

NISTIR 8086

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Comparison Study of Fatty Acid
Concentrations in Human Serum-
Results for Exercise 02:
QA15FASER02**

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National Institute of
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ABSTRACT

The National Institute of Standards and Technology (NIST), at the request of the National Institute of Health's (NIH's) Office of Dietary Supplements (ODS) and in conjunction with the Centers for Disease Control and Prevention (CDC), initiated a second interlaboratory analytical comparison study of fatty acid concentrations in human serum in 2015. Three unknown serum samples were distributed along with the three levels of candidate Standard Reference Material (SRM) 2378 Fatty Acids in Human Serum as control samples. This is a performance-based program so participating laboratories were requested to use the analytical procedures that they typically use in their laboratories for these analyses and report data for those fatty acids that they typically quantify. The results from the second exercise are reported along with a summary of the analytical methods used by each laboratory.

Background

The National Institute of Standards and Technology (NIST) currently offers three quality assurance programs (QAPs) for the determination of micronutrients, vitamin D metabolites, and fatty acids in serum and plasma matrices, the MMQAP, VitDQAP, and the FAQAP, respectively. Given the similarity in the operations of these programs, NIST has consolidated the three programs into one larger program, the NIST Clinical Quality Assurance Program, or ClinQAP (<http://www.nist.gov/mml/csd/clinqap.cfm>). The primary goals of the ClinQAP are to support the comparability of clinical measurements through the MMQAP, VitDQAP, and the FAQAP and to monitor and support the emerging measurement needs of the clinical community.

The first exercise of the FAQAP was conducted in 2012 with 11 laboratories returning data for the content of individual fatty acids in candidate Standard Reference Material (SRM) 2378 along with SRM 1950 Metabolites in Human Plasma which was distributed as the control sample. Candidate SRM 2378 consists of three serum materials collected from: donors who have not taken fish or flaxseed oil supplements for one month prior to collection; donors who have taken flaxseed oil supplements for a minimum of one month prior to collection; and donors who have taken fish oil supplements for a minimum of one month prior to collection. SRM 1950 is designed to represent “normal” human plasma. Plasma was obtained from 100 individuals (equal number of men and women in a narrow age range (40 to 50 years) who had undergone an overnight fast prior to blood draw. The results from the first exercise were published in NIST Internal Report (NISTIR) 7953. [1]

Overview of Exercise 02: QA15FASER02

For the second FAQAP exercise, the intercomparison materials were three serum samples designated as FAQAP unk001 (gold caps), FAQAP unk002 (purple caps), and FAQAP unk003 (pink caps). In addition, participants were requested to run each of the three levels of candidate SRM 2378 Fatty Acids in Human Serum (Level 1 - red cap; level 2 - blue cap; and level 3 - green cap.) as control materials. The laboratories were provided with three vials of each unknown material, each vial contained approximately 1 mL of serum, and were requested to do triplicate measurements of each unknown sample using their laboratory's and/or program's analytical protocols for the concentrations of the fatty acids currently being determined in their laboratory. In addition, they were requested to analyze one subsample of each level of candidate SRM 2378 as the control samples. A target list of fatty acids was provided; however, participants did not need to quantify all of these compounds and could add additional compounds when reporting data. They were requested to report results, using three significant figures, in units of either $\mu\text{g/g}$ or $\mu\text{mol/L}$ (μM) and to provide brief descriptions of their cleanup and analytical procedures.

Reported Results

Laboratories were assigned numerical identification codes in order of receipt of data with the exception of the NIST laboratory which is Lab 1 in this exercise. The fatty acids included in the study are listed in Table 1 with the suggested list of fatty acids at the top of the table and the additional fatty acids reported listed below. The laboratory mean values, standard deviations, and relative standard deviations are shown in Tables 2, 4, and 6 in $\mu\text{g/g}$ for unknowns 01, 02, and 03, respectively, and in Tables 3, 5, and 7 in μM for unknowns 01, 02, and 03, respectively. The laboratory values reported for each of the three levels of the control sample, candidate SRM 2378, are summarized in Tables 8, 10, and 12 in $\mu\text{g/g}$ and in Tables 9, 11, and 13 in μM .

Summaries of the methods used and notes submitted by each laboratory are in Appendix A as well as charts of the mean numerical results reported by each laboratory for each analyte in the exercise materials in Appendix B.

Discussion

NIST contacted over 40 laboratories in early 2015 regarding participation in the second interlaboratory analytical comparison study of total fatty acid concentrations in human serum. Of the laboratories contacted, 15, including NIST, replied with interest in participating in this study and received samples in late February and early March 2015. The deadline for receipt of data was June 1, 2015. All but two laboratories returned data by June 9, 2015. One of the remaining laboratories had personnel changes and instrument issues and requested an additional extension. They reported data on July 24, 2015. In addition, one of the laboratories, who did report data on June 1, requested a second set of samples for reanalysis since the first set of samples had thawed prior to arrival in the laboratory. This laboratory reported results from their reanalysis on July 29, 2015. For this laboratory, only the second set of data is included in this report. As of July 31, the last laboratory had not returned data. An alphabetical list of laboratories who returned data is given in Appendix C. Please note that the numerical codes in the following tables and figures are based on the receipt of the data and therefore do not follow the order in Appendix C.

Laboratories were requested to submit data for the fatty acids that they typically monitor in similar samples (Table 1) for three subsamples of each unknown sample received and one subsample of each of the three levels of candidate SRM 2378 in units of either $\mu\text{g/g}$ or μM along with the density of each sample. Summaries of the results submitted by each laboratory are presented in Tables 2 through 7 as the means, standard deviations, and relative standard deviations for the three values submitted for each unknown sample in both $\mu\text{g/g}$ and μM . Seven laboratories reported the data in $\mu\text{g/g}$, six laboratories reported the data in $\mu\text{mol/L}$, and one laboratory reported data in mg/mL . The conversions between the units reported and the alternate units were calculated using the densities provided by each laboratory except for labs 1, 7, 9, 11, and 14. These laboratories did not report a density so the density was assumed to be 1 g/mL for the conversion. The densities reported by the remaining laboratories ranged from 0.952 g/mL to 1.6 g/mL . Summaries of the results from one subsample of each of the three levels of candidate

SRM 2378 are presented in tables 8 through 13 in both sets of units along with the certified and reference values for the fatty acids.

The tables were sent to the participating laboratories, except lab 7 and 14, on July 1 so that each laboratory had an opportunity to review the data. Three laboratories submitted a limited number of revised values based on the review. Those revisions are reflected in the data summarized in this report.

As shown in Tables 2 through 7, the relative standard deviations (RSDs) for the analyses of three subsamples for each unknown serum sample are generally < 20 %. Lab 3 had a few analytes, particularly in unknown 02, with higher RSDs (up to 90 %). Labs 6 and 13 had higher RSDs for a few compounds reported at low mass fractions (< 2 µg/g), and lab 14 had higher RSDs for miscellaneous fatty acids. Several laboratories reported data for additional fatty acids. These fatty acids are included at the bottom of Table 1 and summarized at the bottom of Tables 2 through 13.

The data in terms of µg/g are plotted by analyte in each material in Appendix B. Each data point is the mean and associated standard deviation of the data reported by the laboratory of the indicated analyte in the indicated sample. The medians calculated from the data received for the fatty acid in each unknown sample are summarized in Tables 2, 4, and 6 and included for each chart. The charts for the three levels of SRM 2378 include the certified or reference values for comparison purposes.

