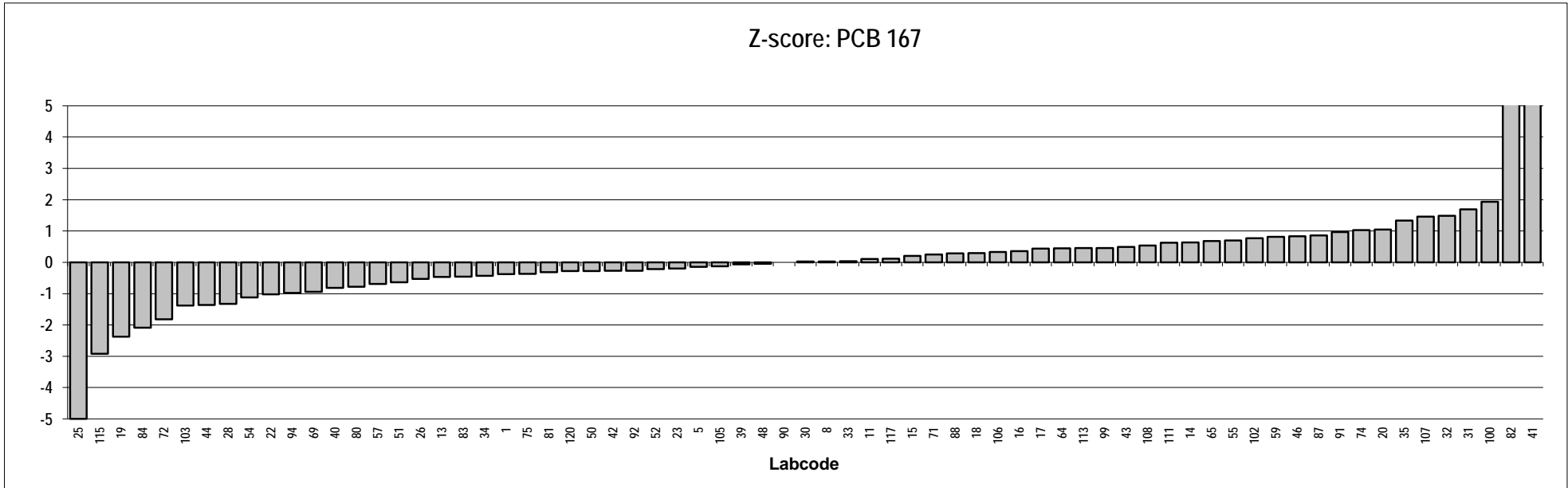
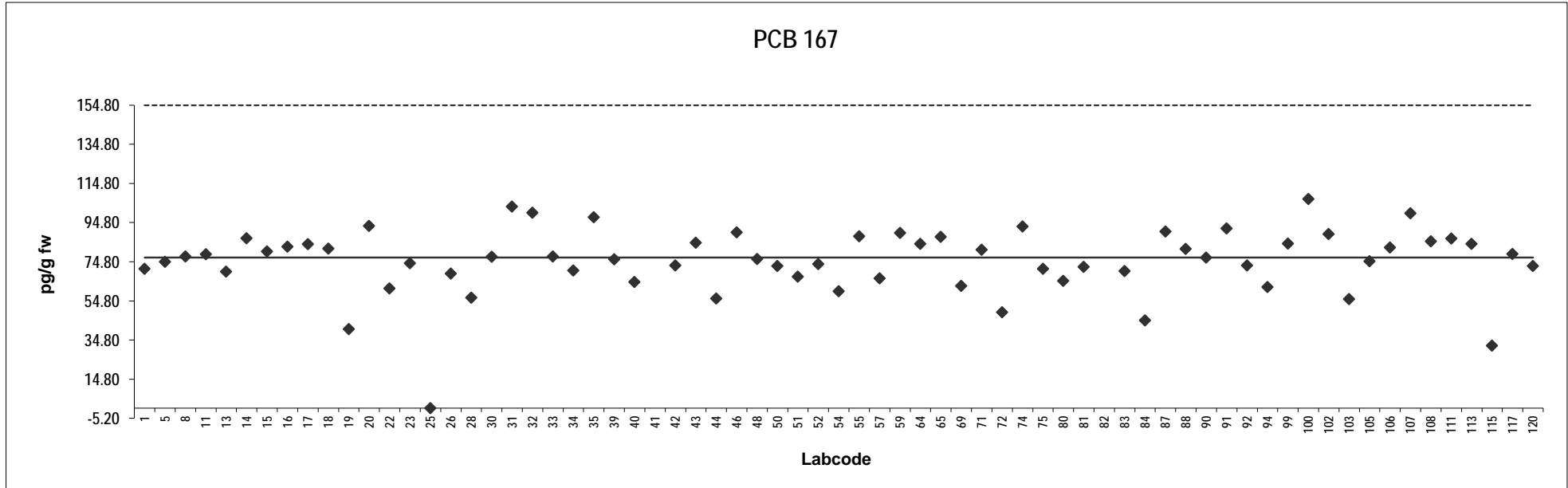


Herring
Congener: PCB 167

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	71	-0.37		80	65	-0.78	
5	75	-0.14		81	72	-0.31	
8	77	0.029		82	330	16	Outlier
11	79	0.11		83	70	-0.45	
13	70	-0.46		84	45	-2.1	
14	87	0.64		87	90	0.86	
15	80	0.20		88	81	0.29	
16	83	0.36		90	77	0.00	
17	84	0.44		91	92	0.96	
18	82	0.30		92	73	-0.27	
19	40	-2.4		94	62	-0.98	
20	93	1.0		99	84	0.46	
22	61	-1.0		100	107	1.9	
23	74	-0.19		102	89	0.77	
25	0.0047	-5.0	ND	103	56	-1.4	
26	69	-0.53		105	75	-0.13	
28	57	-1.3		106	82	0.33	
30	77	0.027		107	100	1.5	
31	103	1.7		108	85	0.53	
32	100	1.5		111	87	0.63	
33	78	0.033		113	84	0.46	
34	70	-0.43		115	32	-2.9	
35	98	1.3		117	79	0.12	
39	76	-0.064		120	73	-0.28	
40	64	-0.81					
41	330	16	Outlier				
42	73	-0.27					
43	85	0.49					
44	56	-1.4					
46	90	0.83					
48	76	-0.049					
50	73	-0.28					
51	67	-0.64					
52	74	-0.22					
54	60	-1.1					
55	88	0.70					
57	66	-0.69					
59	90	0.81					
64	84	0.45					
65	87	0.68					
69	62	-0.95					
71	81	0.25					
72	49	-1.8					
74	93	1.0					
75	71	-0.37					

Consensus statistics

Consensus median, pg/g	77
Median all values pg/g	77
Consensus mean, pg/g	75
Standard deviation, pg/g	17
Relative standard deviation, %	23
No. of values reported	69
No. of values removed	2
No. of reported non-detects	1

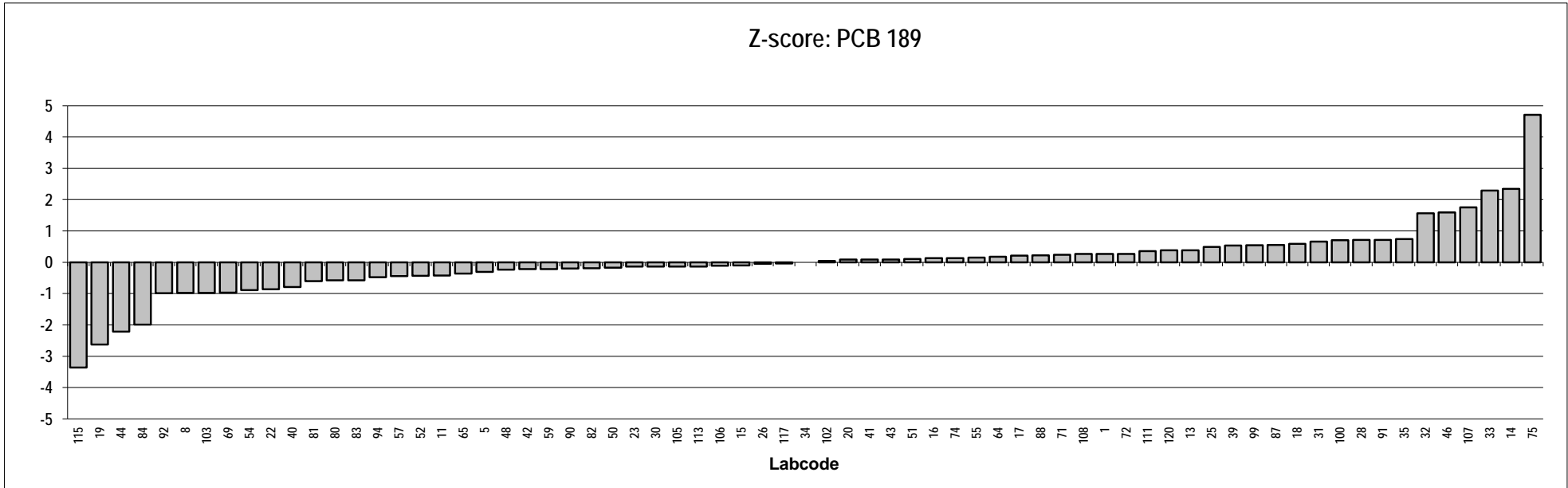
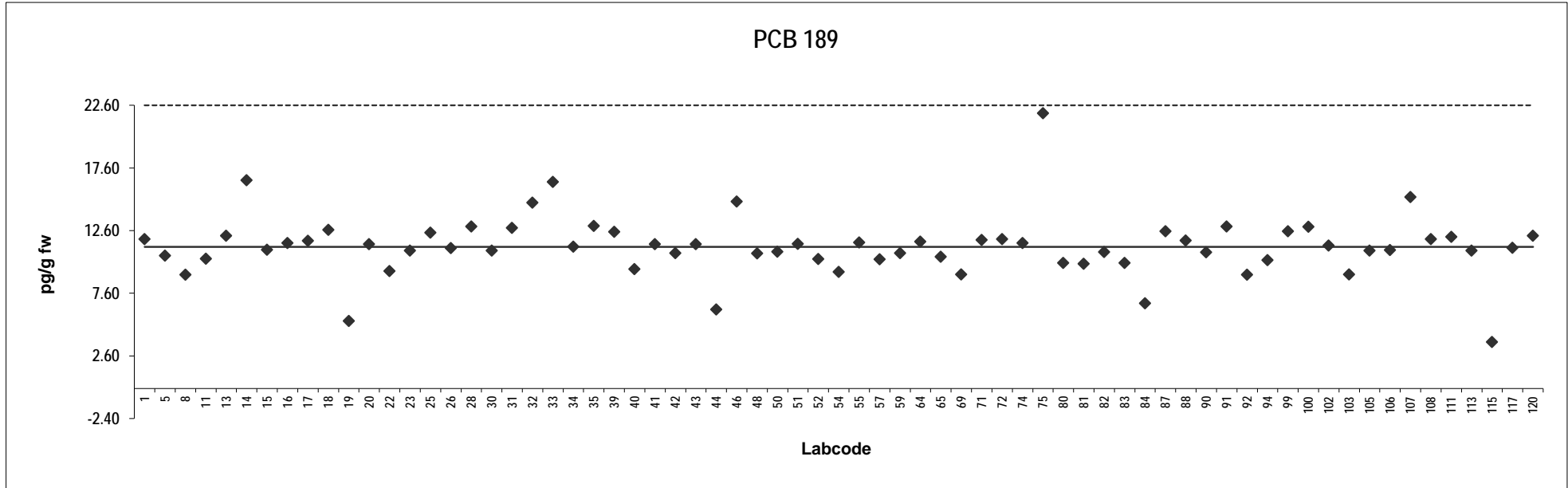


Herring
Congener: PCB 189

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	12	0.27		80	10	-0.58	ND
5	11	-0.31		81	9.9	-0.60	
8	9.1	-0.98		82	11	-0.19	
11	10	-0.42		83	10	-0.58	ND
13	12	0.39		84	6.8	-2.0	
14	17	2.3		87	13	0.55	
15	11	-0.10		88	12	0.22	
16	12	0.13		90	11	-0.20	
17	12	0.21		91	13	0.71	
18	13	0.59		92	9.1	-0.99	
19	5.4	-2.6		94	10	-0.47	
20	12	0.088		99	13	0.54	
22	9.4	-0.86		100	13	0.71	
23	11	-0.13		102	11	0.044	
25	12	0.49		103	9.1	-0.98	
26	11	-0.044		105	11	-0.13	
28	13	0.71		106	11	-0.11	
30	11	-0.13		107	15	1.8	
31	13	0.66		108	12	0.27	
32	15	1.6		111	12	0.35	
33	16	2.3		113	11	-0.13	
34	11	0.00		115	3.7	-3.4	
35	13	0.74		117	11	-0.037	
39	13	0.53		120	12	0.38	
40	9.5	-0.79					
41	12	0.088					
42	11	-0.22					
43	12	0.088					
44	6.3	-2.2					
46	15	1.6					
48	11	-0.24					
50	11	-0.18					
51	12	0.10					
52	10	-0.43					
54	9.3	-0.89					
55	12	0.15					
57	10	-0.44					
59	11	-0.22					
64	12	0.18					
65	10	-0.36					
69	9.1	-0.97					
71	12	0.24					
72	12	0.27					
74	12	0.13					
75	22	4.7					

Consensus statistics

Consensus median, pg/g	11
Median all values pg/g	11
Consensus mean, pg/g	11
Standard deviation, pg/g	2.5
Relative standard deviation, %	22
No. of values reported	69
No. of values removed	0
No. of reported non-detects	2

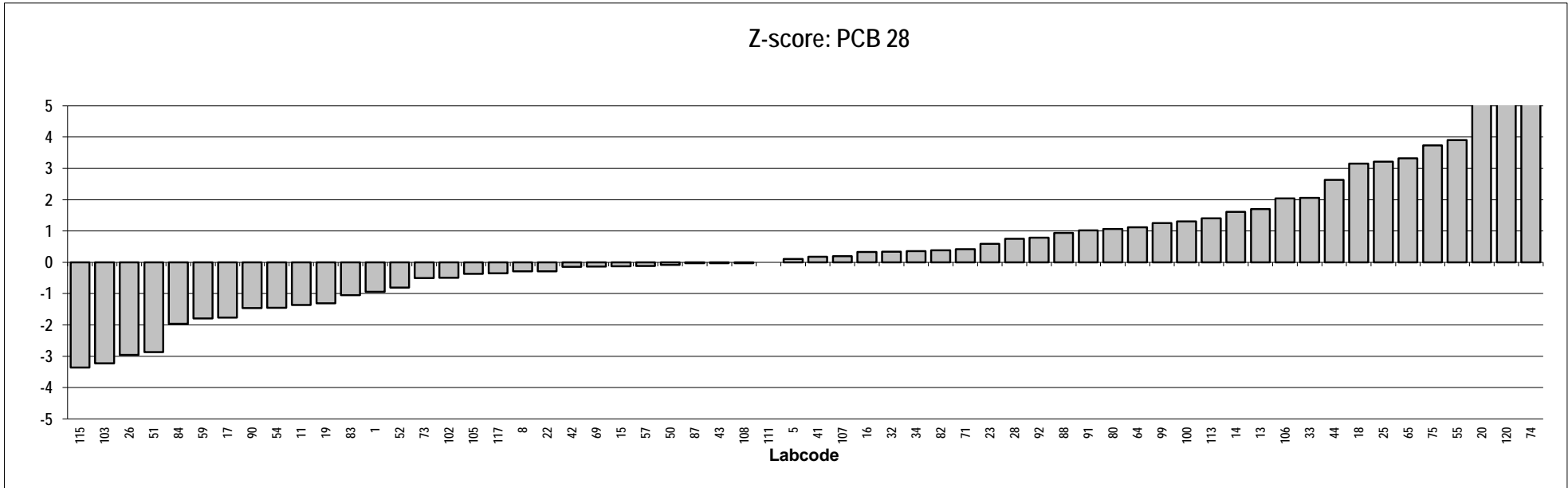
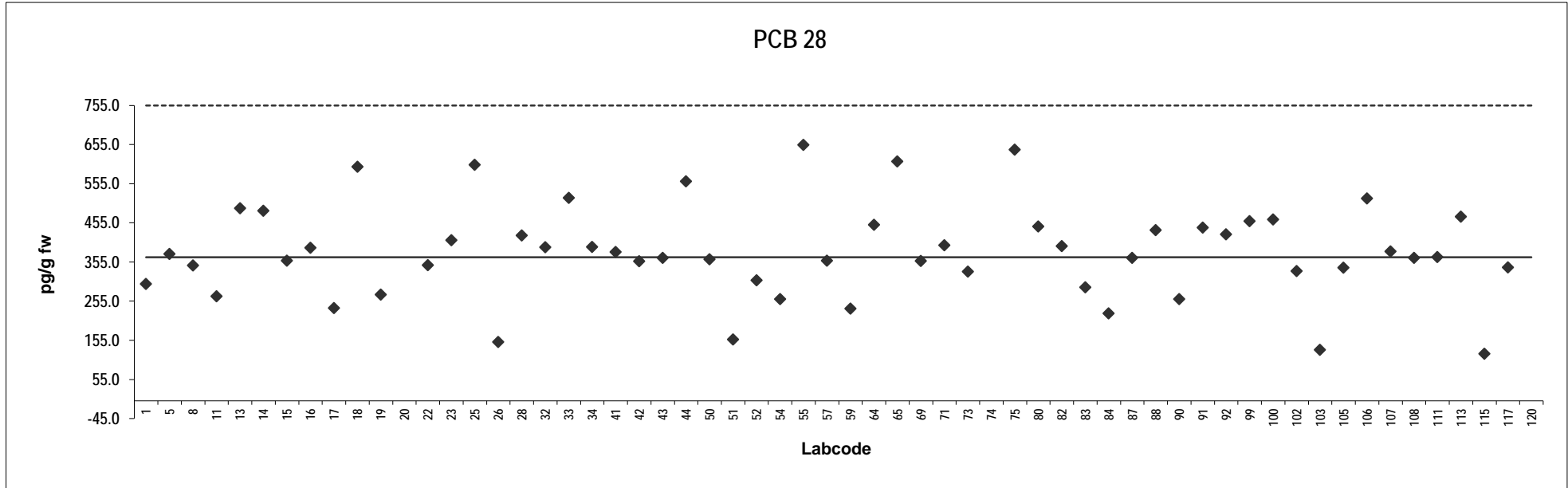


Herring
Congener: PCB 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	298	-0.94		91	442	1.0	
5	375	0.11		92	425	0.79	
8	346	-0.29		99	459	1.3	
11	267	-1.4		100	463	1.3	
13	492	1.7		102	331	-0.49	
14	485	1.6		103	130	-3.2	
15	358	-0.12		105	340	-0.37	
16	391	0.33		106	517	2.0	
17	237	-1.8		107	381	0.20	
18	598	3.1		108	365	-0.027	
19	271	-1.3		111	367	0.00	
20	851	6.6	Outlier	113	470	1.4	
22	346	-0.28		115	120	-3.4	
23	410	0.59		117	341	-0.36	
25	603	3.2		120	898	7.2	Outlier
26	150	-3.0					
28	422	0.75					
32	392	0.34					
33	518	2.1					
34	393	0.35					
41	380	0.18					
42	356	-0.15					
43	365	-0.027					
44	560	2.6					
50	361	-0.082					
51	157	-2.9					
52	308	-0.81					
54	260	-1.5					
55	654	3.9					
57	358	-0.12					
59	235	-1.8					
64	449	1.1					
65	611	3.3					
69	357	-0.13					
71	398	0.42					
73	330	-0.50					
74	922	7.6	Outlier				
75	641	3.7					
80	445	1.1					
82	395	0.38					
83	290	-1.0					
84	223	-2.0					
87	365	-0.029					
88	436	0.94					
90	260	-1.5					

Consensus statistics

Consensus median, pg/g	367
Median all values pg/g	378
Consensus mean, pg/g	381
Standard deviation, pg/g	121
Relative standard deviation, %	32
No. of values reported	60
No. of values removed	3
No. of reported non-detects	0

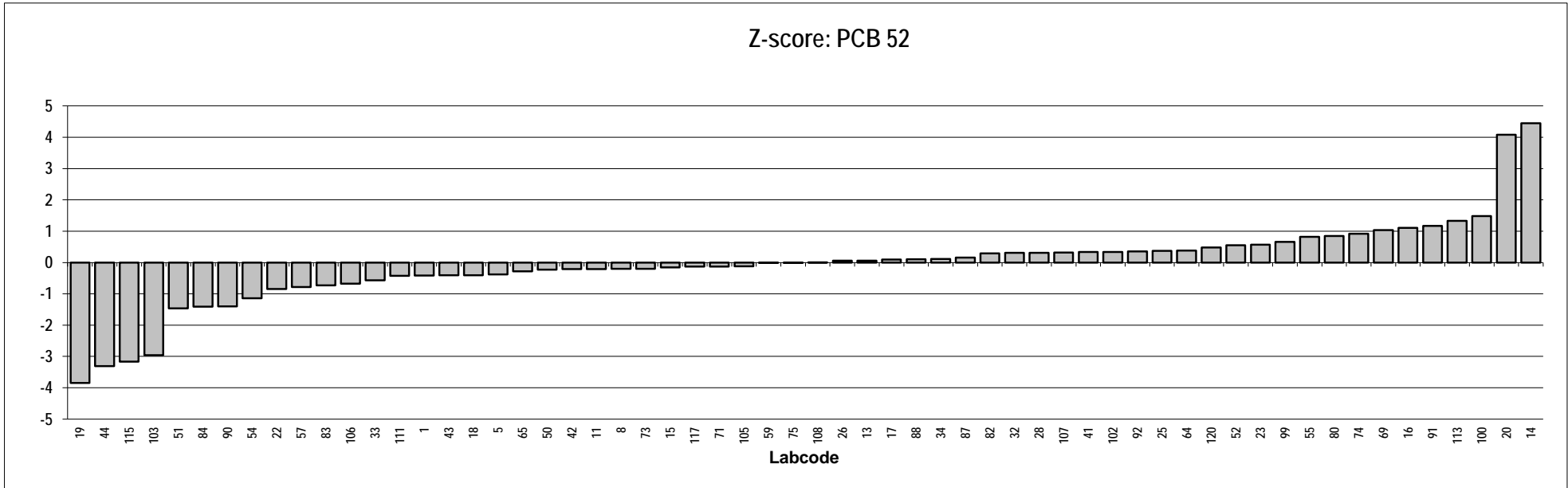
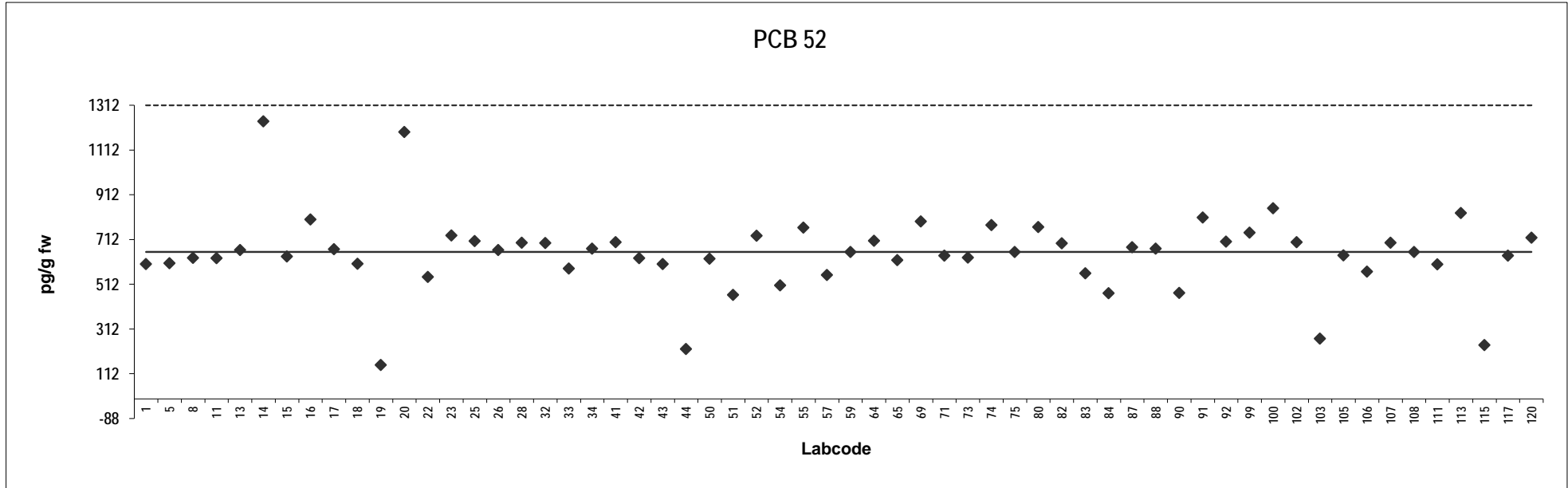


Herring
Congener: PCB 52

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	601	-0.42		91	809	1.2	
5	606	-0.38		92	702	0.35	
8	629	-0.20		99	742	0.66	
11	628	-0.21		100	851	1.5	
13	664	0.062		102	700	0.34	
14	1240	4.5		103	268	-3.0	
15	636	-0.15		105	640	-0.12	
16	801	1.1		106	567	-0.68	
17	668	0.091		107	697	0.32	
18	603	-0.40		108	656	0.00070	
19	151	-3.8		111	600	-0.43	
20	1191	4.1		113	830	1.3	
22	544	-0.85		115	240	-3.2	
23	730	0.56		117	639	-0.13	
25	705	0.37		120	719	0.48	
26	664	0.060					
28	697	0.31					
32	696	0.31					
33	581	-0.57					
34	671	0.12					
41	700	0.34					
42	628	-0.21					
43	602	-0.41					
44	222	-3.3					
50	626	-0.23					
51	464	-1.5					
52	728	0.55					
54	506	-1.1					
55	764	0.82					
57	553	-0.78					
59	655	-0.0069					
64	706	0.38					
65	619	-0.28					
69	792	1.0					
71	639	-0.13					
73	630	-0.20					
74	776	0.92					
75	656	-0.00070					
80	767	0.85					
82	695	0.30					
83	560	-0.73					
84	471	-1.4					
87	677	0.16					
88	670	0.11					
90	472	-1.4					

Consensus statistics

Consensus median, pg/g	656
Median all values pg/g	656
Consensus mean, pg/g	649
Standard deviation, pg/g	174
Relative standard deviation, %	27
No. of values reported	60
No. of values removed	0
No. of reported non-detects	0

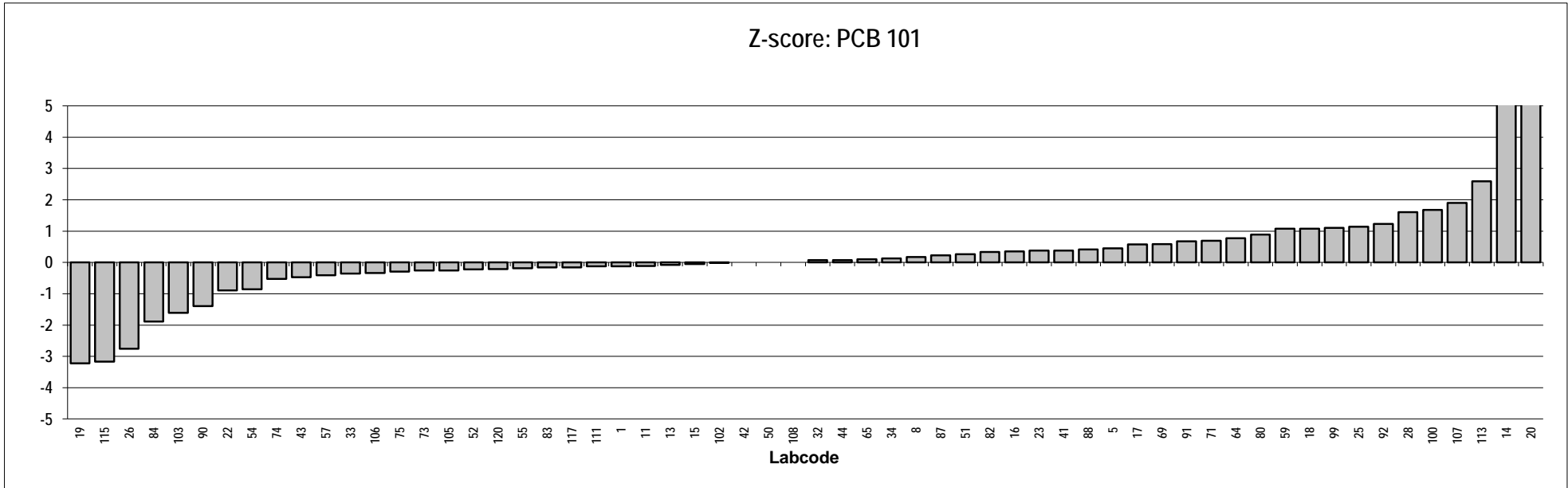
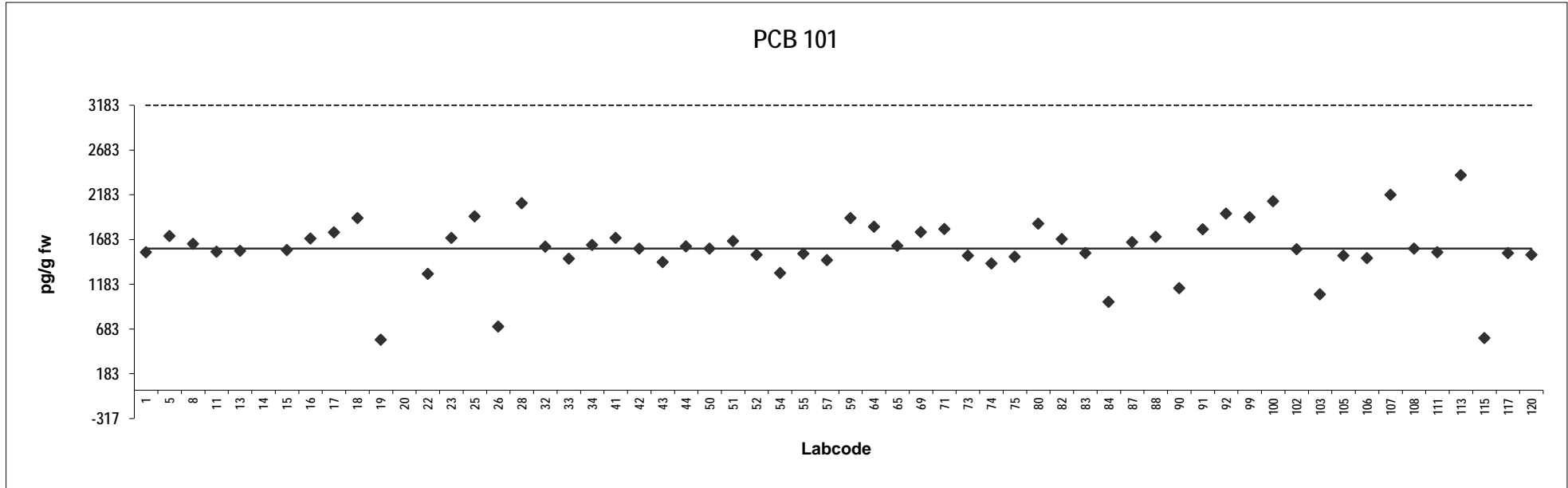


Herring
Congener: PCB 101

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	1540	-0.13		91	1795	0.68	
5	1722	0.45		92	1970	1.2	
8	1634	0.17		99	1930	1.1	
11	1545	-0.11		100	2110	1.7	
13	1554	-0.082		102	1575	-0.016	
14	3380	5.7	Outlier	103	1070	-1.6	
15	1563	-0.053		105	1500	-0.25	
16	1692	0.35		106	1475	-0.33	
17	1762	0.58		107	2181	1.9	
18	1921	1.1		108	1580	0.00	
19	562	-3.2		111	1540	-0.13	
20	3481	6.0	Outlier	113	2400	2.6	
22	1298	-0.89		115	580	-3.2	
23	1700	0.38		117	1530	-0.16	
25	1941	1.1		120	1512	-0.22	
26	708	-2.8					
28	2087	1.6					
32	1603	0.073					
33	1468	-0.35					
34	1620	0.13					
41	1700	0.38					
42	1580	0.00					
43	1430	-0.47					
44	1605	0.078					
50	1580	0.00					
51	1663	0.26					
52	1510	-0.22					
54	1308	-0.86					
55	1522	-0.18					
57	1450	-0.41					
59	1920	1.1					
64	1823	0.77					
65	1612	0.10					
69	1765	0.59					
71	1800	0.70					
73	1500	-0.25					
74	1414	-0.53					
75	1488	-0.29					
80	1860	0.89					
82	1686	0.34					
83	1530	-0.16					
84	985	-1.9					
87	1651	0.22					
88	1710	0.41					
90	1140	-1.4					

Consensus statistics

Consensus median, pg/g	1580
Median all values pg/g	1592
Consensus mean, pg/g	1584
Standard deviation, pg/g	338
Relative standard deviation, %	21
No. of values reported	60
No. of values removed	2
No. of reported non-detects	0

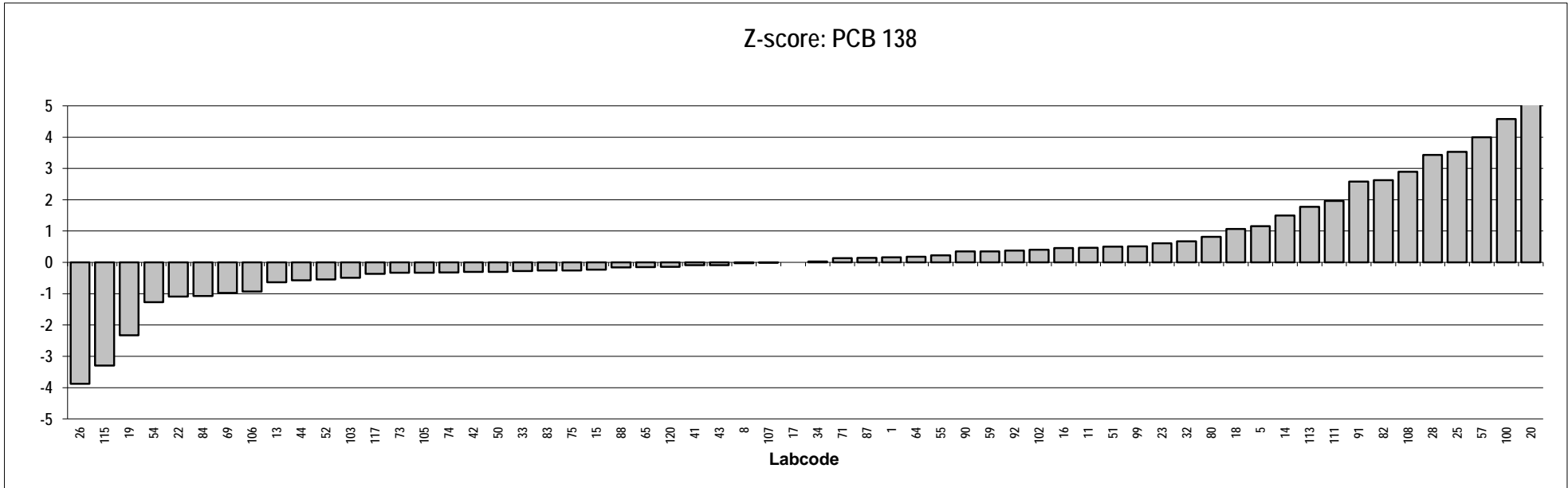
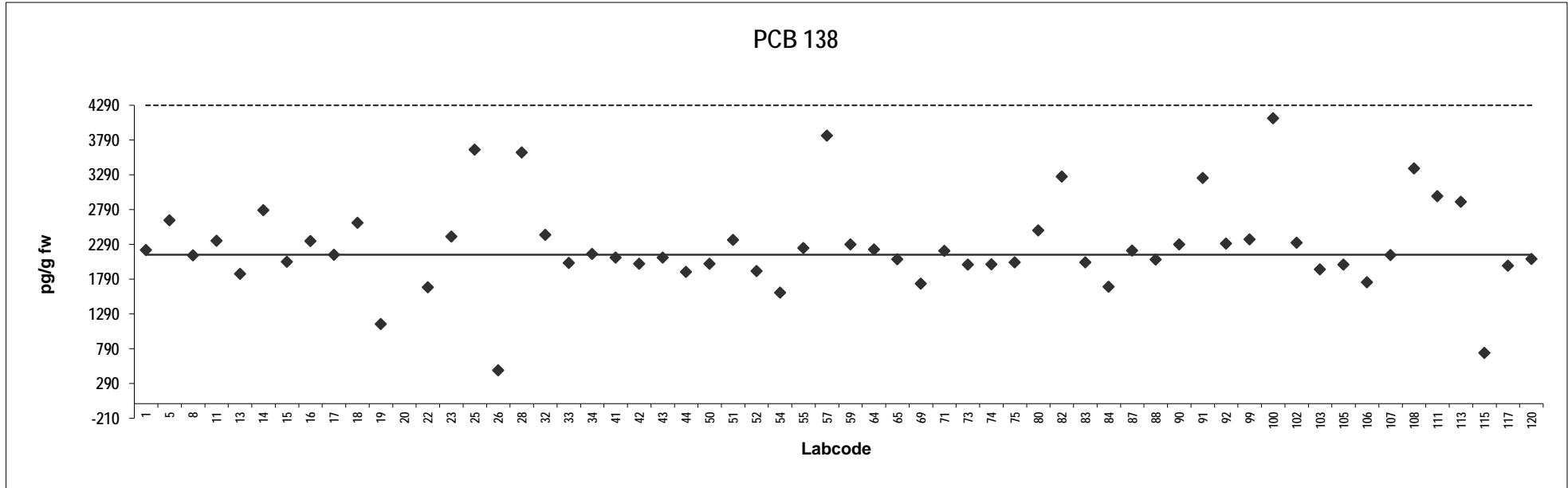