Table 14 reports the percent differences from the median values by laboratory. There are trends for individual fatty acids with data from one or more laboratories being high or low for a particular fatty acid in all of the materials studied. Summarizing only the percent differences >50% from the median values:

- Lab 2 reported higher values for C22:4n6 in all samples.
- Lab 3 had particular issues with unknown 02 resulting in relatively high values with large uncertainties. They also reported high values for C18:1n7 in all of the samples.
- Lab 6 reported low values for C18:3n3, C18:3n6, C20:5n3, C22:4n6, C22:5n3, C22:5n6, and C24:1n9 and high values for C20:1n9.
- Lab 8 reported low values for C20:0, C22:0, and C24:0.
- Lab 9 reported high values (>150% higher than the medians) for C22:5n3.
- Lab 11 reported low values for C22:1n9.
- Lab 13 tended to report either relatively high or low values with high results for the majority of the fatty acids and low values for C20:0, C22:0, C24:0, and C24:1n9.
- Lab 14 reported the highest values for most of the fatty acids although they reported values close to the median values for C14:1n5 and C18:2n6.

The following table summarizes the laboratory trends per fatty acid in each sample in terms of the laboratory code reporting the lowest and highest value for each fatty acid, color coded by laboratory:

Laboratory code for laboratory reporting lowest and highest values for individual fatty acids in each material													
	Unknown 01		Unknown 02		Unknown 03		SRM 2378-1		SRM 2378-2		SRM 2378-3		
Code	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	
C14:0	5	14	5	14	2	14	11 and 12	14	2	14	11	13	
C14:1n5	5	3	5	3	5	13	5	13	5	3	5	4	
C16:0	2	14	2	14	2	13	14	13	2	13	2	13	
C16:1n7	2	14	2	14	2 and 9	14	2	14	2	14	2	14	
C18:0	10	14	1	14	2	14	12	14	2	14	9	14	
C18:1n7	6	14	6	14	6	14	6	14	10	14	6	14	
C18:1n9	2	14	2	14	2	13	2	13	2	13	2	13	
C18:2n6	2	13	2	13	2	13	2	13	2	13	2	13	
C18:3n3	6	9	6	3	6	13	6	13	6	13	6	9	
C18:3n6	5	13	6	3	6	13	6	13	6	13	6	13	
C20:0	8	14	8	14	8	14	8	14	8	14	8	14	
C20:1n9	5	14	5	14	8	14	5	14	10	14	10	14	
C20:2n6	6	14	6	14	6	14	6	13	6	13	6	13	
C20:3n6	2	14	2	14	2	14	2	14	2	14	2	14	
C20:4n6	2	14	2	14	2	14	2	14	2	14	6	14	
C20:5n3	6	14	6	14	6	14	6	14	6	14	6	14	
C22:0	8	14	8	14	8	14	8	14	8	14	8	14	
C22:1n9	11	14	11	14	11	14	11	14	11	14	11	14	
C22:4n6	5	14	5	14	6	14	12	14	6	14	5	14	
C22:5n3	6	9	6	9	6	9	6	9	6	9	6	9	
C22:5n6	5	14	5	14	6	14	5	14	5	14	5	14	
C22:6n3	6	14	6	14	6	14	11	14	11	14	6	14	
C24:0	8	14	8	14	8	14	8	14	8	14	8	14	
C24:1n9	13	14	13	14	13	14	13	14	13	14	13	14	

These results could be obtained by incomplete extraction (low), coelution with other fatty acids or matrix components on the analytical column used (high), misidentification of the chromatographic peaks (low or high), or from some other method variations such as inaccurate calibration.

Following the initial review of the data, lab 8 discovered an error in the concentration of one of the surrogates which they use for recovery corrections. They, therefore, chose a different surrogate (C22:1n9 instead of d_{31} C16:0) to use for the recovery corrections. The lab reported that they had trouble getting the deuterated C16:0 into solution during the preparation of the suite of surrogates. Their revised data are shown in Appendix D.

The methods used by each laboratory are summarized in Appendix A with the procedures in Table A-1, the calibration information in Table A-2, and notes submitted by laboratories in Table A-3. The hydrolysis and extraction methods were similar among some of the laboratories with labs 2, 4, and 5 and labs 3, 10, and 11 following a similar procedures. Most laboratories used gas chromatography (GC) with either flame ionization detection (FID) or mass spectrometry (MS) following a derivatization. The exception being lab 7 which used a liquid chromatography (LC)/ MS/MS method. For the GC analyses, the columns used ranged in polarity from relatively non-polar (5% phenyl methylpolysiloxane phase) to relatively polar (cyanopropyl phase). For the calibration information (Table A-2), labs 1, 3, 4, 6, and 7 used a linear regression, labs 8, 11,

12, and 14 used a quadratic regression, and lab 10 used a mix of linear and quadratic regression tailored by analyte. Lab 9 only reported the limits of their calibration range, and labs 2, 5, and 13 did not report calibration information. Combining the method information with the trends in the data reported does not lead to obvious explanations of the wide variations noted in the data submitted by individual laboratories.

Intercomparison exercises provide an important mechanism for assessing the comparability, repeatability, and trueness of data being produced by the participating laboratories. Exercise materials similar in matrix, form, and analyte concentration to typical samples routinely analyzed by the laboratories are most useful for demonstrating the level of comparability and for revealing potential measurement and method problems. The data from this exercise can be used to assess the comparability across a limited number of international laboratories (see Appendix C). The data do not indicate specific method biases but do indicate the need for such intercomparisons and for the use of control materials to increase the comparability of data across laboratories.

Acknowledgments

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The time and effort of the analysts and management of the participating laboratories are gratefully acknowledged.

Disclaimer

Certain commercial equipment, instruments, or materials are identified in this report to specify adequately the experimental procedure. Such identification does not imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the materials or equipment identified are the best available for the purpose.

References

1. Schantz M.M. Powers C,D., and Schleicher, R Interlaboratory Analytical Comparison Study of Total Fatty Acid Concentrations in Human Serum: Results for Exercise 01: QA12FASER01, NISTIR 7953, Gaithersburg, MD (2013).

Table 1. Fatty Acids Included in Study

Code	Common Name	mol wt (g/mol)
C14:0	Myristic acid	228.38
C14:1n5	Myristoleic acid	226.38
C16:0	Palmitic acid	256.43
C16:1n7	Palmitoleic acid	254.43
C18:0	Stearic acid	284.48
C18:1n7	<i>cis</i> - Vaccenic acid	282.48
C18:1n9	Oleic acid	282.48
C18:2n6	Linoleic acid	280.48
C18:3n3	<i>alpha</i> - Linolenic acid	278.48
C18:3n6	<i>gamma</i> - Linolenic acid	278.48
C20:0	Arachidic acid	312.54
C20:1n9	11-Eicosenoic acid	310.54
C20:2n6	11,14-Eicosadienoic acid	308.53
C20:3n6	<i>homo-gamma</i> - Linolenic acid	306.53
C20:4n6	Arachidonic acid	304.52
C20:5n3	Eicosapentaenoic acid	302.52
C22:0	Docosanoic acid	340.59
C22:1n9	Docosenoic acid	338.59
C22:4n6	Docosatetraenoic acid	332.57
C22:5n3	Docosapentaenoic acid	330.57
C22:5n6	Docosapentaenoic acid	330.57
C22:6n3	Docosahexaenoic acid	328.57
C24:0	Lignoceric acid	368.64
C24:1n9	Nervonic acid	366.63

List any additional information such as known coelutions or results for additional fatty acids below:

C6:0	Caproic acid	116.22
C8:0	Caprylic acid	144.26
C10:0	Decanoic acid	172.30
C10:1n1	9-Decenoic acid	170.30
C11:0	Undecanoic acid	186.32
C12:0	Lauric acid	200.34
C12:1n1	11-Dodecenoic acid	198.34
C12:1n7	<i>cis</i> -5-dodecenoic	198.34
C13:0	tridecanoic acid	214.38
C14:2		224.38
C15:0	Pentadecanoic acid	242.42
C16:1n7t	Palmitelaidic acid	254.43
C16:1n9		254.43
C16:2		252.43
C17:0	Margaric acid	270.46
C17:1	10-Heptadecenoic acid	268.46
C18:1n7t	<i>trans</i> - Vaccenic acid	282.48
C18:1n9t	Elaidic acid	282.48
C18:1n12	Petroselinic acid	282.48
C18:1n12t	Petroselaidic acid	282.48
9c,11t-C18:2n6	Rumenic acid	280.48
C18:4n3	Stearidonic acid	276.48
C19:0	Nonadecanoic acid	298.54
C20:3n3	11,14,17-Eicosatrienoic acid	306.53
C20:3n9	5,8,11-Eicosatrienoic acid (Mead acid)	306.53
C20:4n3	Arachidonic acid (Omega 3)	304.53
C21:0	Heneicosanoic acid	326.58
C22:2n6	Docosadienoic acid	336.59
C23:0	Tricosanoic acid	354.62
C26:0	Hexacosanoic acid	396.68
C26:1		394.68
PhA	Phytanic acid	312.54
PrA	Pristanic acid	298.50

Table 2. Interlaboratory data received for Unknown 01 (µg/g)												
Code	Lab 1			Lab 2			Lab 3 ^a			Lab 4		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	19.2	1.6	8.18%	18.7	0.6	3.19%	18.6	0.3	1.45%	18.1	0.2	1.22%
C14:1n5	0.922	0.056	6.03%	NA			1.47	0.13	9.12%	0.759	0.088	11.62%
C16:0	547	18	3.25%	407	7	1.63%	631	8	1.26%	574	3	0.52%
C16:1n7	35.2	2.3	6.51%	21.2	0.3	1.57%	37.7	1.7	4.52%	37.6	0.3	0.68%
C18:0	184	11	5.75%	183	8	4.28%	252	4	1.55%	210	2	1.05%
C18:1n7	46.7	3.7	8.02%	NA			72.7	5.9	8.11%	47.8	0.3	0.68%
C18:1n9	456	19	4.15%	357	17	4.74%	555	22	3.90%	484	4	0.81%
C18:2n6	825	34	4.13%	445	15	3.31%	931	66	7.05%	913	5	0.59%
C18:3n3	13.2	0.3	2.19%	7.40	0.45	6.05%	15.1	2.0	13.07%	11.1	0.1	1.23%
C18:3n6	6.11	0.59	9.63%	NA			9.39	1.24	13.21%	6.26	0.12	1.96%
C20:0	4.40	0.43	9.68%	NA			9.26	0.00	0.00%	4.31	0.19	4.43%
C20:1n9	5.94	0.37	6.23%	6.70	0.35	5.20%	NA			4.25	0.12	2.93%
C20:2n6	NA			NA			NA			6.85	0.14	2.08%
C20:3n6	NA			28.7	2.4	8.22%	38.7	2.2	5.68%	34.2	0.3	0.97%
C20:4n6	201	15	7.53%	140	11	7.86%	195	20	10.48%	198	2	0.79%
C20:5n3	7.67	0.36	4.74%	19.7	2.3	11.46%	8.76	1.29	14.69%	7.23	0.18	2.54%
C22:0	9.87	0.58	5.92%	NA	NA	NA	22.6	0.2	1.01%	10.5	0.2	1.71%
C22:1n9	1.55	0.09	5.84%	NA	NA	NA	2.88	0.20	6.93%	1.61	0.18	10.91%
C22:4n6	NA	NA	NA	11.5	0.8	7.28%	6.68	0.52	7.77%	5.47	0.32	5.77%
C22:5n3	10.9	0.6	5.13%	13.5	0.7	5.38%	9.91	0.85	8.58%	9.07	0.10	1.13%
C22:5n6	NA			NA			5.52	0.39	7.07%	4.60	0.15	3.25%
C22:6n3	48.2	3.1	6.50%	42.2	5.8	13.70%	45.0	5.3	11.73%	43.3	0.5	1.07%
C24:0	10.2	0.6	5.96%	NA			19.2	0.1	0.49%	9.08	0.04	0.46%
C24:1n9	22.6	0.6	2.84%	NA			36.6	1.1	2.96%	22.5	0.4	1.93%
List any additional information such as known coelutions or results for additional fatty acids below:												
Code	Lab 1			Lab 2			Lab 3 ^a			Lab 4		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0										0.690	0.141	20.46%
C10:1n1												
C11:0												
C12:0				13.5	1.4	10.22%				2.18	0.07	3.20%
C12:1										0.519	0.150	28.96%
C12:1n7												
C13:0												
C14:2												
C15:0												
C16:1n7t												
C16:1n9												
C16:2												
C17:0										6.65	0.22	3.26%
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3												
C19:0												
C20:3n3										1.21	0.08	7.04%
C20:3n9										2.44	0.08	3.09%
C20:4n3												
C21:0												
C22:2n6										1.30	0.12	8.96%
C23:0										3.62	0.27	7.36%
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	NA			1.04	0.00	0.24%	0.979	0.003	0.28%	1.06	0.00	0.36%
^a Reported as µM												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Table 2 (cont). Interlaboratory data received for Unknown 01 (µg/g)												
Code	Lab 5			Lab 6			Lab 7 ^a			Lab 8 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	10.7	0.3	2.47%	11.6	0.8	6.59%	NA			13.6	0.4	3.11%
C14:1n5	0.367	0.064	17.54%	NA			NA			0.654	0.092	14.02%
C16:0	516	4	0.77%	495	24	4.87%	NA			634	24	3.79%
C16:1n7	28.9	0.4	1.36%	21.9	0.7	3.20%	NA			37.6	1.4	3.64%
C18:0	200	1	0.63%	246	8	3.06%	NA			226	9	4.12%
C18:1n7	36.0	0.4	1.22%	27.2	1.6	5.93%	NA			39.7	2.4	6.17%
C18:1n9	427	3	0.71%	364	23	6.19%	NA			582	21	3.61%
C18:2n6	796	6	0.77%	672	46	6.86%	NA			999	39	3.95%
C18:3n3	9.59	0.11	1.15%	1.38	0.07	4.76%	NA			11.9	0.4	3.68%
C18:3n6	5.42	0.04	0.81%	<LOQ			NA			7.34	0.33	4.55%
C20:0	4.56	0.12	2.71%	8.16	0.25	3.03%	NA			0.806	0.034	4.22%
C20:1n9	3.88	0.09	2.23%	6.59	0.38	5.71%	NA			3.94	0.47	11.84%
C20:2n6	6.57	0.08	1.18%	3.68	0.23	6.33%	NA			8.00	0.56	7.01%
C20:3n6	33.1	0.5	1.51%	NA			NA			38.6	1.2	3.10%
C20:4n6	175	1	0.75%	153	10	6.38%	270	13	4.81%	279	13	4.72%
C20:5n3	6.34	0.09	1.42%	1.00	0.18	18.00%	10.7	0.1	0.59%	8.18	0.31	3.80%
C22:0	12.9	0.4	3.16%	30.8	2.4	7.94%	NA			0.374	0.042	11.15%
C22:1n9	1.20	0.07	6.17%	<LOQ			NA			NA		
C22:4n6	4.86	0.09	1.88%	<LOQ			NA			6.40	0.41	6.34%
C22:5n3	7.47	0.09	1.23%	0.542	0.003	0.57%	NA			9.18	0.34	3.66%
C22:5n6	3.57	0.14	3.96%	<LOQ			NA			4.97	0.25	5.07%
C22:6n3	35.7	0.3	0.79%	31.1	2.0	6.59%	62.1	0.7	1.06%	50.3	2.6	5.10%
C24:0	12.1	0.4	3.38%	5.17	0.51	9.86%	NA			0.348	0.070	20.08%
C24:1n9	21.1	0.6	2.67%	10.2	0.4	3.57%	NA			<LOD		
List any additional information such as known coelutions or results for additional fatty acids below:												
Code	Lab 5			Lab 6			Lab 7 ^a			Lab 8 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0												
C10:1n1												
C11:0												
C12:0				<LOQ						1.46	0.09	6.21%
C12:1												
C12:1n7												
C13:0												
C14:2												
C15:0				1.07	0.09	8.03%				3.51	0.14	3.95%
C16:1n7t												
C16:1n9												
C16:2												
C17:0				3.57	0.13	3.51%				6.22	0.28	4.50%
C17:1				0.799	0.160	19.97%						
C18:1n7t												
C18:1n9t				3.03	0.05	1.75%						
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6										3.06	0.11	3.57%
C18:4n3										0.227	0.050	21.91%
C19:0										0.450	0.036	7.90%
C20:3n3										0.491	0.089	18.18%
C20:3n9												
C20:4n3										0.697	0.081	11.69%
C21:0										0.308	0.007	2.17%
C22:2n6												
C23:0				0.326	0.055	16.87%						
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	1.00	0.00	0.00%	0.987	0.050	5.10%	NA			1.03	0.00	0.00%
^a Reported as µM												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Table 2 (cont). Interlaboratory data received for Unknown 01 (µg/g)