Herring
Congener: PCB 138

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	2209	0.16		91	3243	2.6	
5	2634	1.2		92	2300	0.37	
8	2130	-0.023		99	2360	0.51	
11	2340	0.47		100	4100	4.6	
13	1867	-0.64		102	2312	0.40	
14	2780	1.5		103	1929	-0.49	
15	2040	-0.23		105	2000	-0.33	
16	2337	0.46		106	1743	-0.93	
17	2140	0.00		107	2135	-0.011	
18	2598	1.1		108	3380	2.9	
19	1143	-2.3		111	2980	2.0	
20	5243	7.3	Outlier	113	2900	1.8	
22	1674	-1.1		115	730	-3.3	
23	2400	0.61		117	1984	-0.36	
25	3652	3.5		120	2080	-0.14	
26	480	-3.9					
28	3609	3.4					
32	2426	0.67					
33	2021	-0.28					
34	2150	0.024					
41	2100	-0.093					
42	2010	-0.30					
43	2100	-0.093					
44	1893	-0.58					
50	2010	-0.30					
51	2354	0.50					
52	1907	-0.54					
54	1594	-1.3					
55	2236	0.23					
57	3850	4.0					
59	2290	0.35					
64	2216	0.18					
65	2074	-0.15					
69	1724	-0.97					
71	2197	0.13					
73	2000	-0.33					
74	2003	-0.32					
75	2031	-0.25					
80	2490	0.82					
82	3264	2.6					
83	2030	-0.26					
84	1680	-1.1					
87	2200	0.14					
88	2070	-0.16					
90	2290	0.35					

Consensus statistics

Consensus median, pg/g	2140
Median all values pg/g	2145
Consensus mean, pg/g	2261
Standard deviation, pg/g	647
Relative standard deviation, %	29
No. of values reported	60
No. of values removed	1
No. of reported non-detects	0

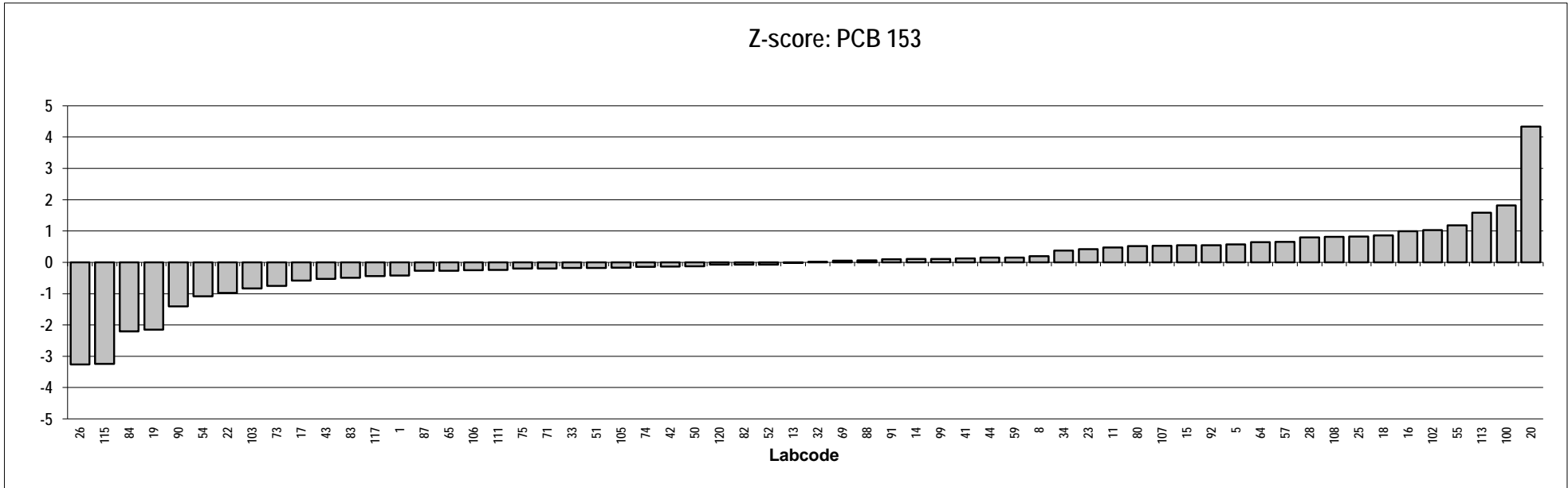
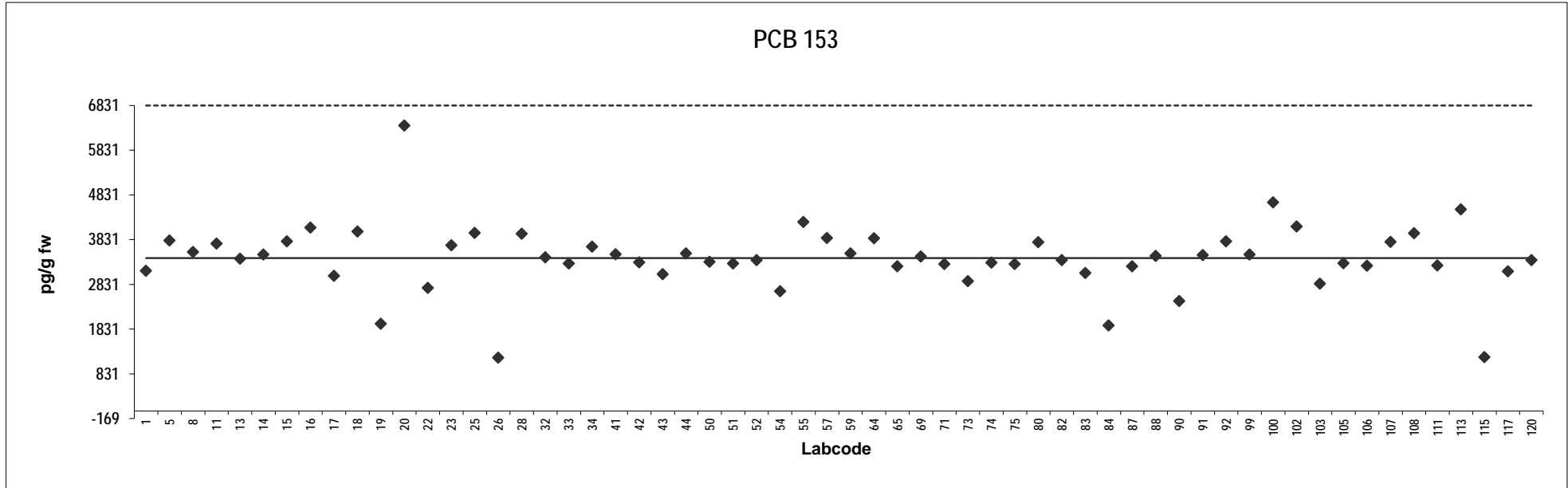


Herring
Congener: PCB 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	3130	-0.42		91	3480	0.095	
5	3809	0.58		92	3790	0.55	
8	3549	0.20		99	3490	0.11	
11	3738	0.47		100	4660	1.8	
13	3401	-0.021		102	4121	1.0	
14	3490	0.11		103	2843	-0.84	
15	3788	0.55		105	3300	-0.17	
16	4097	1.0		106	3245	-0.25	
17	3018	-0.58		107	3778	0.53	
18	4005	0.86		108	3970	0.81	
19	1945	-2.2		111	3250	-0.24	
20	6377	4.3		113	4500	1.6	
22	2746	-0.98		115	1200	-3.2	
23	3700	0.42		117	3118	-0.44	
25	3977	0.82		120	3366	-0.072	
26	1189	-3.3					
28	3957	0.79					
32	3430	0.021					
33	3292	-0.18					
34	3670	0.37					
41	3500	0.12					
42	3320	-0.14					
43	3055	-0.53					
44	3519	0.15					
50	3330	-0.13					
51	3295	-0.18					
52	3368	-0.070					
54	2674	-1.1					
55	4221	1.2					
57	3860	0.65					
59	3520	0.15					
64	3858	0.65					
65	3230	-0.27					
69	3449	0.049					
71	3282	-0.20					
73	2900	-0.75					
74	3314	-0.15					
75	3280	-0.20					
80	3770	0.52					
82	3366	-0.072					
83	3080	-0.49					
84	1910	-2.2					
87	3229	-0.27					
88	3460	0.065					
90	2452	-1.4					

Consensus statistics

Consensus median, pg/g	3415
Median all values pg/g	3415
Consensus mean, pg/g	3411
Standard deviation, pg/g	752
Relative standard deviation, %	22
No. of values reported	60
No. of values removed	0
No. of reported non-detects	0

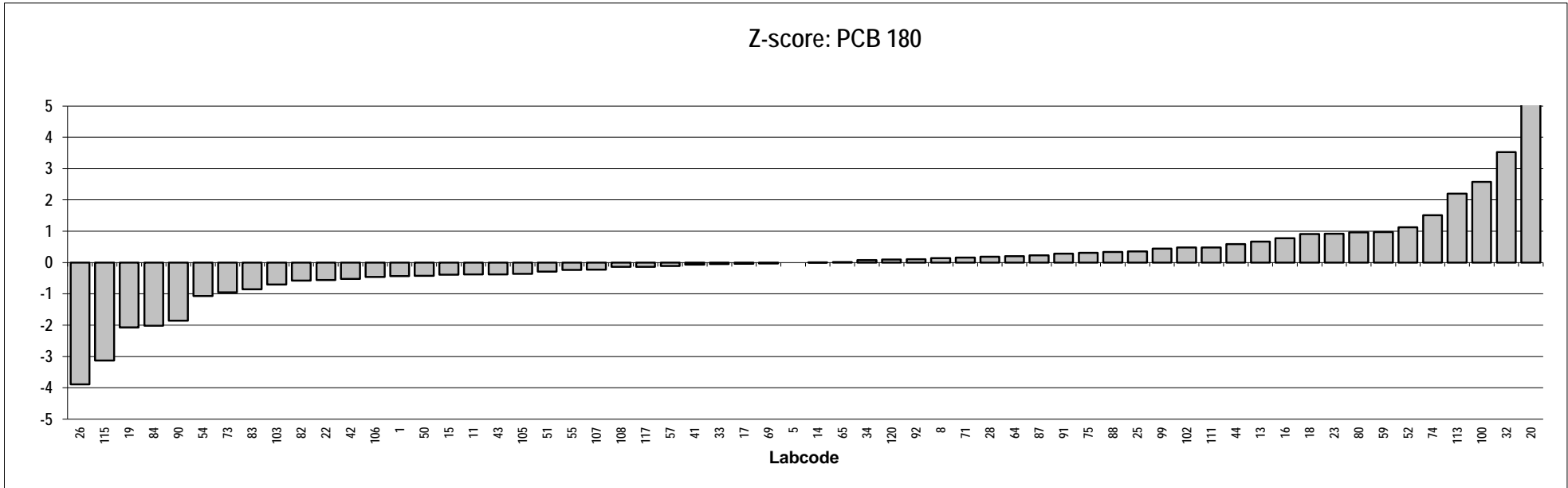
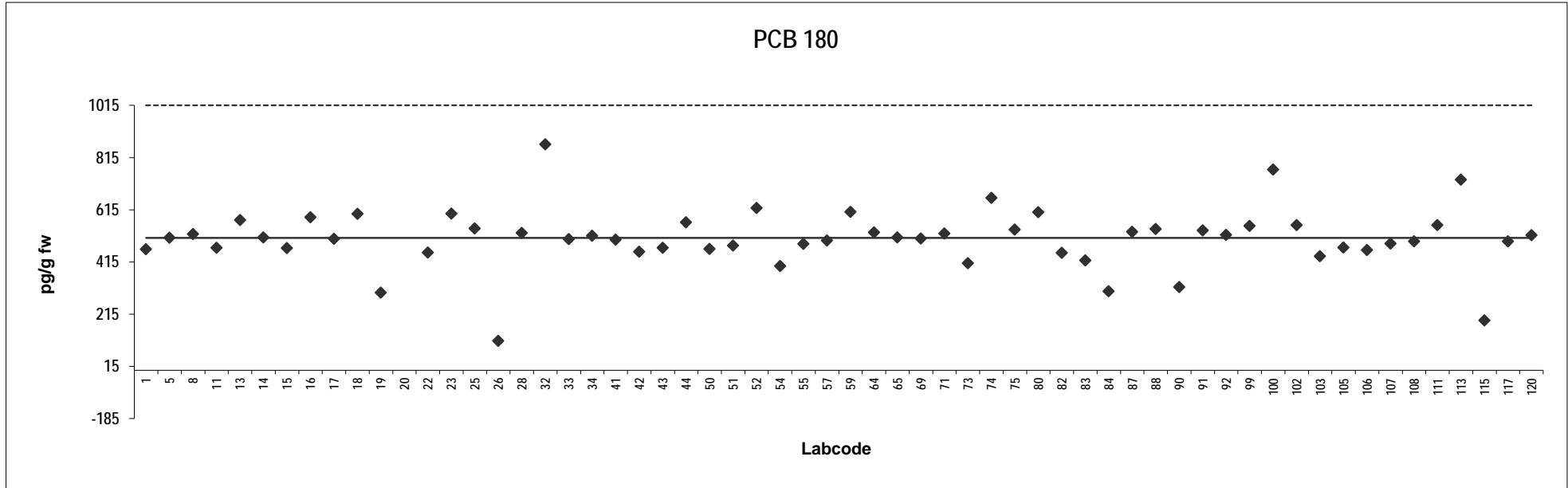


Herring
Congener: PCB 180

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
1	463	-0.44		91	536	0.28	
5	507	0.00		92	518	0.11	
8	521	0.14		99	552	0.44	
11	469	-0.38		100	768	2.6	
13	575	0.67		102	556	0.48	
14	508	0.0099		103	436	-0.70	
15	468	-0.39		105	470	-0.36	
16	586	0.78		106	460	-0.46	
17	503	-0.041		107	484	-0.22	
18	599	0.91		108	493	-0.14	
19	296	-2.1		111	556	0.48	
20	1197	6.8	Outlier	113	730	2.2	
22	450	-0.56		115	190	-3.1	
23	600	0.92		117	493	-0.14	
25	543	0.35		120	517	0.099	
26	112	-3.9					
28	526	0.19					
32	865	3.5					
33	502	-0.049					
34	515	0.079					
41	500	-0.069					
42	454	-0.52					
43	469	-0.37					
44	567	0.59					
50	464	-0.42					
51	477	-0.29					
52	621	1.1					
54	399	-1.1					
55	483	-0.24					
57	496	-0.11					
59	606	0.98					
64	528	0.20					
65	509	0.016					
69	504	-0.029					
71	523	0.16					
73	410	-0.96					
74	660	1.5					
75	538	0.31					
80	605	0.97					
82	449	-0.57					
83	420	-0.86					
84	302	-2.0					
87	530	0.23					
88	541	0.34					
90	319	-1.9					

Consensus statistics

Consensus median, pg/g	507
Median all values pg/g	508
Consensus mean, pg/g	504
Standard deviation, pg/g	116
Relative standard deviation, %	23
No. of values reported	60
No. of values removed	1
No. of reported non-detects	0

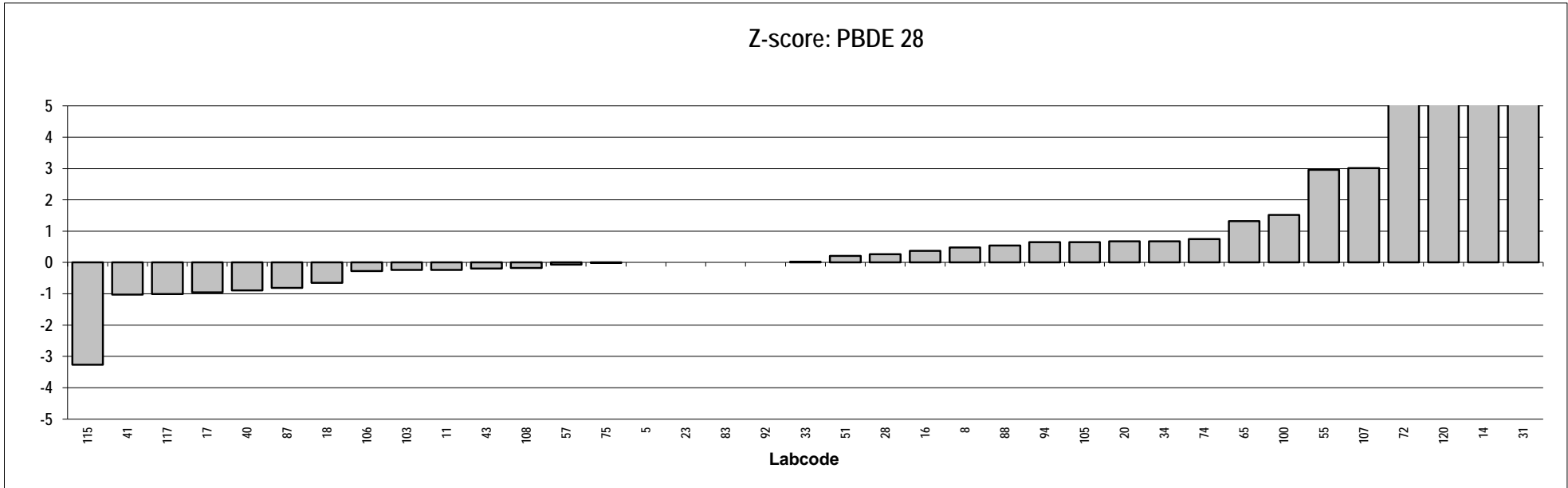
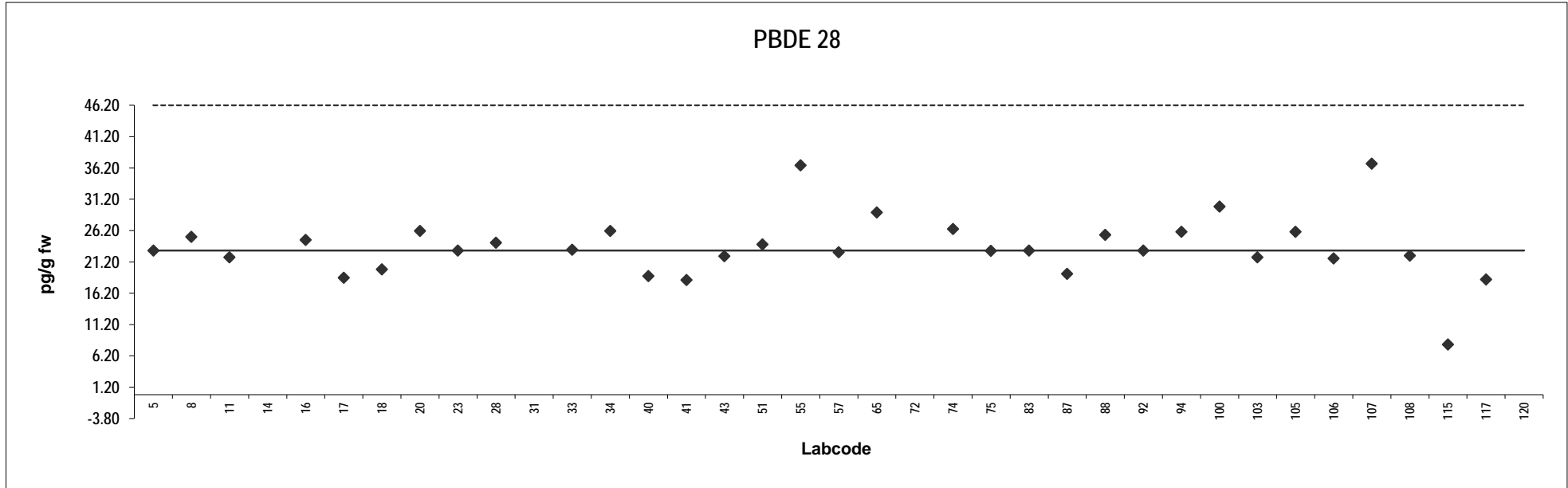


Herring
Congener: PBDE 28

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	23	0.00					
8	25	0.48					
11	22	-0.24					
14	80	12	Outlier,ND				
16	25	0.37					
17	19	-0.95					
18	20	-0.65					
20	26	0.67					
23	23	0.00					
28	24	0.27					
31	187	36	Outlier				
33	23	0.022					
34	26	0.67					
40	19	-0.89					
41	18	-1.0					
43	22	-0.20					
51	24	0.21					
55	37	3.0					
57	23	-0.065					
65	29	1.3					
72	51	6.0	Outlier				
74	26	0.75					
75	23	-0.016					
83	23	0.00					
87	19	-0.81					
88	26	0.54					
92	23	0.00					
94	26	0.65					
100	30	1.5					
103	22	-0.24					
105	26	0.65					
106	22	-0.27					
107	37	3.0					
108	22	-0.17					
115	8.0	-3.3					
117	18	-1.0					
120	64	9.0	Outlier				

Consensus statistics

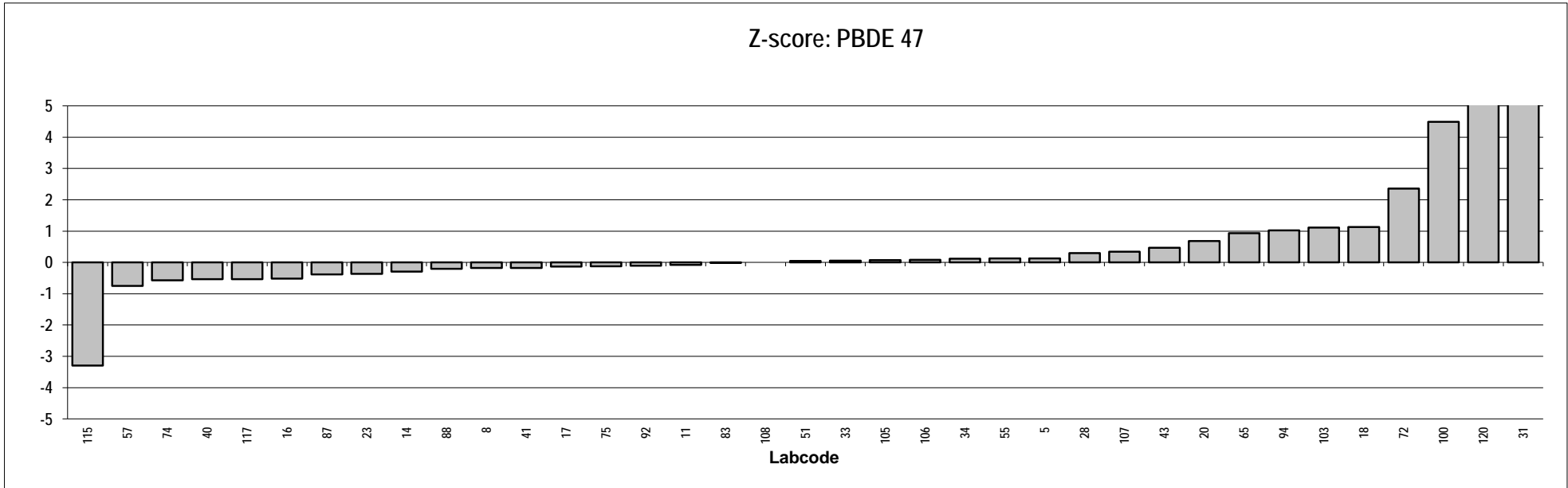
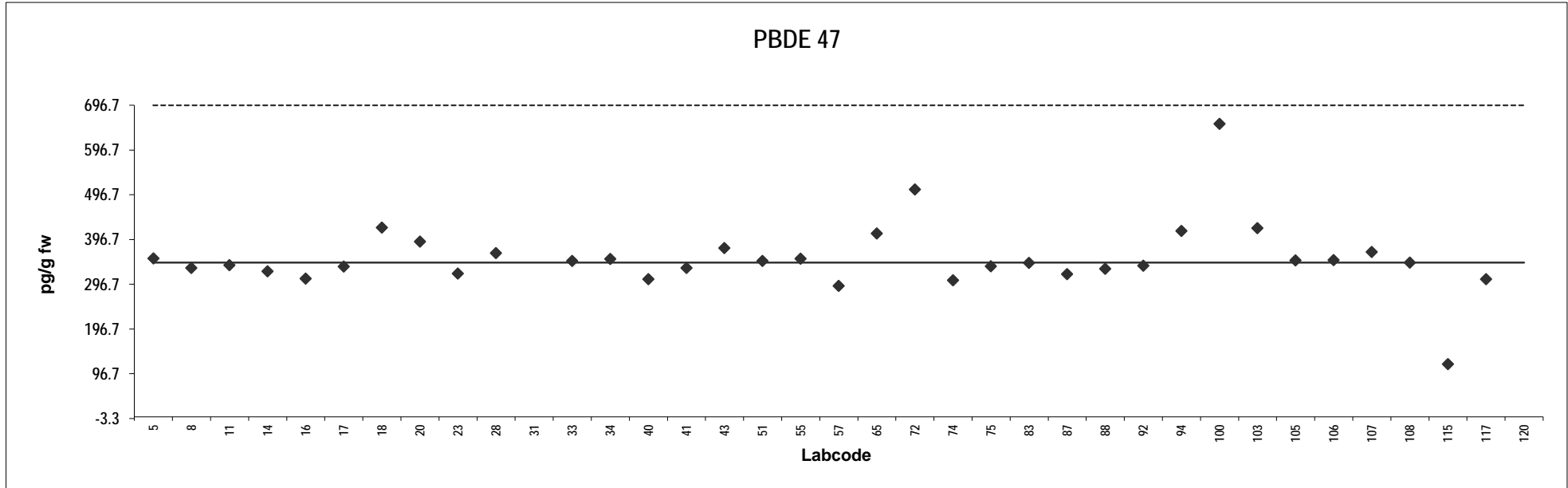
Consensus median, pg/g	23
Median all values pg/g	23
Consensus mean, pg/g	24
Standard deviation, pg/g	5.2
Relative standard deviation, %	22
No. of values reported	37
No. of values removed	4
No. of reported non-detects	1



Herring
Congener: PBDE 47

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	354	0.13					
8	333	-0.18					
11	339	-0.082					
14	325	-0.29					
16	309	-0.52					
17	336	-0.13					
18	423	1.1					
20	392	0.68					
23	320	-0.36					
28	366	0.30					
31	778	6.3	Outlier				
33	349	0.055					
34	353	0.12					
40	308	-0.54					
41	333	-0.17					
43	377	0.46					
51	348	0.048					
55	354	0.12					
57	293	-0.75					
65	410	0.94					
72	508	2.4					
74	306	-0.57					
75	337	-0.12					
83	344	-0.014					
87	319	-0.38					
88	331	-0.20					
92	338	-0.10					
94	416	1.0					
100	655	4.5					
103	422	1.1					
105	350	0.072					
106	351	0.080					
107	369	0.34					
108	345	0.00					
115	118	-3.3					
117	308	-0.54					
120	753	5.9	Outlier				

Consensus statistics	
Consensus median, pg/g	345
Median all values pg/g	348
Consensus mean, pg/g	355
Standard deviation, pg/g	78
Relative standard deviation, %	22
No. of values reported	37
No. of values removed	2
No. of reported non-detects	0

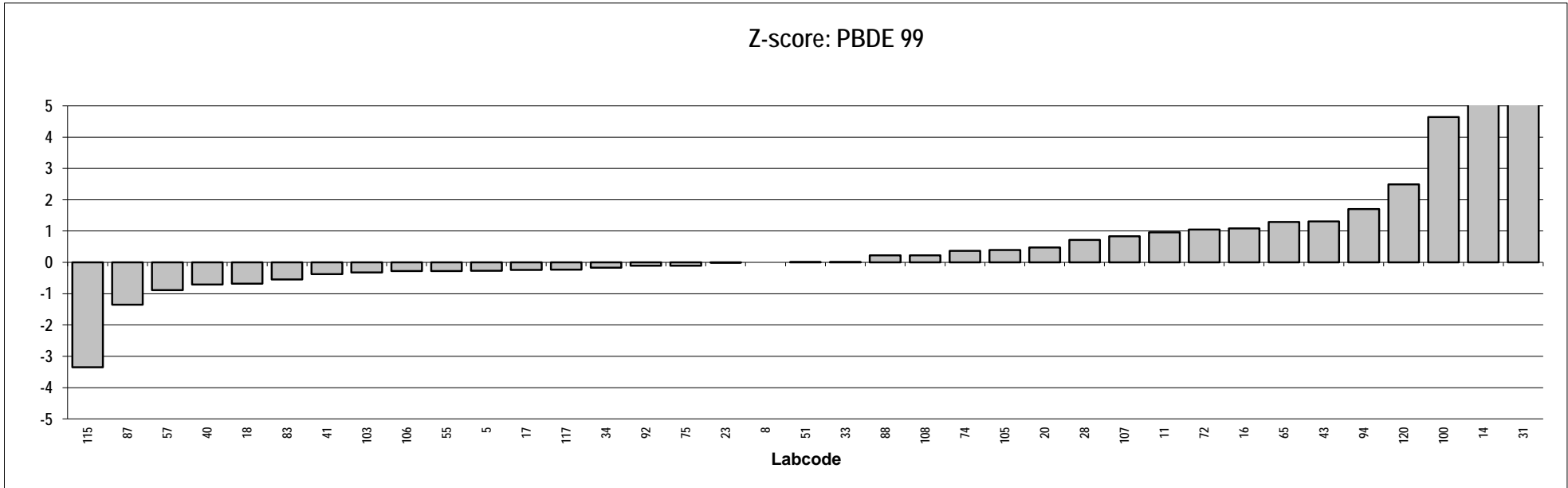
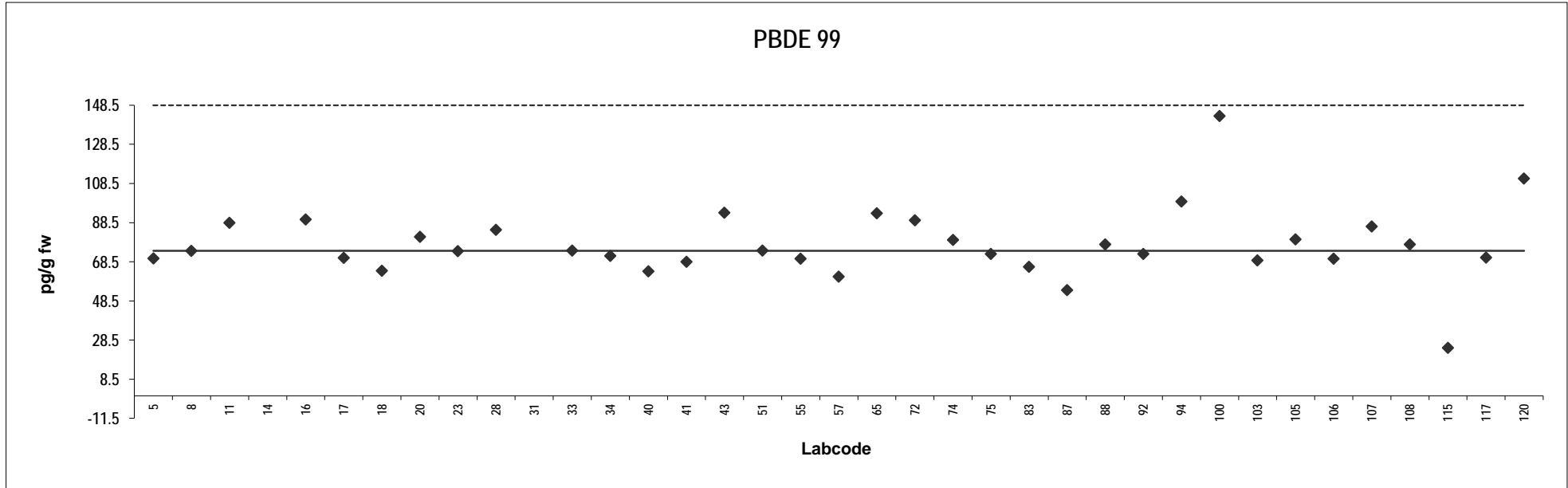


Herring
Congener: PBDE 99

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	70	-0.27					
8	74	0.00					
11	88	0.96					
14	155	5.5	Outlier				
16	90	1.1					
17	71	-0.24					
18	64	-0.68					
20	81	0.48					
23	74	-0.0094					
28	85	0.72					
31	188	7.7	Outlier				
33	74	0.012					
34	72	-0.17					
40	64	-0.71					
41	69	-0.38					
43	94	1.3					
51	74	0.0088					
55	70	-0.27					
57	61	-0.89					
65	93	1.3					
72	90	1.0					
74	80	0.37					
75	73	-0.11					
83	66	-0.55					
87	54	-1.4					
88	77	0.22					
92	73	-0.11					
94	99	1.7					
100	143	4.6					
103	69	-0.33					
105	80	0.40					
106	70	-0.28					
107	87	0.83					
108	77	0.22					
115	25	-3.3					
117	71	-0.23					
120	111	2.5					

Consensus statistics

Consensus median, pg/g	74
Median all values pg/g	74
Consensus mean, pg/g	77
Standard deviation, pg/g	19
Relative standard deviation, %	24
No. of values reported	37
No. of values removed	2
No. of reported non-detects	0