Code	Lab 9 ^a			Lab 10 ^a			Lab 11 ^a			Lab 12		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	NA			12.8	0.3	2.28%	11.9	0.9	7.25%	11.2	0.1	1.03%
C14:1n5	NA			0.509	0.009	1.78%	1.08	0.03	2.90%	NA		
C16:0	546	9	1.57%	575	10	1.74%	532	13	2.49%	543	7	1.29%
C16:1n7	31.9	5.0	15.80%	32.9	0.5	1.55%	37.1	6.1	16.35%	28.7	0.4	1.22%
C18:0	208	21	10.14%	175	3	1.64%	209	3	1.32%	192	4	2.10%
C18:1n7	NA			36.6	1.2	3.34%	63.6	5.4	8.55%	Other		
C18:1n9	540	2	0.39%	473	8	1.75%	484	8	1.59%	434	13	2.97%
C18:2n6	964	30	3.06%	916	16	1.75%	857	121	14.16%	848	17	2.00%
C18:3n3	21.6	0.7	3.40%	12.4	0.2	1.60%	12.6	0.8	6.65%	10.2	0.2	1.50%
C18:3n6	NA			6.50	0.07	1.06%	6.17	0.38	6.14%	5.90	0.10	1.69%
C20:0	NA			6.35	0.07	1.04%	6.86	0.61	8.90%	NA		
C20:1n9	NA			4.08	0.18	4.35%	NA			NA		
C20:2n6	NA			6.96	0.29	4.14%	NA			NA		
C20:3n6	NA			34.1	0.9	2.51%	38.1	4.7	12.37%	33.1	0.1	0.17%
C20:4n6	211	3	1.49%	212	4	1.87%	207	21	9.97%	177	4	2.29%
C20:5n3	17.4	0.6	3.44%	7.64	0.11	1.40%	9.17	0.31	3.37%	6.77	0.12	1.71%
C22:0	NA			20.5	0.3	1.38%	17.6	0.3	1.69%	13.7	0.3	2.24%
C22:1n9	NA			NA			0.433	0.089	20.43%	NA		
C22:4n6	NA			5.89	0.21	3.49%	9.05	0.90	9.98%	5.23	0.06	1.10%
C22:5n3	44.1	2.7	6.11%	9.21	0.32	3.53%	12.5	0.3	2.25%	8.17	0.21	2.55%
C22:5n6	NA			4.34	0.15	3.41%	5.21	0.19	3.58%	NA		
C22:6n3	NA			49.0	1.1	2.18%	45.7	7.5	16.31%	40.8	0.3	0.85%
C24:0	NA			18.4	0.5	2.68%	18.5	0.7	3.63%	12.3	0.6	4.75%
C24:1n9	NA			41.0	1.9	4.69%	38.1	3.3	8.53%	23.4	1.0	4.08%

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 9 ^a			Lab 10 ^a			Lab 11 ^a			Lab 12		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0							0.692	0.121	17.46%			
C10:0				<LOD			0.697	0.146	20.94%			
C10:1n1							0.954	0.047	4.91%			
C11:0												
C12:0				0.906	0.024	2.62%	1.53	0.18	11.79%			
C12:1							0.856	0.056	6.52%			
C12:1n7							0.751	0.064	8.54%			
C13:0												
C14:2							0.247	0.021	8.33%			
C15:0				5.12	0.11	2.08%	3.02	0.16	5.37%			
C16:1n7t												
C16:1n9							7.74	1.71	22.14%			
C16:2							0.863	0.084	9.69%			
C17:0				6.62	0.13	1.94%	5.34	0.53	9.94%			
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3				0.162	0.003	2.04%						
C19:0							0.644	0.099	15.34%			
C20:3n3												
C20:3n9				1.91	0.08	3.97%	6.09	0.11	1.80%			
C20:4n3												
C21:0							0.515	0.048	9.41%			
C22:2n6												
C23:0				7.54	0.11	1.46%	9.56	1.74	18.19%			
C26:0							0.144	0.006	4.20%			
C26:1							0.149	0.002	1.53%			
PhA							0.163	0.011	6.66%			
PrA							0.0299	0.0030	10.00%			
density (g/mL)	NA			0.956	0.003	0.28%	NA			1.01	0.01	0.86%