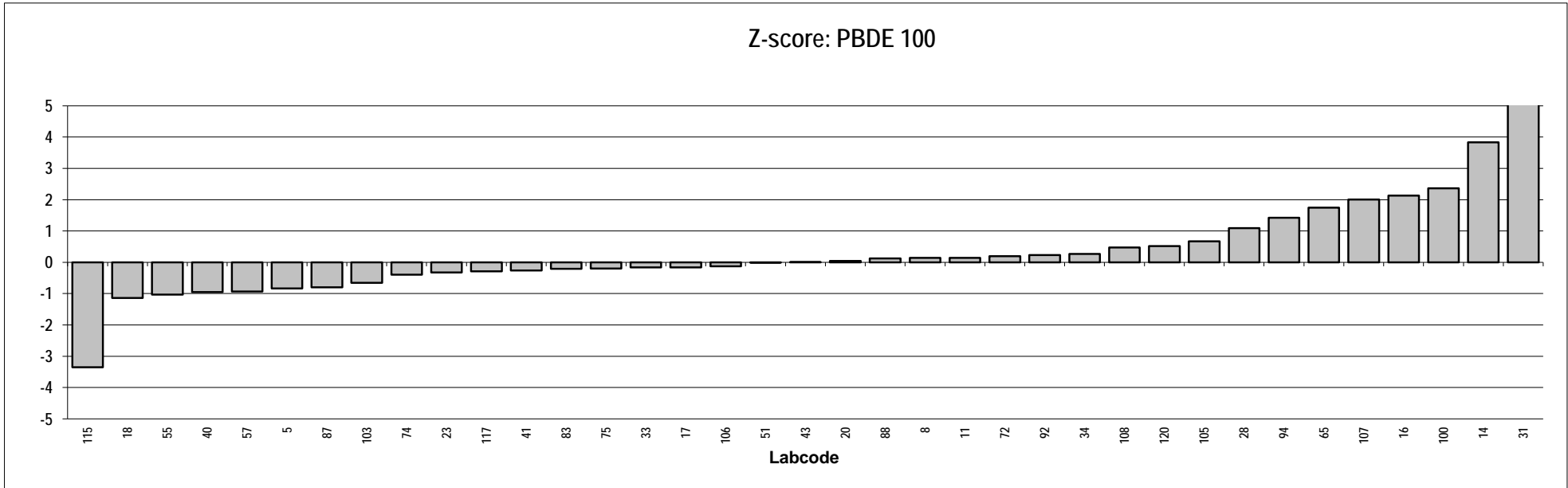
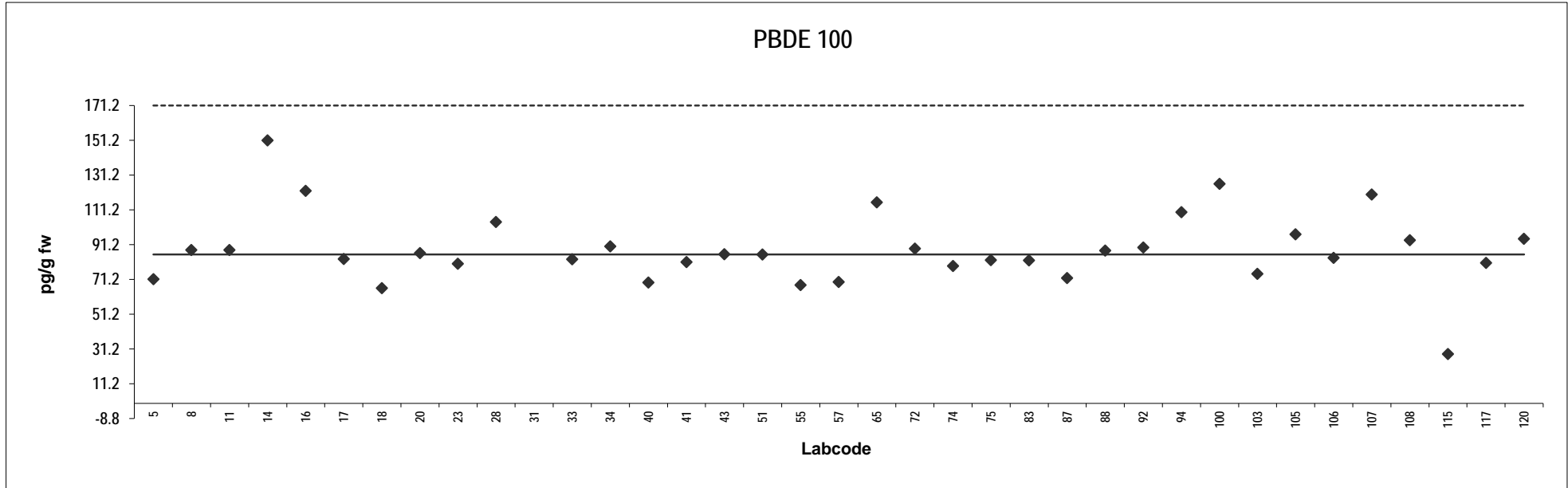


Herring
Congener: PBDE 100

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	71	-0.84					
8	88	0.14					
11	88	0.14					
14	151	3.8					
16	122	2.1					
17	83	-0.16					
18	66	-1.1					
20	86	0.040					
23	80	-0.32					
28	104	1.1					
31	212	7.4	Outlier				
33	83	-0.16					
34	90	0.27					
40	69	-0.95					
41	81	-0.26					
43	86	0.0053					
51	85	-0.0053					
55	68	-1.0					
57	70	-0.94					
65	115	1.7					
72	89	0.19					
74	79	-0.40					
75	82	-0.20					
83	82	-0.21					
87	72	-0.80					
88	88	0.13					
92	89	0.23					
94	110	1.4					
100	126	2.4					
103	74	-0.66					
105	97	0.67					
106	83	-0.12					
107	120	2.0					
108	94	0.47					
115	28	-3.4					
117	81	-0.29					
120	94	0.52					

Consensus statistics

Consensus median, pg/g	86
Median all values pg/g	86
Consensus mean, pg/g	88
Standard deviation, pg/g	21
Relative standard deviation, %	24
No. of values reported	37
No. of values removed	1
No. of reported non-detects	0

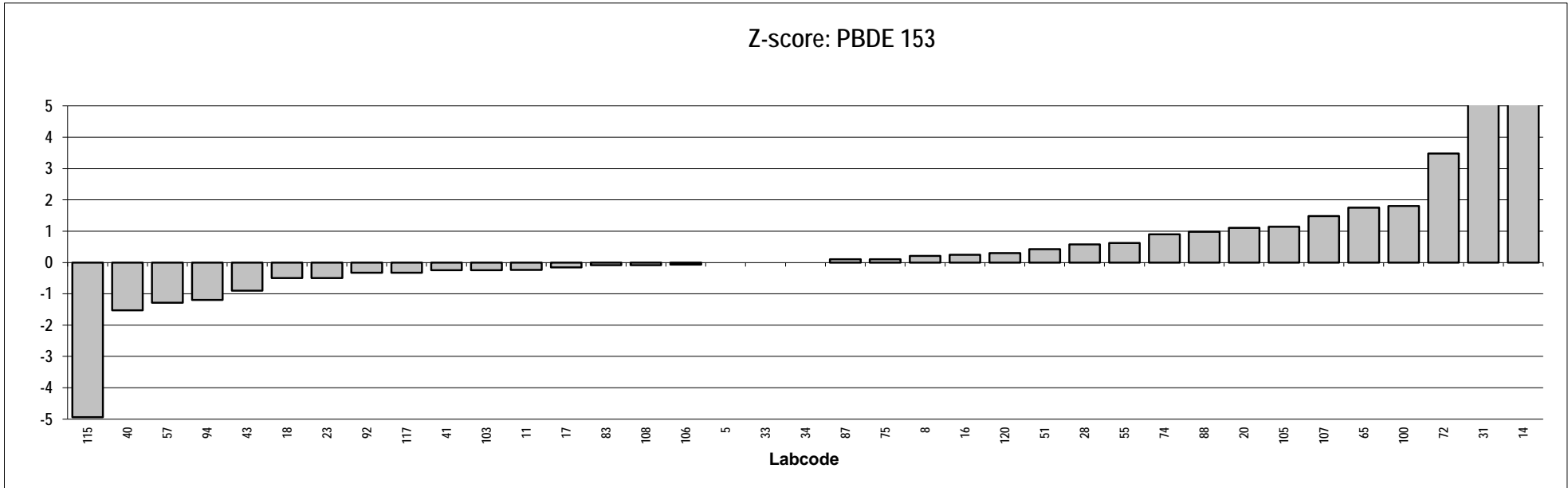
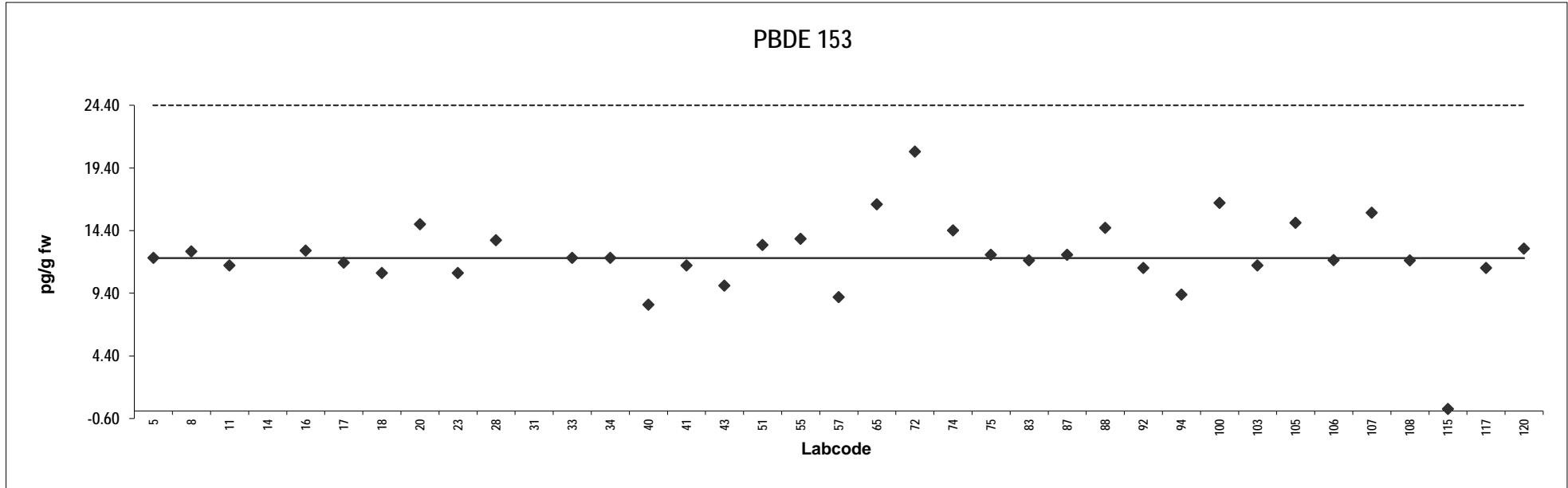


Herring
Congener: PBDE 153

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	12	0.00					
8	13	0.21					
11	12	-0.24					
14	80	28	Outlier,ND				
16	13	0.25					
17	12	-0.15					
18	11	-0.49					
20	15	1.1					
23	11	-0.49					
28	14	0.58					
31	71	24	Outlier				
33	12	0.00					
34	12	0.00					
40	8.5	-1.5					
41	12	-0.25					
43	10	-0.90					
51	13	0.43					
55	14	0.63					
57	9.1	-1.3					
65	16	1.8					
72	21	3.5					
74	14	0.90					
75	12	0.11					
83	12	-0.082					
87	12	0.10					
88	15	0.98					
92	11	-0.33					
94	9.3	-1.2					
100	17	1.8					
103	12	-0.25					
105	15	1.1					
106	12	-0.065					
107	16	1.5					
108	12	-0.082					
115	0.15	-4.9					
117	11	-0.32					
120	13	0.30					

Consensus statistics

Consensus median, pg/g	12
Median all values pg/g	12
Consensus mean, pg/g	12
Standard deviation, pg/g	3.2
Relative standard deviation, %	26
No. of values reported	37
No. of values removed	2
No. of reported non-detects	1

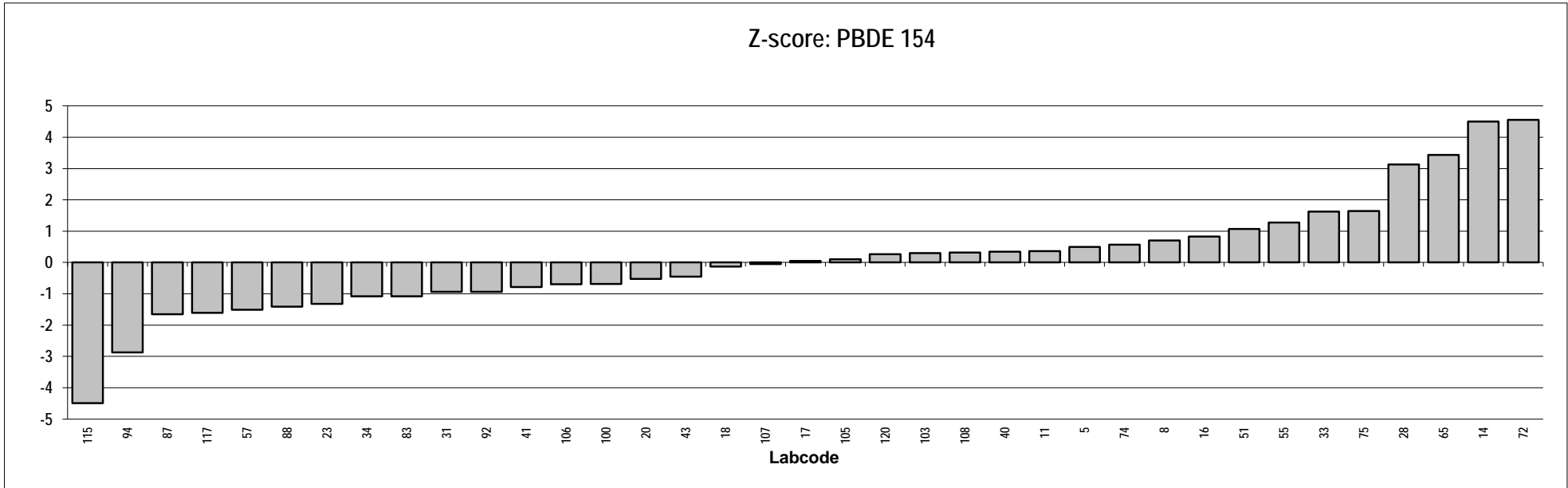
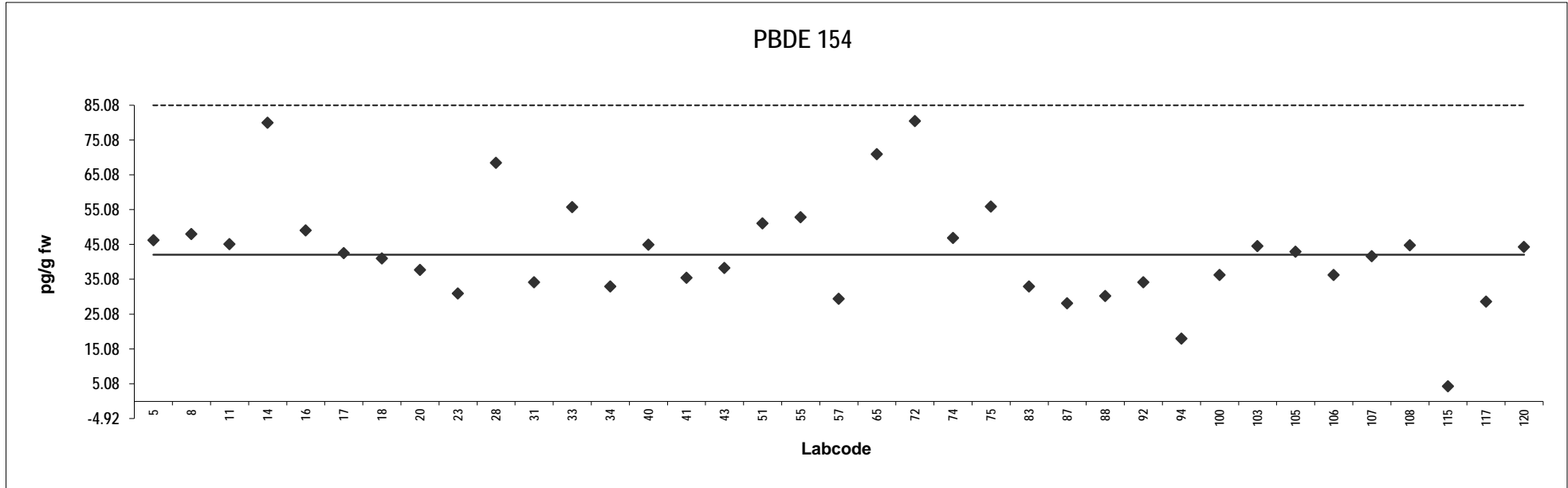


Herring
Congener: PBDE 154

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	46	0.50					
8	48	0.71					
11	45	0.36					
14	80	4.5	ND				
16	49	0.83					
17	43	0.050					
18	41	-0.13					
20	38	-0.52					
23	31	-1.3					
28	69	3.1					
31	34	-0.94					
33	56	1.6					
34	33	-1.1					
40	45	0.34					
41	36	-0.79					
43	38	-0.45					
51	51	1.1					
55	53	1.3					
57	29	-1.5					
65	71	3.4					
72	81	4.6					
74	47	0.57					
75	56	1.6					
83	33	-1.1					
87	28	-1.7					
88	30	-1.4					
92	34	-0.94					
94	18	-2.9					
100	36	-0.69					
103	45	0.30					
105	43	0.11					
106	36	-0.70					
107	42	-0.050					
108	45	0.32					
115	4.3	-4.5					
117	29	-1.6					
120	44	0.26					

Consensus statistics

Consensus median, pg/g	42
Median all values pg/g	43
Consensus mean, pg/g	43
Standard deviation, pg/g	15
Relative standard deviation, %	36
No. of values reported	37
No. of values removed	0
No. of reported non-detects	1