^aReported as µM

^bReported in mg/mL

^calpha and gamma linolenic acid probably coeluting

Table 2 (cont). Interlaboratory data received for Unknown 01 ($\mu\text{g/g}$)									
Code	Lab 13			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C14:0	16.8	0.2	1.25%	26.4	3.3	12.66%	15.2	15.8	12
C14:1n5	0.670	0.014	2.05%	0.722	0.315	43.56%	0.722	0.795	9
C16:0	804	3	0.32%	966	66	6.83%	547	598	13
C16:1n7	46.8	0.4	0.77%	92.0	13.1	14.28%	35.2	37.7	13
C18:0	301	1	0.22%	582	67	11.45%	209	244	13
C18:1n7	64.9	0.5	0.76%	1194	108	9.00%	47.2	162.9	10
C18:1n9	726	5	0.71%	812	88	10.82%	484	515	13
C18:2n6	1403	20	1.40%	790	108	13.73%	857	874	13
C18:3n3	19.7	0.6	3.16%	30.2 ^c	4.2	13.86%	12.2	12.2	12
C18:3n6	10.0	0.1	0.74%	NA			6.26	7.01	9
C20:0	2.17	0.85	39.18%	15.0	2.2	14.48%	5.45	6.18	10
C20:1n9	7.16	0.15	2.14%	12.9	0.6	4.40%	5.94	6.16	9
C20:2n6	16.1	0.0	0.15%	19.4	2.5	13.05%	6.96	9.66	7
C20:3n6	57.3	0.4	0.65%	132	7	5.12%	36.2	46.8	10
C20:4n6	318	2	0.73%	653	121	18.53%	204	242	14
C20:5n3	12.0	0.1	0.99%	109	87	80.28%	8.47	16.53	14
C22:0	3.39	2.75	81.12%	86.9	16.7	19.20%	13.7	20.8	11
C22:1n9	1.44	0.30	20.70%	30.0	6.2	20.61%	1.55	5.59	7
C22:4n6	9.22	0.20	2.22%	43.0	7.1	16.61%	6.54	10.74	10
C22:5n3	14.4	0.1	0.90%	28.9	6.7	23.38%	9.91	13.67	13
C22:5n6	6.64	0.11	1.69%	85.1	34.3	40.28%	5.09	14.99	8
C22:6n3	69.4	0.6	0.82%	287	57	19.88%	45.7	65.4	13
C24:0	2.59	1.24	47.81%	126	22	17.43%	12.1	21.3	11
C24:1n9	2.12	0.09	4.16%	184	34	18.55%	23.0	40.1	10
List any additional information such as known coelutions or results for additional fatty acids below:									
Code	Lab 13			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C6:0				0.067	0.005	7.46%	0.067	0.067	1
C8:0				0.124	0.012	9.68%	0.408	0.408	2
C10:0				0.219	0.021	9.59%	0.690	0.535	3
C10:1n1							0.954	0.954	1
C11:0				0.0038	0.0006	15.79%	0.0038	0.0038	1
C12:0				1.02	0.10	9.80%	1.50	3.43	6
C12:1							0.687	0.687	2
C12:1n7							0.751	0.751	1
C13:0				0.0284	0.0033	11.62%	0.028	0.028	1
C14:2							0.247	0.247	1
C15:0				4.83	0.59	12.22%	3.51	3.51	5
C16:1n7t				127	7	5.51%	127	127	1
C16:1n9							7.74	7.74	1
C16:2							0.863	0.863	1
C17:0				1.11	0.06	5.41%	5.78	4.92	6
C17:1							0.799	0.799	1
C18:1n7t				1028	26	2.53%	1028	1028	1
C18:1n9t				1162	60	5.16%	583	583	2
C18:1n12				930	56	6.02%	930	930	1
C18:1n12t				1256	28	2.23%	1256	1256	1
9c,11t-C18:2n6							3.06	3.06	1
C18:4n3							0.194	0.194	2
C19:0							0.547	0.547	2
C20:3n3							0.848	0.848	2
C20:3n9							2.44	3.48	3
C20:4n3							0.697	0.697	1
C21:0				3.18	0.19	5.97%	0.515	1.334	3
C22:2n6							1.30	1.30	1
C23:0							5.58	5.26	4
C26:0							0.144	0.144	1
C26:1							0.149	0.149	1
PhA							0.163	0.163	1
PrA							0.030	0.030	1
density (g/mL)	1.04	0.01	0.80%	NA			1.01	1.01	9
^a Reported as μM									
^b Reported in mg/mL									
^c <i>alpha</i> and <i>gamma</i> linolenic acid probably coeluting									

Table 3. Interlaboratory data received for Unknown 01 (µM)												
	Lab 1 ^a			Lab 2 ^a			Lab 3			Lab 4 ^a		
Code	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	84.2	6.9	8.18%	85.2	2.7	3.19%	79.7	1.2	1.45%	83.6	1.0	1.22%
C14:1n5	4.07	0.25	6.03%	NA			6.33	0.58	9.12%	3.54	0.41	11.62%
C16:0	2134	69	3.25%	1652	27	1.63%	2408	30	1.26%	2362	12	0.52%
C16:1n7	138	9	6.51%	86.9	1.4	1.57%	145	7	4.52%	156	1	0.68%
C18:0	647	37	5.75%	670	29	4.28%	868	13	1.55%	780	8	1.05%
C18:1n7	165	13	8.02%	NA			252	20	8.11%	179	1	0.68%
C18:1n9	1615	67	4.15%	1315	62	4.74%	1922	75	3.90%	1810	15	0.81%
C18:2n6	2940	121	4.13%	1650	55	3.31%	3249	229	7.05%	3437	20	0.59%
C18:3n3	47.5	1.0	2.19%	27.7	1.7	6.05%	53.0	6.9	13.07%	42.0	0.5	1.23%
C18:3n6	21.9	2.1	9.63%	NA			33.0	4.4	13.21%	23.7	0.5	1.96%
C20:0	14.1	1.4	9.68%	NA			29.0	0.0	0.00%	14.6	0.6	4.43%
C20:1n9	19.1	1.2	6.23%	22.4	1.2	5.20%	NA			14.5	0.4	2.93%
C20:2n6	NA			NA			NA			23.4	0.5	2.08%
C20:3n6	NA			97.5	8.0	8.22%	124	7	5.68%	118	1	0.97%
C20:4n6	660	50	7.53%	478	38	7.86%	626	66	10.48%	687	5	0.79%
C20:5n3	25.4	1.2	4.74%	67.9	7.8	11.46%	28.3	4.2	14.69%	25.2	0.6	2.54%
C22:0	29.0	1.7	5.92%	NA			64.8	0.7	1.01%	32.6	0.6	1.71%
C22:1n9	4.59	0.27	5.84%	NA			8.33	0.58	6.93%	5.01	0.55	10.91%
C22:4n6	NA			36.1	2.6	7.28%	19.7	1.5	7.77%	17.4	1.0	5.77%
C22:5n3	32.9	1.7	5.13%	42.5	2.3	5.38%	29.3	2.5	8.58%	29.0	0.3	1.13%
C22:5n6	NA			NA			16.3	1.2	7.07%	14.7	0.5	3.25%
C22:6n3	147	10	6.50%	134	18	13.70%	134	16	11.73%	139	1	1.07%
C24:0	27.6	1.6	5.96%	NA			50.9	0.3	0.49%	26.0	0.1	0.46%
C24:1n9	61.6	1.8	2.84%	NA			97.7	2.9	2.96%	64.7	1.2	1.93%
List any additional information such as known coelutions or results for additional fatty acids below:												
	Lab 1 ^a			Lab 2 ^a			Lab 3			Lab 4 ^a		
Code	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0										4.23	0.87	20.46%
C10:1n1												
C11:0												
C12:0				69.9	7.1	10.22%				11.5	0.4	3.20%
C12:1										2.76	0.80	28.96%
C12:1n7												
C13:0												
C14:2												
C15:0												
C16:1n7t												
C16:1n9												
C16:2												
C17:0										26.0	0.8	3.26%
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3												
C19:0												
C20:3n3										4.15	0.29	7.04%
C20:3n9										8.39	0.26	3.09%
C20:4n3												
C21:0												
C22:2n6										4.09	0.37	8.96%
C23:0										10.8	0.8	7.36%
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	NA			1.04	0.00	0.24%	0.979	0.003	0.28%	1.06	0.00	0.36%
^a Reported as µg/g												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Code	Lab 5 ^a			Lab 6 ^a			Lab 7			Lab 8		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	46.9	1.2	2.47%	50.2	3.3	6.59%	NA			61.2	1.9	3.11%
C14:1n5	1.62	0.28	17.54%	NA			NA			2.96	0.42	14.02%
C16:0	2012	15	0.77%	1905	93	4.87%	NA			2533	96	3.79%
C16:1n7	114	2	1.36%	84.9	2.7	3.20%	NA			151	6	3.64%
C18:0	701	4	0.63%	854	26	3.06%	NA			813	34	4.12%
C18:1n7	127	2	1.22%	94.9	5.6	5.93%	NA			144	9	6.17%
C18:1n9	1513	11	0.71%	1272	79	6.19%	NA			2113	76	3.61%
C18:2n6	2836	22	0.77%	2365	162	6.86%	NA			3650	144	3.95%
C18:3n3	34.4	0.4	1.15%	4.89	0.23	4.76%	NA			43.7	1.6	3.68%
C18:3n6	19.5	0.2	0.81%	<LOQ			NA			27.0	1.2	4.55%
C20:0	14.6	0.4	2.71%	25.7	0.8	3.03%	NA			2.64	0.11	4.22%
C20:1n9	12.5	0.3	2.23%	21.0	1.2	5.71%	NA			13.0	1.5	11.84%
C20:2n6	21.3	0.3	1.18%	11.8	0.7	6.33%	NA			26.6	1.9	7.01%
C20:3n6	108	2	1.51%	<LOQ			NA			129	4	3.10%
C20:4n6	575	4	0.75%	495	32	6.38%	887	43	4.81%	940	44	4.72%
C20:5n3	21.0	0.3	1.42%	3.26	0.59	18.00%	35.2	0.2	0.59%	27.7	1.1	3.80%
C22:0	37.9	1.2	3.16%	89.2	7.1	7.94%	NA			1.13	0.13	11.15%
C22:1n9	3.54	0.22	6.17%	<LOQ			NA			NA		
C22:4n6	14.6	0.3	1.88%	<LOQ			NA			19.7	1.3	6.34%
C22:5n3	22.6	0.3	1.23%	1.62	0.01	0.57%	NA			28.5	1.0	3.66%
C22:5n6	10.8	0.4	3.96%	<LOQ			NA			15.4	0.8	5.07%
C22:6n3	109	1	0.79%	93.4	6.2	6.59%	189	2	1.06%	157	8	5.10%
C24:0	32.9	1.1	3.38%	13.8	1.4	9.86%	NA			0.968	0.194	20.08%
C24:1n9	57.6	1.5	2.67%	27.4	1.0	3.57%	NA			<LOD		

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 5 ^a			Lab 6 ^a			Lab 7			Lab 8		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0												
C10:1n1												
C11:0												
C12:0				<LOQ						7.45	0.46	6.21%
C12:1												
C12:1n7												
C13:0												
C14:2												
C15:0				4.37	0.35	8.03%				14.8	0.6	3.95%
C16:1n7t												
C16:1n9												
C16:2												
C17:0				13.0	0.5	3.51%				23.6	1.1	4.50%
C17:1				2.94	0.59	19.97%						
C18:1n7t												
C18:1n9t				10.6	0.2	1.75%						
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6										11.2	0.4	3.57%
C18:4n3										0.840	0.184	21.91%
C19:0										1.55	0.12	7.90%
C20:3n3										1.64	0.30	18.18%
C20:3n9												
C20:4n3										2.35	0.27	11.69%
C21:0										0.968	0.021	2.17%
C22:2n6												
C23:0				0.907	0.153	16.87%						
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	1.00	0.00	0.00%	0.987	0.050	5.10%	NA			1.03	0.00	0.00%

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Table 3 (cont). Interlaboratory data received for Unknown 01 (µM)												
Code	Lab 9			Lab 10			Lab 11			Lab 12 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	NA			53.7	1.2	2.28%	52.0	3.8	7.25%	49.1	0.5	1.03%
C14:1n5	NA			2.15	0.04	1.78%	4.79	0.14	2.90%	NA		
C16:0	2130	33	1.57%	2145	37	1.74%	2076	52	2.49%	2128	27	1.29%
C16:1n7	125	20	15.80%	124	2	1.55%	146	24	16.35%	113	1	1.22%
C18:0	729	74	10.14%	587	10	1.64%	735	10	1.32%	679	14	2.10%
C18:1n7	NA			124	4	3.34%	225	19	8.55%	Other		
C18:1n9	1911	7	0.39%	1602	28	1.75%	1715	27	1.59%	1543	46	2.97%
C18:2n6	3438	105	3.06%	3122	55	1.75%	3057	433	14.16%	3037	61	2.00%
C18:3n3	77.5	2.6	3.40%	42.7	0.7	1.60%	45.1	3.0	6.65%	36.7	0.6	1.50%
C18:3n6	NA			22.3	0.2	1.06%	22.1	1.4	6.14%	21.3	0.4	1.69%
C20:0	NA			19.4	0.2	1.04%	21.9	2.0	8.90%	NA		
C20:1n9	NA			12.6	0.5	4.35%	NA			NA		
C20:2n6	NA			21.6	0.9	4.14%	NA			NA		
C20:3n6	NA			106	3	2.51%	124	15	12.37%	108	0	0.17%
C20:4n6	694	10	1.49%	665	12	1.87%	680	68	9.97%	583	13	2.29%
C20:5n3	57.4	2.0	3.44%	24.1	0.3	1.40%	30.3	1.0	3.37%	22.5	0.4	1.71%
C22:0	NA			57.6	0.8	1.38%	51.8	0.9	1.69%	40.3	0.9	2.24%
C22:1n9	NA			NA			1.28	0.26	20.43%	NA		
C22:4n6	NA			16.9	0.6	3.49%	27.2	2.7	9.98%	15.8	0.2	1.10%
C22:5n3	134	8	6.11%	26.6	0.9	3.53%	37.7	0.8	2.25%	24.8	0.6	2.55%
C22:5n6	NA			12.5	0.4	3.41%	15.8	0.6	3.58%	NA		
C22:6n3	NA			142	3	2.18%	139	23	16.31%	125	1	0.85%
C24:0	NA			47.8	1.3	2.68%	50.1	1.8	3.63%	33.6	1.6	4.75%
C24:1n9	NA			107	5	4.69%	104	9	8.53%	64.1	2.6	4.08%

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 9			Lab 10			Lab 11			Lab 12 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0							4.80	0.84	17.46%			
C10:0				<LOD			4.04	0.85	20.94%			
C10:1n1							5.60	0.27	4.91%			
C11:0												
C12:0				4.33	0.11	2.62%	7.66	0.90	11.79%			
C12:1							4.32	0.28	6.52%			
C12:1n7							3.79	0.32	8.54%			
C13:0												
C14:2							1.10	0.09	8.33%			
C15:0				13.3	0.3	2.08%	12.5	0.7	5.37%			
C16:1n7t												
C16:1n9							30.4	6.7	22.14%			
C16:2							3.42	0.33	9.69%			
C17:0				23.4	0.5	1.94%	19.7	2.0	9.94%			
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3				0.559	0.011	2.04%						
C19:0							2.16	0.33	15.34%			
C20:3n3												
C20:3n9				5.95	0.24	3.97%	19.9	0.4	1.80%			
C20:4n3												
C21:0							1.58	0.15	9.41%			
C22:2n6												
C23:0				20.3	0.3	1.46%	26.9	4.9	18.19%			
C26:0							0.363	0.015	4.20%			
C26:1							0.377	0.006	1.53%			
PhA							0.520	0.035	6.66%			
PrA							0.100	0.010	10.00%			
density (g/mL)	NA			0.956	0.003	0.28%	NA			1.01	0.01	0.86%