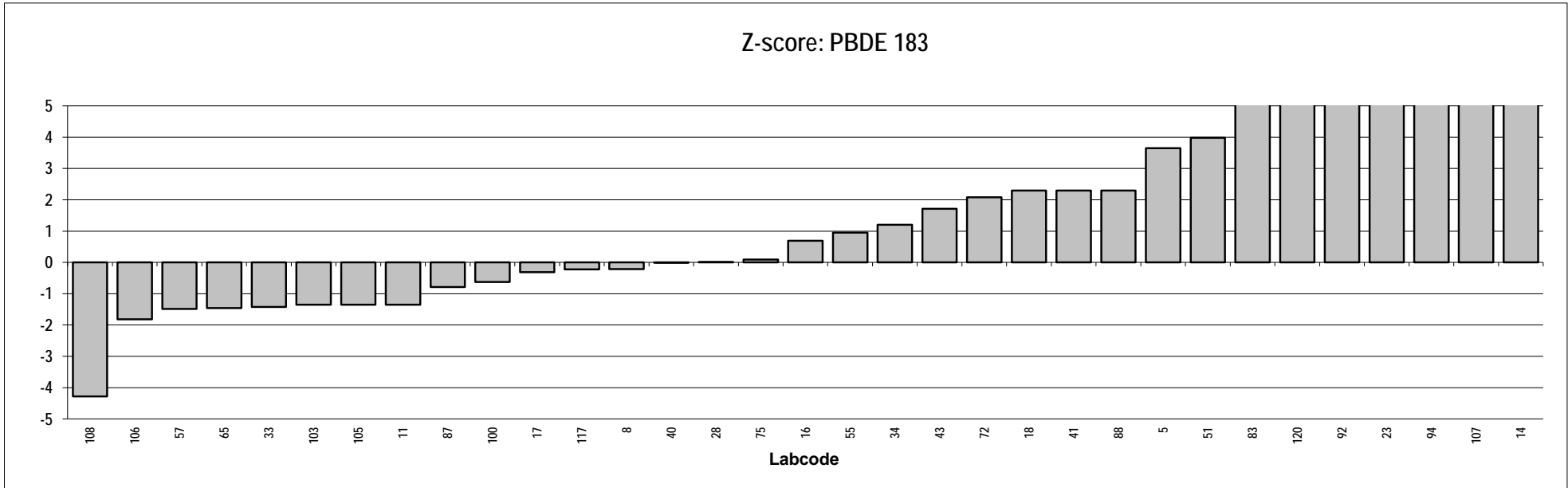
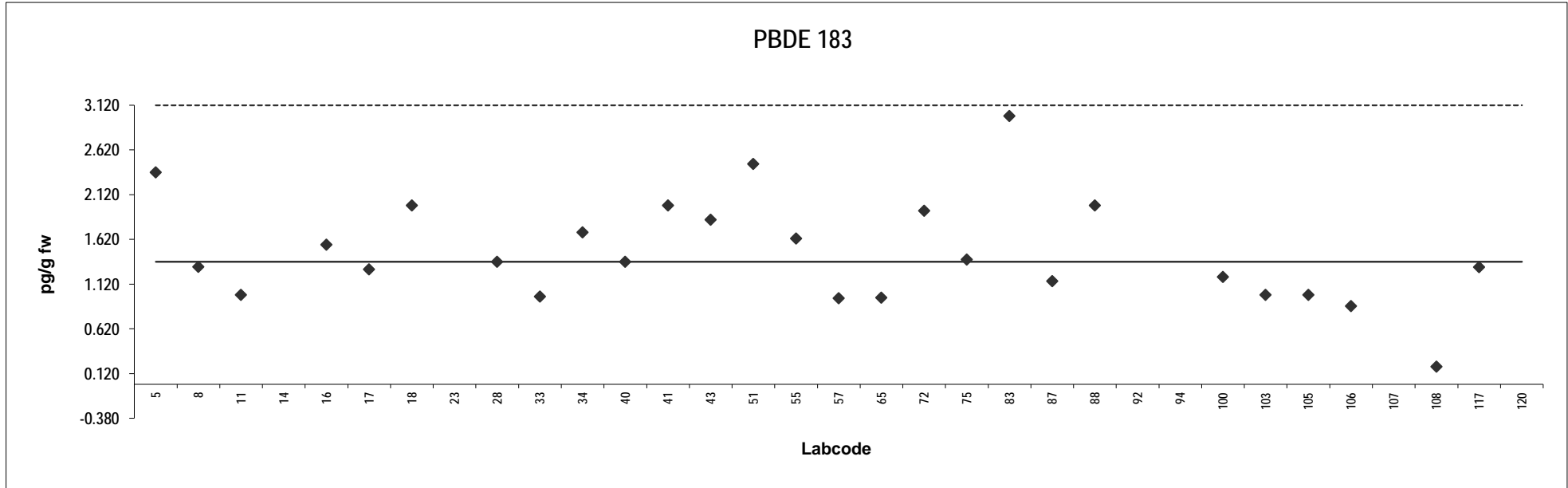


Herring
Congener: PBDE 183

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	2.4	3.6					
8	1.3	-0.21					
11	1.0	-1.3					
14	80	287	Outlier,ND				
16	1.6	0.69					
17	1.3	-0.31					
18	2.0	2.3	ND				
23	4.5	11	Outlier,ND				
28	1.4	0.00091					
33	0.98	-1.4					
34	1.7	1.2					
40	1.4	-0.00091					
41	2.0	2.3					
43	1.8	1.7					
51	2.5	4.0					
55	1.6	0.95					
57	0.96	-1.5					
65	0.97	-1.5					
72	1.9	2.1	ND				
75	1.4	0.094					
83	3.0	5.9					
87	1.2	-0.79					
88	2.0	2.3	ND				
92	3.6	8.1	Outlier,ND				
94	5.4	15	Outlier				
100	1.2	-0.62	ND				
103	1.0	-1.4	ND				
105	1.0	-1.4	ND				
106	0.87	-1.8					
107	10	31	Outlier,ND				
108	0.20	-4.3	ND				
117	1.3	-0.22					
120	3.2	6.7	Outlier,ND				

Consensus statistics

Consensus median, pg/g	1.4
Median all values pg/g	1.6
Consensus mean, pg/g	1.5
Standard deviation, pg/g	0.59
Relative standard deviation, %	40
No. of values reported	33
No. of values removed	6
No. of reported non-detects	12

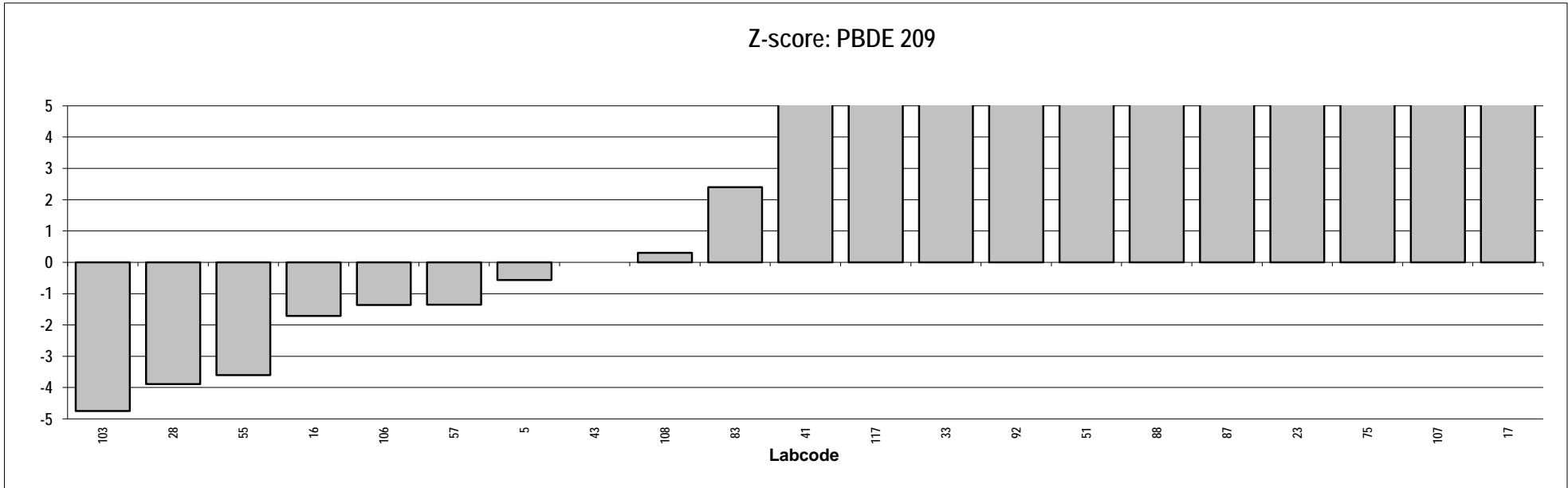
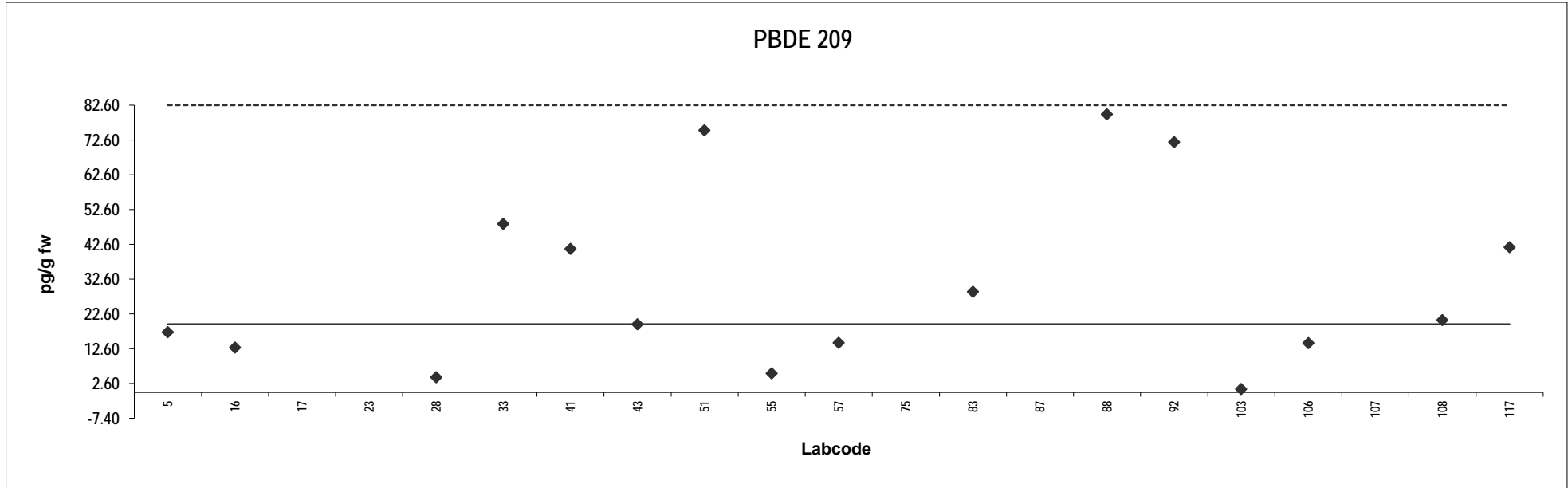


Herring
Congener: PBDE 209

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
5	17	-0.56					
16	13	-1.7					
17	1795	453	Outlier				
23	210	49	Outlier,ND				
28	4.4	-3.9					
33	48	7.4					
41	41	5.5					
43	20	0.00					
51	75	14					
55	5.5	-3.6					
57	14	-1.4					
75	270	64	Outlier				
83	29	2.4					
87	171	39	Outlier				
88	80	15	ND				
92	72	13	ND				
103	1.0	-4.7	ND				
106	14	-1.4					
107	300	72	Outlier,ND				
108	21	0.31					
117	42	5.7					

Consensus statistics

Consensus median, pg/g	20
Median all values pg/g	41
Consensus mean, pg/g	31
Standard deviation, pg/g	26
Relative standard deviation, %	84
No. of values reported	21
No. of values removed	5
No. of reported non-detects	5

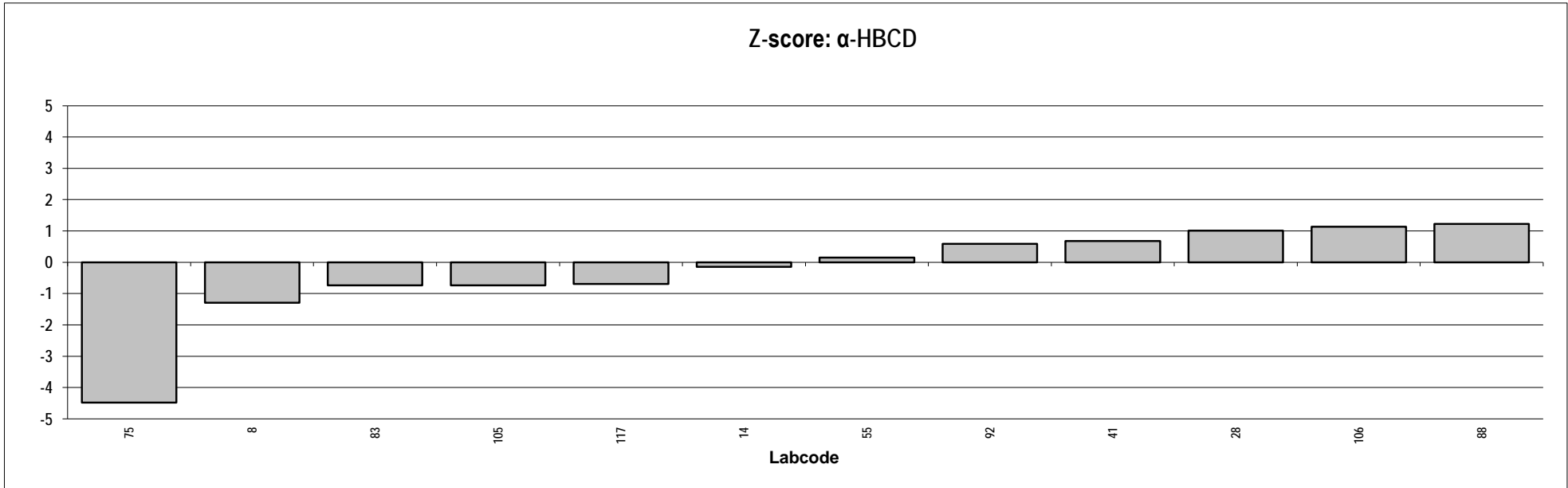
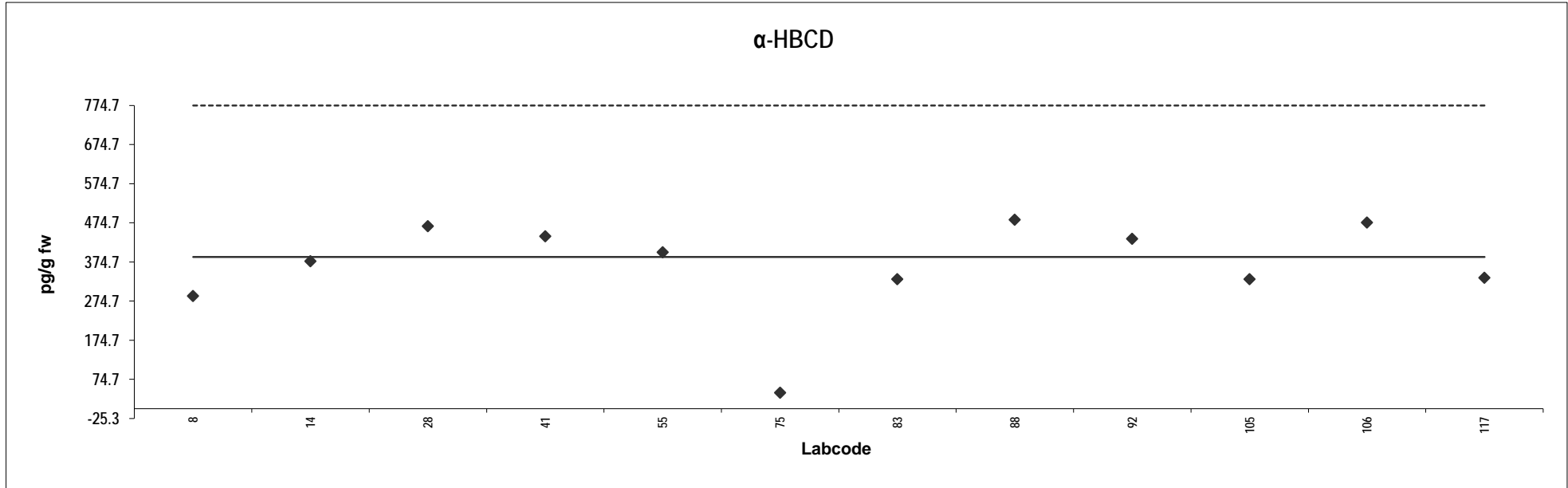


Herring
Congener: α -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	287	-1.3					
14	376	-0.15					
28	465	1.0					
41	440	0.68					
55	399	0.15					
75	40	-4.5					
83	330	-0.74					
88	482	1.2					
92	433	0.59					
105	330	-0.74					
106	475	1.1					
117	334	-0.69					

Consensus statistics

Consensus median, pg/g	387
Median all values pg/g	387
Consensus mean, pg/g	366
Standard deviation, pg/g	122
Relative standard deviation, %	33
No. of values reported	12
No. of values removed	0
No. of reported non-detects	0