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Table 3 (cont). Interlaboratory data received for Unknown 01 (µM)									
Code	Lab 13 ^a			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C14:0	76.5	1.0	1.25%	116	15	12.66%	68.9	69.8	12
C14:1n5	3.09	0.06	2.05%	3.19	1.39	43.56%	3.19	3.53	9
C16:0	3268	10	0.32%	3766	257	6.83%	2134	2348	13
C16:1n7	192	1	0.77%	362	52	14.28%	138	149	13
C18:0	1103	2	0.22%	2047	234	11.45%	735	863	13
C18:1n7	239	2	0.76%	4227	381	9.00%	172	578	10
C18:1n9	2679	19	0.71%	2874	311	10.82%	1715	1837	13
C18:2n6	5214	73	1.40%	2816	387	13.73%	3057	3139	13
C18:3n3	73.9	2.3	3.16%	109 ^c	15	13.86%	43.2	44.1	12
C18:3n6	37.6	0.3	0.74%	NA			22.3	25.4	9
C20:0	7.24	2.84	39.18%	47.9	6.9	14.48%	17.0	19.7	10
C20:1n9	24.1	0.5	2.14%	41.4	1.8	4.40%	19.1	20.1	9
C20:2n6	54.4	0.1	0.15%	63.0	8.2	13.05%	23.4	31.7	7
C20:3n6	195	1	0.65%	431	22	5.12%	121	154	10
C20:4n6	1091	8	0.73%	2145	397	18.53%	672	800	14
C20:5n3	41.2	0.4	0.99%	360	289	80.28%	28.0	55.0	14
C22:0	10.4	8.4	81.12%	255	49	19.20%	40.3	60.9	11
C22:1n9	4.44	0.92	20.70%	88.6	18.3	20.61%	4.59	16.5	7
C22:4n6	28.9	0.6	2.22%	129	21	16.61%	19.7	32.6	10
C22:5n3	45.4	0.4	0.90%	87.3	20.4	23.38%	29.3	41.7	13
C22:5n6	21.0	0.4	1.69%	257	104	40.28%	15.6	45.5	8
C22:6n3	220	2	0.82%	875	174	19.88%	139	200	13
C24:0	7.33	3.50	47.81%	342	60	17.43%	32.9	57.5	11
C24:1n9	6.03	0.25	4.16%	501	93	18.55%	64.4	109	10
List any additional information such as known coelutions or results for additional fatty acids below:									
Code	Lab 13 ^a			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C6:0				0.576	0.043	7.46%	0.576	0.576	1
C8:0				0.860	0.083	9.68%	2.83	2.83	2
C10:0				1.27	0.12	9.59%	4.04	3.18	3
C10:1n1							5.60	5.60	1
C11:0				0.0204	0.0032	15.79%	0.0204	0.0204	1
C12:0				5.09	0.50	9.80%	7.55	17.6	6
C12:1							3.54	3.54	2
C12:1n7							3.79	3.79	1
C13:0				0.132	0.015	11.62%	0.132	0.132	1
C14:2							1.10	1.10	1
C15:0				19.9	2.4	12.22%	13.3	13.0	5
C16:1n7t				499	28	5.51%	499	499	1
C16:1n9							30.44	30.44	1
C16:2							3.42	3.42	1
C17:0				4.10	0.22	5.41%	21.6	18.3	6
C17:1							2.94	2.94	1
C18:1n7t				3639	92	2.53%	3639	3639	1
C18:1n9t				4114	212	5.16%	2062	2062	2
C18:1n12				3292	198	6.02%	3292	3292	1
C18:1n12t				4446	99	2.23%	4446	4446	1
9c,11t-C18:2n6							11.20	11.20	1
C18:4n3							0.70	0.70	2
C19:0							1.85	1.85	2
C20:3n3							2.90	2.90	2
C20:3n9							8.39	11.40	3
C20:4n3							2.35	2.35	1
C21:0				9.74	0.58	5.97%	1.58	4.09	3
C22:2n6							4.09	4.09	1
C23:0							15.55	14.74	4
C26:0							0.36	0.36	1
C26:1							0.38	0.38	1
PhA							0.52	0.52	1
PrA							0.10	0.10	1
density (g/mL)	1.04	0.01	0.80%	NA			1.01	1.01	9
^a Reported as µg/g									
^b Reported in mg/mL									
^c alpha and gamma linolenic acid probably coeluting									