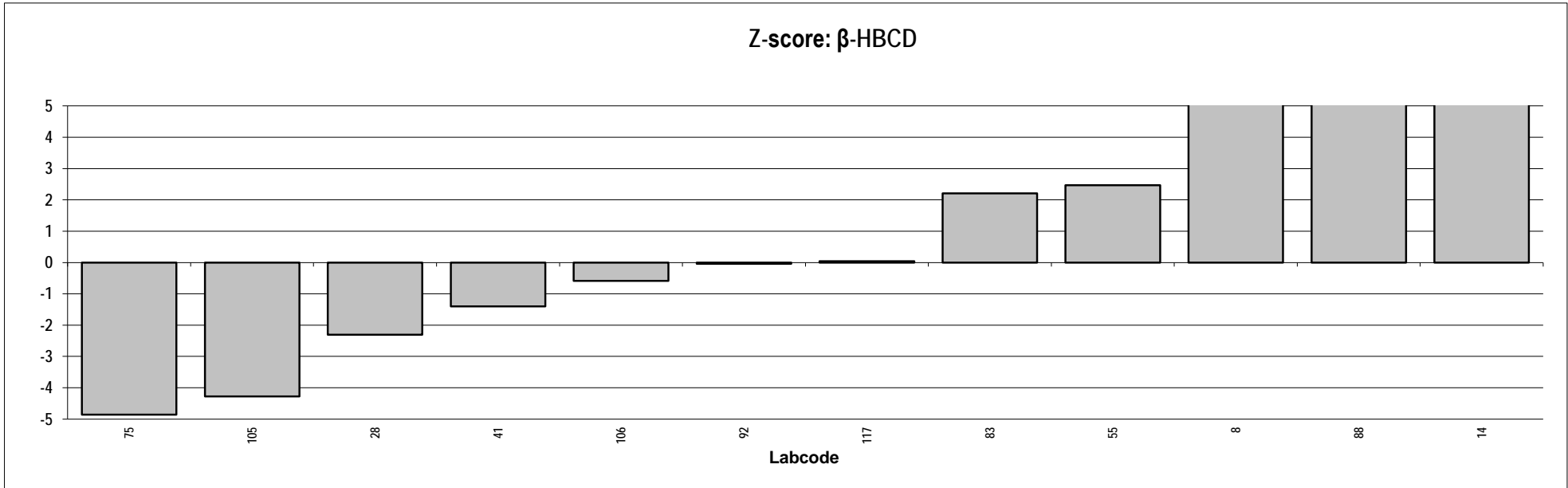
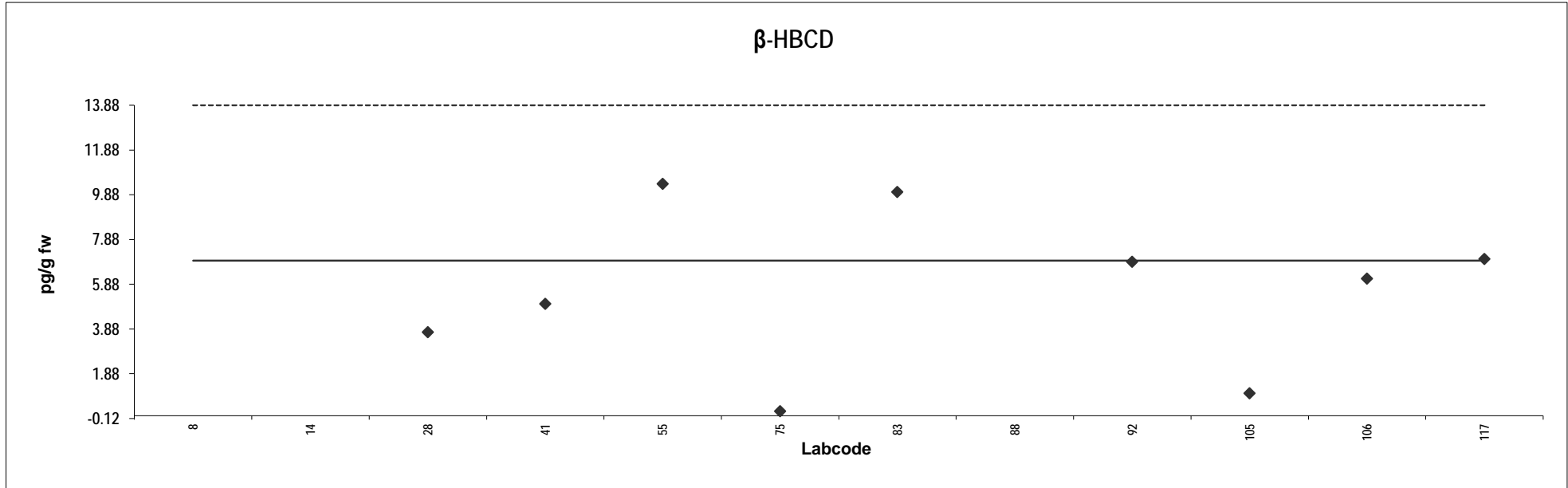


Herring
Congener: β -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	75	49	Outlier,ND				
14	150	103	Outlier,ND				
28	3.7	-2.3					
41	5.0	-1.4	ND				
55	10	2.5					
75	0.20	-4.9	ND				
83	10	2.2					
88	100	67	Outlier,ND				
92	6.9	-0.043					
105	1.0	-4.3	ND				
106	6.1	-0.58					
117	7.0	0.043					

Consensus statistics

Consensus median, pg/g	6.9
Median all values pg/g	6.9
Consensus mean, pg/g	5.6
Standard deviation, pg/g	3.5
Relative standard deviation, %	63
No. of values reported	12
No. of values removed	3
No. of reported non-detects	6

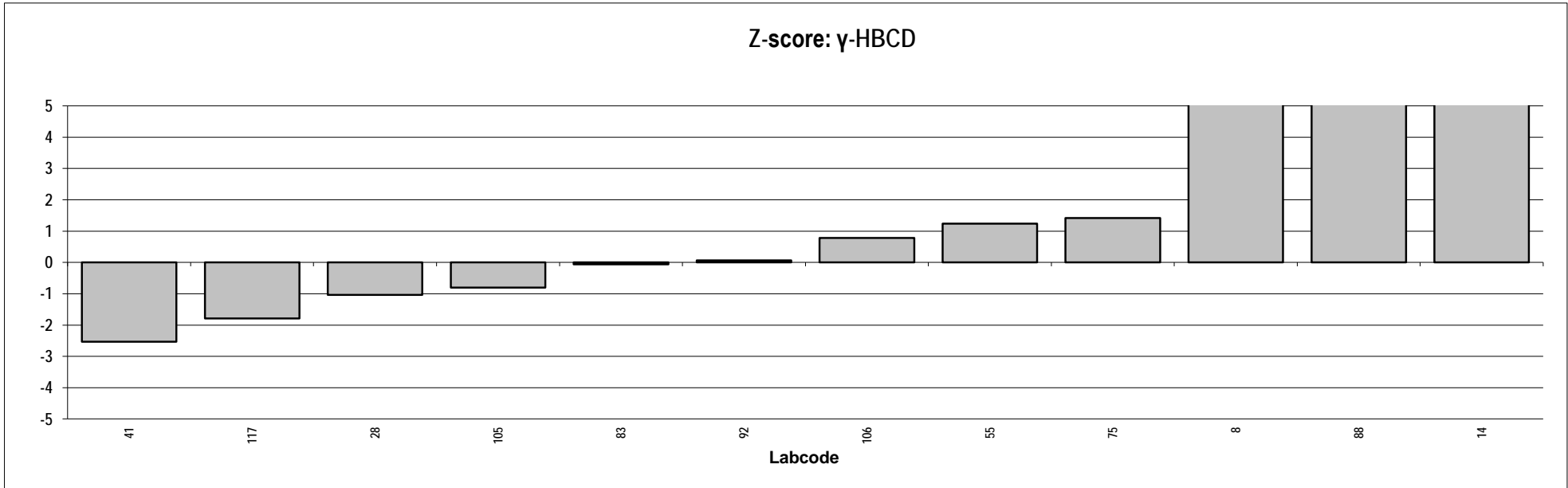
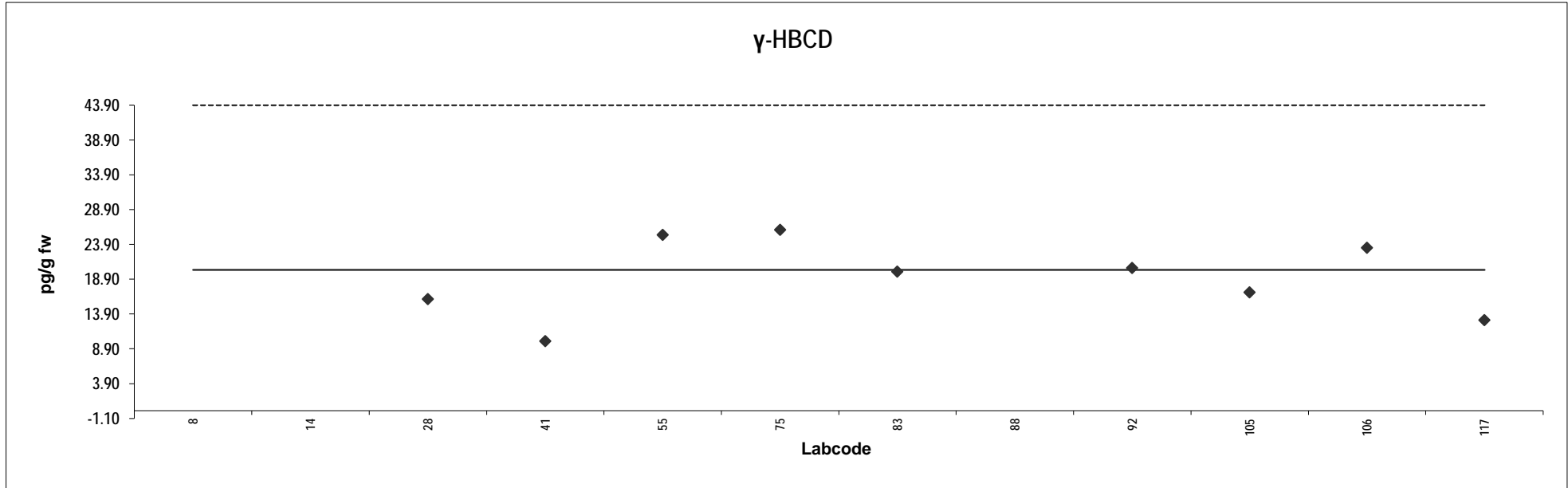


Herring
Congener: γ -HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	75	14	Outlier,ND				
14	150	32	Outlier,ND				
28	16	-1.0					
41	10	-2.5	ND				
55	25	1.2					
75	26	1.4					
83	20	-0.062					
88	100	20	Outlier,ND				
92	21	0.062					
105	17	-0.80					
106	23	0.78					
117	13	-1.8					

Consensus statistics

Consensus median, pg/g	20
Median all values pg/g	22
Consensus mean, pg/g	19
Standard deviation, pg/g	5.5
Relative standard deviation, %	29
No. of values reported	12
No. of values removed	3
No. of reported non-detects	4

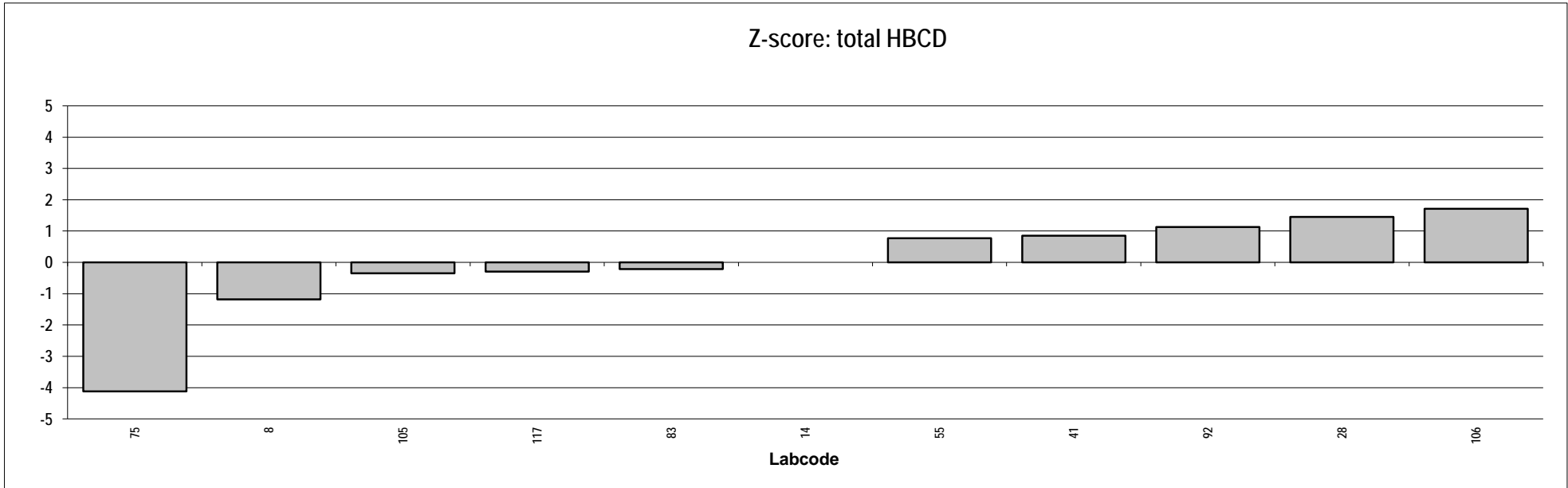
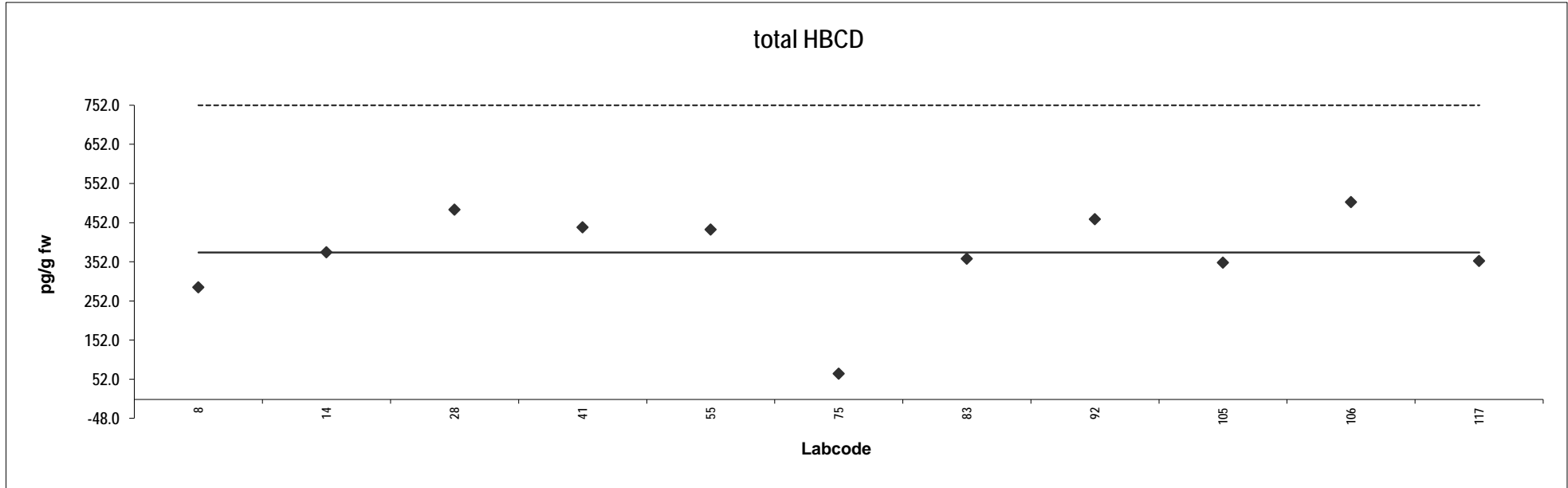


Herring
Congener: total HBCD

Lab code	Conc. pg/g fw.	Z-scores	Notes	Lab code	Conc. pg/g fw.	Z-scores	Notes
8	287	-1.2					
14	376	0.00					
28	485	1.5					
41	440	0.85					
55	434	0.78					
75	66	-4.1					
83	360	-0.21					
92	461	1.1					
105	350	-0.35					
106	505	1.7					
117	354	-0.29					

Consensus statistics

Consensus median, pg/g	376
Median all values pg/g	376
Consensus mean, pg/g	374
Standard deviation, pg/g	122
Relative standard deviation, %	33
No. of values reported	11
No. of values removed	0
No. of reported non-detects	0



Appendix 5:

Presentation of results
for lipid determination

Lipid determination for Sheep meat

Lab code	% lipid	Notes	Lab code	% lipid	Notes	Lab code	% lipid	Notes
1	21		92	22				
8	20		102	24				
11	22		103	20				
13	21		104	22				
15	21		106	19				
16	19		108	21				
17	20		111	22				
19	24		115	30	outlier			
22	20		117	21				
23	20		119	18				
26	29	outlier						
28	21							
32	25							
33	23							
34	21							
35	30	outlier						
39	20							
40	21							
41	24							
42	21							
44	23							
46	22							
48	25							
50	21							
51	20							
52	20							
54	20							
55	20							
57	24							
59	21							
64	21							
65	20							
69	21							
71	21							
72	23							
73	20							
75	20							
76	22							
77	19							
80	22							
81	21							
83	21							
84	14	outlier						
87	21							
88	21							
91	19							

Mean	Standard deviation	Relative standard deviation	Median
21	1.6	7.4	21

Lipid determination for Cod liver

Lab code	% lipid	Notes	Lab code	% lipid	Notes	Lab code	% lipid	Notes
1	77		88	69				
5	66		90	66				
8	67		92	76				
11	68		101	65				
13	68		102	60				
14	69		103	61				
15	83		105	72				
17	66		106	68				
19	76		108	68				
20	68		115	88				
22	68		117	75				
23	66		120	60				
25	70							
26	73							
28	66							
31	72							
32	48							
33	65							
35	7.8	outlier						
39	64							
40	63							
41	66							
42	62							
43	72							
44	75							
46	68							
48	73							
50	63							
51	64							
52	65							
54	95	outlier						
55	65							
57	16	outlier						
59	68							
60	88							
64	50							
65	59							
71	74							
73	67							
75	65							
77	67							
80	65							
81	69							
83	62							
84	59							
87	75							

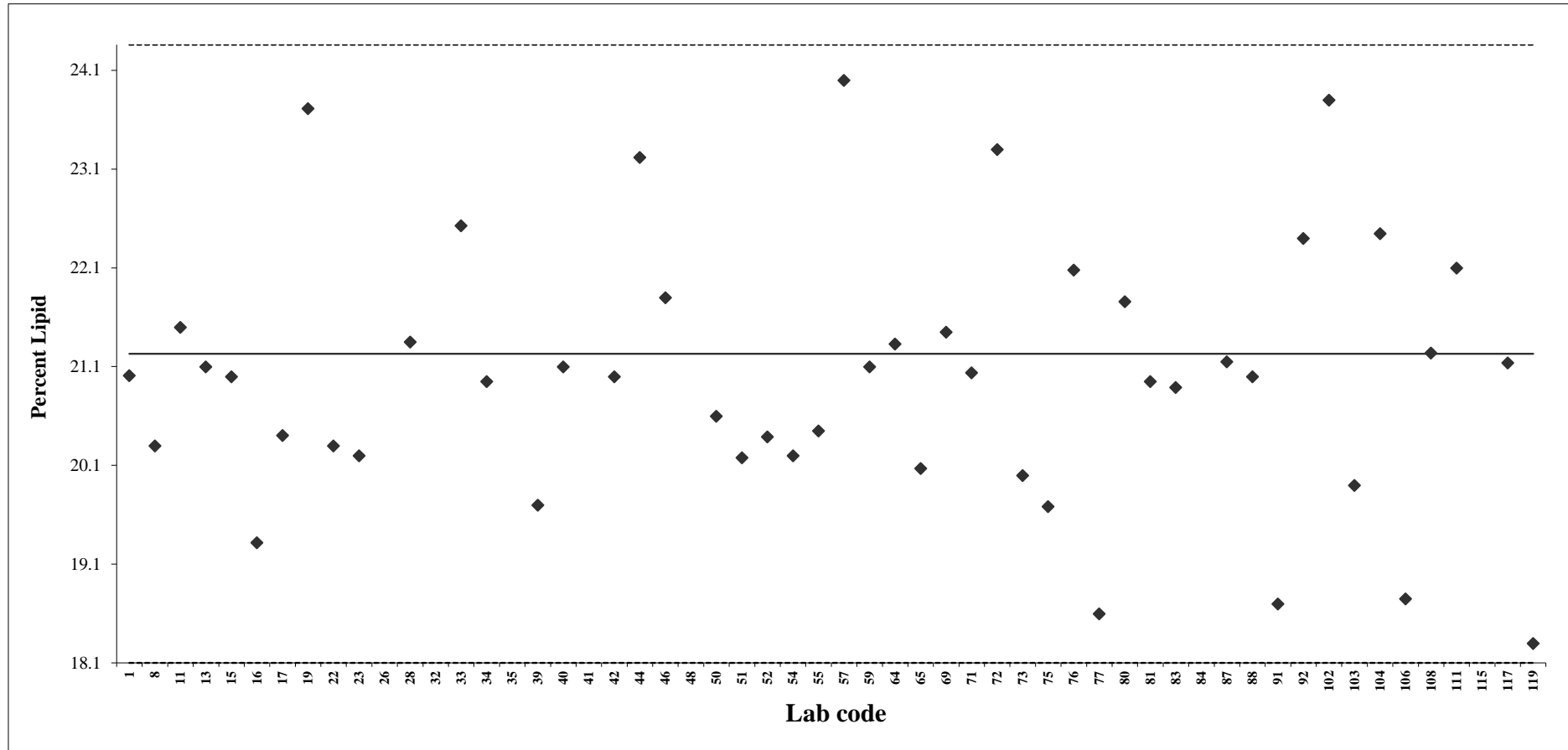
Mean	Standard deviation	Relative standard deviation	Median
68	7.2	11	67

Lipid determination for Herring

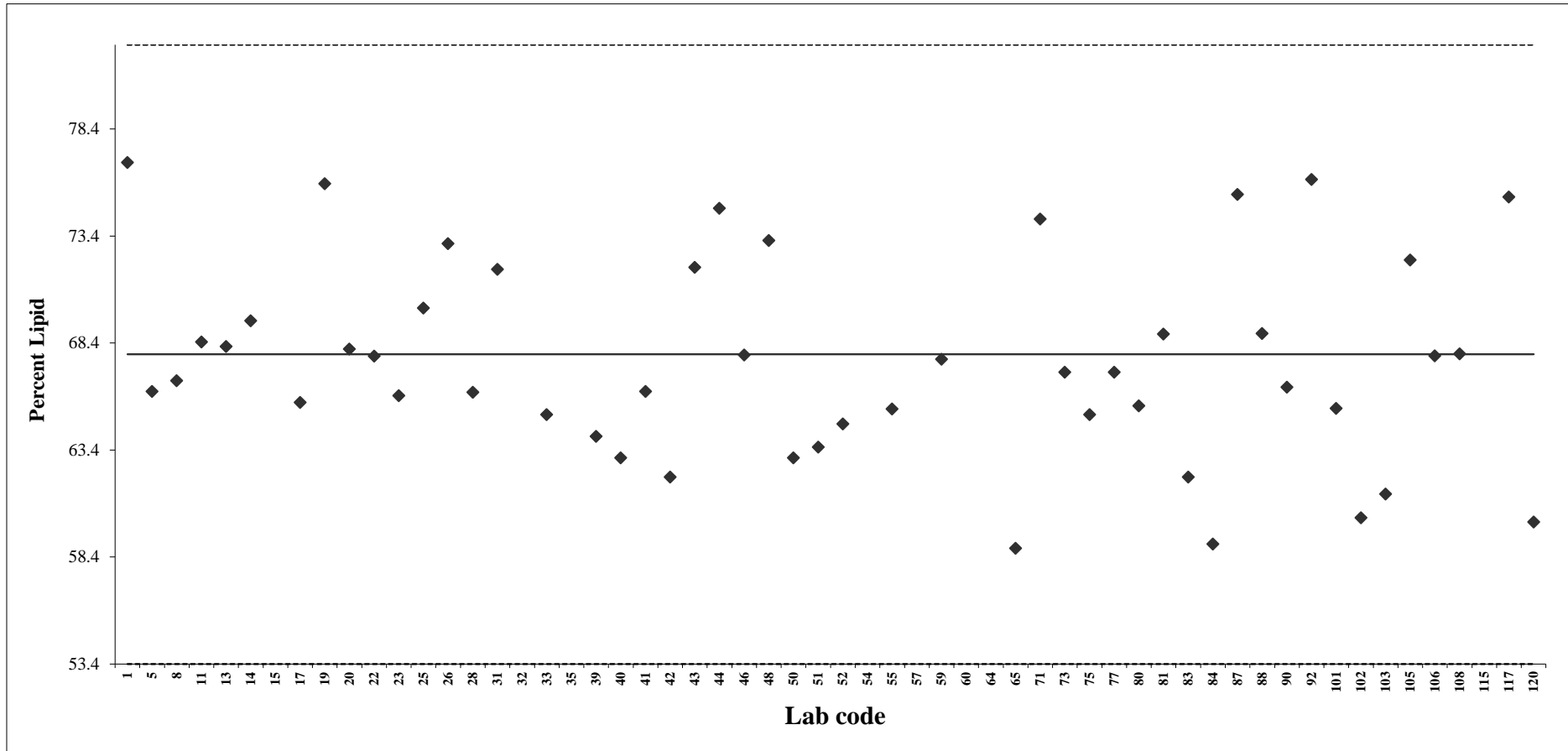
Lab code	% lipid	Notes	Lab code	% lipid	Notes	Lab code	% lipid	Notes
1	16		83	15				
5	16		84	10	outlier			
8	16		87	17				
11	16		88	16				
13	16		90	16				
14	17		91	22	outlier			
15	17		92	13				
16	16		94	15				
17	16		99	9.5	outlier			
19	19		100	18				
20	16		102	16				
22	13		103	14				
23	17		105	18				
25	20		106	18				
26	23	outlier	107	17				
28	15		108	16				
30	17		111	18				
31	17		113	17				
32	19		115	24	outlier			
33	16		117	17				
34	17		120	15				
35	6.7	outlier						
39	17							
40	16							
41	17							
42	16							
43	14							
44	18							
46	16							
48	13							
50	16							
51	16							
52	15							
54	12							
55	17							
57	15							
59	17							
64	17							
65	17							
69	15							
71	17							
72	15							
73	17							
75	15							
80	17							
81	16							

Mean	Standard deviation	Relative standard deviation	Median
16	1.5	9.0	16

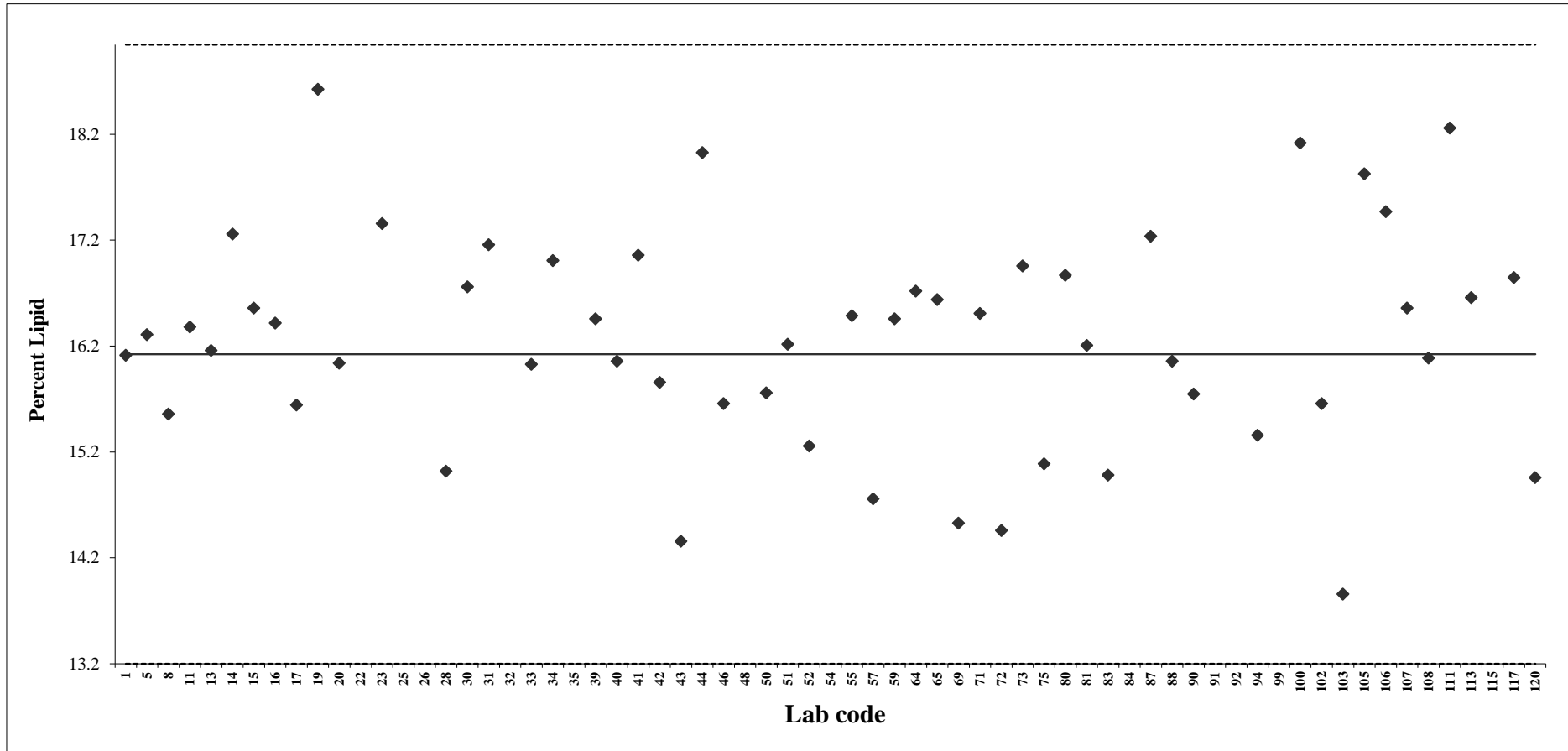
Lipid determination; Sheep meat



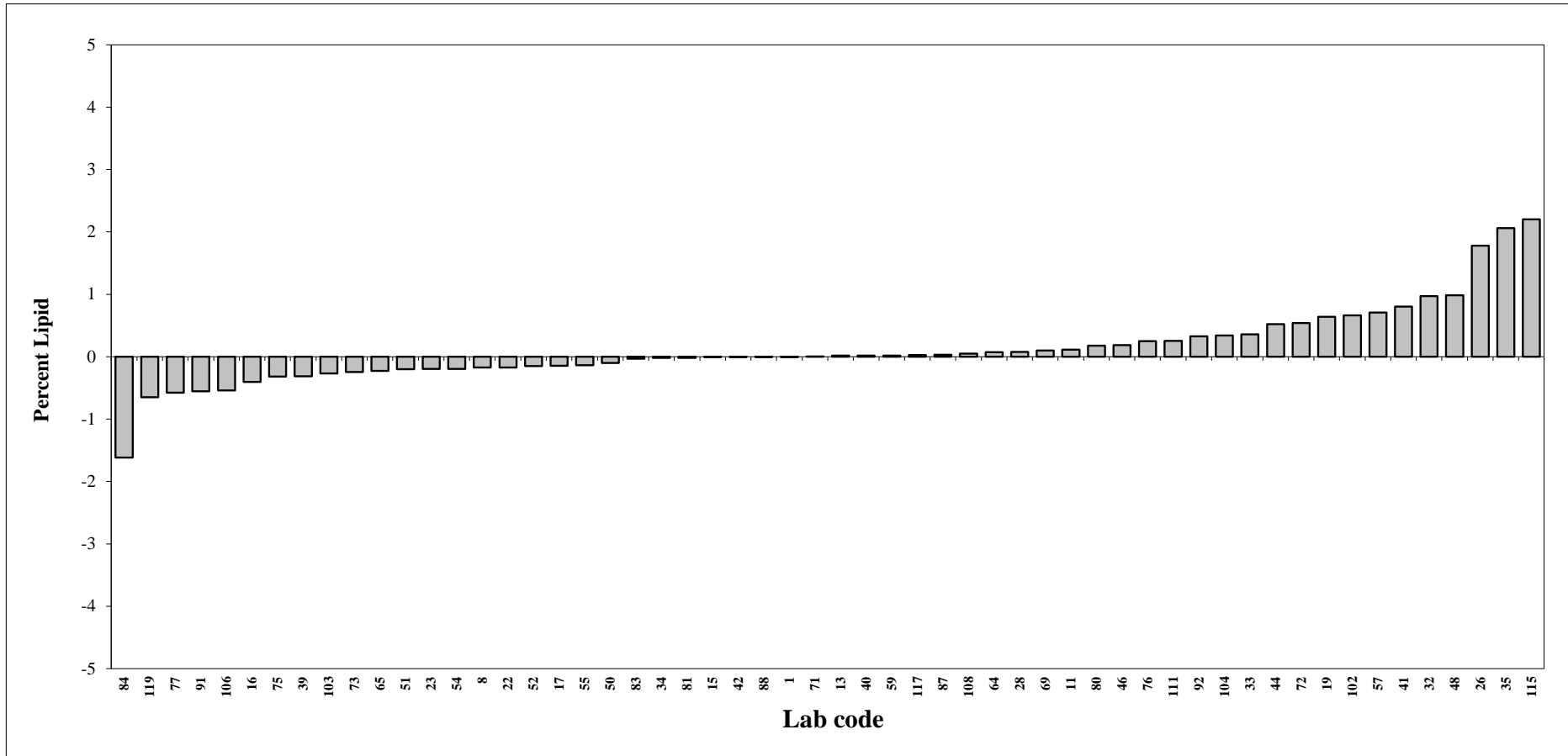
Lipid determination; Cod liver



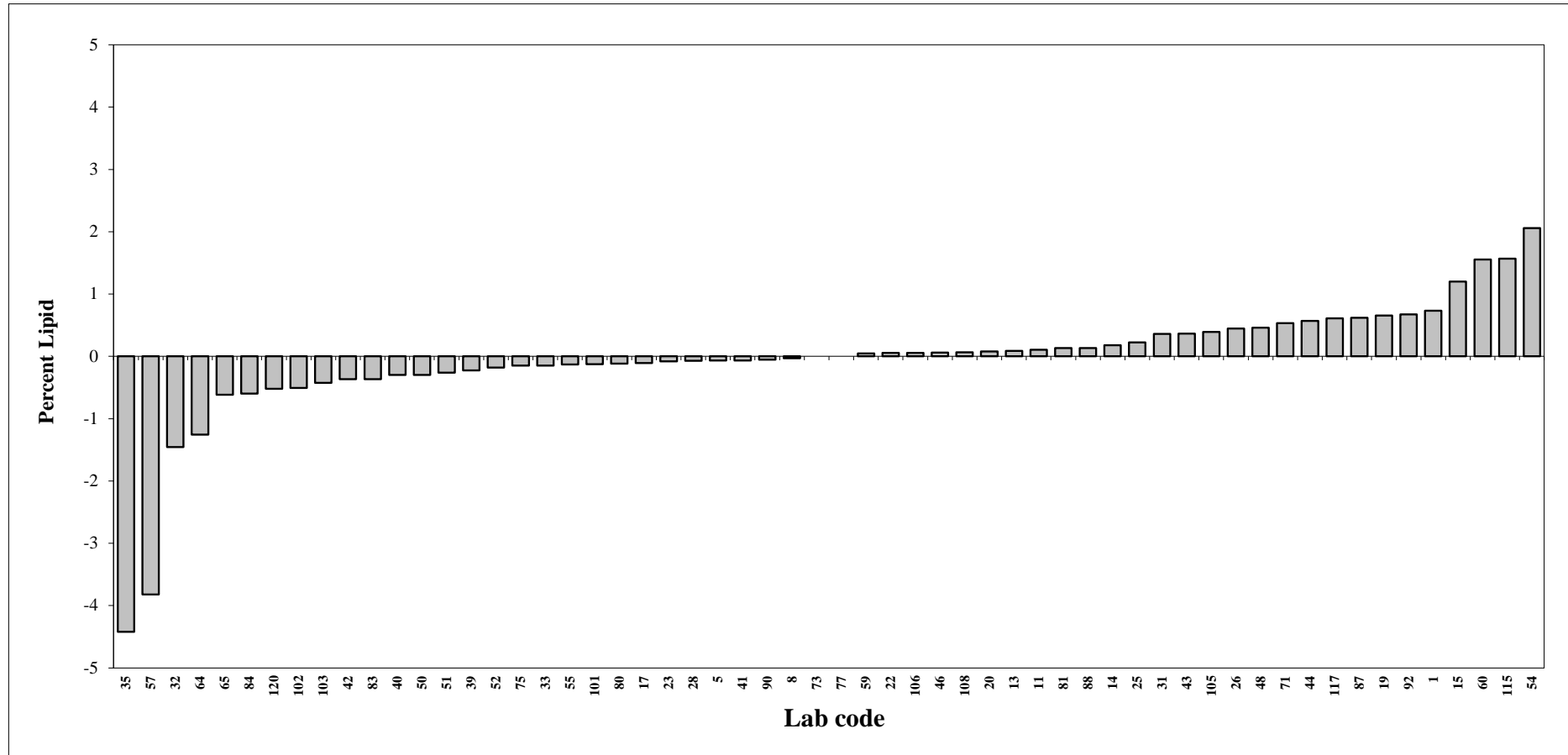
Lipid determination; Herring



Z-score lipid determination; Sheep meat



Z-score lipid determination; Cod liver



Published by Norwegian Institute of Public Health

November 2017

P. O. Box 4404 Nydalen

NO-0403 Oslo

Tel: 21 07 70 00

The report may be downloaded as a pdf-file
from the web-page: www.fhi.no/ILC