Table 4. Interlaboratory data received for Unknown 02 (µg/g)												
Code	Lab 1			Lab 2			Lab 3 ^a			Lab 4		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	18.6	1.1	6.04%	20.0	0.8	3.79%	24.0	0.1	0.56%	22.2	0.1	0.55%
C14:1n5	1.11	0.03	2.74%	NA			2.62	0.94	35.66%	1.49	0.03	2.27%
C16:0	474	33	6.85%	381	15	3.81%	608	12	2.04%	538	4	0.68%
C16:1n7	36.4	0.8	2.26%	25.1	0.7	2.71%	60.4	19.9	32.87%	49.4	0.3	0.60%
C18:0	158	11	6.69%	166	3	1.76%	233	6	2.50%	190	2	0.82%
C18:1n7	36.3	2.0	5.42%	NA			89.8	53.7	59.85%	42.2	0.1	0.26%
C18:1n9	338	14	4.14%	290	7	2.40%	778	475	61.07%	441	3	0.74%
C18:2n6	736	64	8.70%	408	5	1.18%	1255	799	63.67%	801	6	0.78%
C18:3n3	14.5	0.8	5.22%	8.91	0.18	2.05%	31.9	25.4	79.65%	15.2	0.4	2.82%
C18:3n6	8.14	0.39	4.81%	NA	NA	NA	27.4	22.9	83.31%	10.2	0.1	1.05%
C20:0	3.23	0.14	4.34%	NA	NA	NA	8.10	0.18	2.28%	3.97	0.05	1.38%
C20:1n9	3.71	0.25	6.80%	5.59	0.06	1.05%	NA			3.19	0.10	3.24%
C20:2n6	NA			NA			NA			6.11	0.12	2.05%
C20:3n6	NA			33.3	0.6	1.72%	77.6	63.5	81.82%	38.9	0.1	0.16%
C20:4n6	129	8	6.20%	105	2	1.77%	251	211	83.82%	139	1	0.38%
C20:5n3	33.0	2.5	7.67%	35.7	3.9	10.77%	72.5	62.6	86.36%	34.8	0.1	0.36%
C22:0	8.38	0.58	6.92%	NA	NA	NA	16.4	0.3	2.13%	7.77	0.38	4.89%
C22:1n9	1.05	0.05	4.46%	NA	NA	NA	3.70	1.60	43.30%	1.45	0.16	10.93%
C22:4n6	NA	NA	NA	10.0	0.2	2.40%	10.0	8.5	84.70%	4.30	0.31	7.14%
C22:5n3	20.3	1.3	6.63%	20.7	0.6	2.91%	36.6	31.2	85.29%	18.4	0.2	1.08%
C22:5n6	NA			NA			6.76	6.15	90.97%	2.97	0.15	5.17%
C22:6n3	64.1	2.2	3.41%	58.2	2.0	3.41%	115	99	85.60%	60.5	0.2	0.35%
C24:0	6.01	0.21	3.50%	NA	NA	NA	14.6	0.3	2.06%	6.10	0.47	7.75%
C24:1n9	17.3	0.7	4.30%	NA	NA	NA	36.6	14.7	40.25%	18.7	1.1	5.65%
List any additional information such as known coelutions or results for additional fatty acids below:												
Code	Lab 1			Lab 2			Lab 3 ^a			Lab 4		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0										0.453	0.072	15.93%
C10:1n1												
C11:0												
C12:0				12.0	0.2	2.01%				2.51	0.17	6.60%
C12:1										0.318	0.047	14.84%
C12:1n7												
C13:0												
C14:2												
C15:0												
C16:1n7t												
C16:1n9												
C16:2												
C17:0										6.65	0.12	1.73%
C17:1												
18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3												
C19:0												
C20:3n3										1.60	0.42	26.33%
C20:3n9										2.61	0.14	5.53%
C20:4n3												
C21:0												
C22:2n6										1.13	0.25	22.26%
C23:0										3.67	0.48	13.09%
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	NA			1.04	0.00	0.11%	0.977	0.003	0.28%	1.05	0.01	0.62%
^a Reported as µM												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Code	Lab 5			Lab 6			Lab 7 ^a			Lab 8 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	14.8	0.2	1.66%	16.4	1.1	6.52%	NA			19.8	0.6	2.99%
C14:1n5	0.859	0.057	6.69%	NA			NA			1.50	0.05	3.54%
C16:0	493	5	1.04%	499	8	1.59%	NA			624	8	1.23%
C16:1n7	41.3	0.6	1.38%	2.61	0.20	7.65%	NA			56.3	1.9	3.37%
C18:0	183	2	1.01%	245	13	5.11%	NA			216	5	2.35%
C18:1n7	33.0	0.5	1.37%	25.5	1.6	6.09%	NA			37.3	0.6	1.54%
C18:1n9	395	4	0.95%	360	7	1.88%	NA			559	8	1.51%
C18:2n6	711	7	1.03%	640	5	0.74%	NA			920	11	1.20%
C18:3n3	13.6	0.1	0.54%	1.00	0.12	11.88%	NA			17.1	0.7	4.29%
C18:3n6	9.01	0.22	2.47%	0.897	0.112	12.54%	NA			13.0	0.5	3.92%
C20:0	3.94	0.24	6.04%	7.42	0.24	3.19%	NA			0.929	0.038	4.08%
C20:1n9	2.46	0.06	2.32%	10.7	0.1	1.13%	NA			2.64	0.34	12.94%
C20:2n6	5.69	0.18	3.13%	3.43	0.06	1.87%	NA			7.48	0.51	6.78%
C20:3n6	37.9	0.5	1.21%	NA			NA			48.8	0.9	1.77%
C20:4n6	126	1	1.11%	117	1	0.68%	218	5	2.08%	207	6	2.68%
C20:5n3	31.0	0.4	1.32%	1.39	0.03	2.09%	41.6	0.5	1.11%	44.5	1.6	3.66%
C22:0	9.35	0.36	3.90%	36.0	0.2	0.48%	NA			0.373	0.037	9.81%
C22:1n9	0.97	0.12	12.90%	<LOQ			NA			NA		
C22:4n6	3.83	0.04	0.96%	<LOQ			NA			5.57	0.30	5.41%
C22:5n3	16.0	0.1	0.34%	8.55	0.27	3.11%	NA			21.4	1.0	4.44%
C22:5n6	2.37	0.16	6.95%	<LOQ			NA			3.45	0.29	8.52%
C22:6n3	51.3	0.5	1.02%	49.0	0.6	1.17%	110	2	2.15%	79.8	3.4	4.23%
C24:0	9.50	0.51	5.32%	55.5	0.3	0.62%	NA			0.351	0.077	21.86%
C24:1n9	15.3	0.5	3.30%	7.29	0.14	1.96%	NA			<LOD		

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 5			Lab 6			Lab 7 ^a			Lab 8 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0												
C10:1n1												
C11:0												
C12:0				0.298	0.184	61.77%				1.78	0.07	4.21%
C12:1												
C12:1n7												
C13:0												
C14:2												
C15:0				1.28	0.06	4.56%				4.09	0.23	5.69%
C16:1n7t												
C16:1n9												
C16:2												
C17:0				3.72	0.04	1.07%				6.99	0.35	5.08%
C17:1				2.14	0.21	9.93%						
18:1n7t												
C18:1n9t				2.75	0.08	3.04%						
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6										4.10	0.20	4.81%
C18:4n3										0.786	0.058	7.38%
C19:0										0.488	0.007	1.50%
C20:3n3										0.692	0.059	8.53%
C20:3n9												
C20:4n3										2.38	0.16	6.75%
C21:0										1.55	0.07	4.63%
C22:2n6												
C23:0				1.50	0.13	8.87%						
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	1.00	0.00	0.00%	0.993	0.061	6.15%	NA			1.03	0.00	0.00%

^a Reported as µM

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Table 4 (cont). Interlaboratory data received for Unknown 02 (µg/g)

Code	Lab 9 ^a			Lab 10 ^a			Lab 11 ^a			Lab 12		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	NA			17.8	0.2	1.22%	16.5	2.4	14.69%	15.6	0.2	0.98%
C14:1n5	NA			1.19	0.01	1.15%	1.61	0.19	11.88%	NA		
C16:0	548	10	1.81%	545	10	1.81%	512	50	9.72%	501	10	2.01%
C16:1n7	27.0	0.1	0.51%	46.3	0.7	1.50%	47.9	4.1	8.61%	40.6	0.7	1.72%
C18:0	182	5	2.78%	160	3	2.05%	190	18	9.55%	176	5	2.60%
C18:1n7	NA			31.9	0.3	1.00%	49.7	5.9	11.93%	Other		
C18:1n9	505	28	5.55%	434	8	1.93%	447	19	4.19%	408	11	2.73%
C18:2n6	829	51	6.19%	810	17	2.11%	817	134	16.35%	742	28	3.74%
C18:3n3	21.8	0.7	3.22%	16.9	0.3	1.78%	16.9	1.7	9.84%	14.3	0.4	2.65%
C18:3n6	NA			10.6	0.2	1.59%	11.3	1.1	9.57%	9.67	0.25	2.60%
C20:0	NA			5.26	0.15	2.82%	5.96	0.98	16.43%	NA		
C20:1n9	NA			2.70	0.03	1.21%	NA			NA		
C20:2n6	NA			5.65	0.05	0.97%	NA			NA		
C20:3n6	NA			38.8	0.7	1.82%	42.1	4.3	10.26%	38.0	0.5	1.37%
C20:4n6	155	9	5.86%	151	2	1.34%	149	13	8.45%	132	7	5.49%
C20:5n3	33.5	1.4	4.07%	37.8	1.0	2.54%	41.6	3.9	9.35%	34.2	0.8	2.19%
C22:0	NA			14.5	0.4	2.45%	13.0	1.8	13.98%	10.1	0.2	2.28%
C22:1n9	NA			NA			0.400	0.059	14.85%	NA		
C22:4n6	NA			4.80	0.05	1.00%	6.97	0.63	9.09%	4.70	0.44	9.27%
C22:5n3	55.5	1.3	2.40%	20.2	0.3	1.27%	24.6	2.3	9.41%	18.5	0.4	1.90%
C22:5n6	NA			2.84	0.07	2.45%	3.29	0.27	8.31%	NA		
C22:6n3	NA			70.8	1.8	2.59%	57.1	9.4	16.43%	60.2	0.9	1.49%
C24:0	NA			13.7	0.4	2.64%	14.3	1.7	12.13%	9.87	0.25	2.55%
C24:1n9	NA			26.0	0.2	0.75%	29.3	3.3	11.19%	16.5	0.9	5.72%

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 9 ^a			Lab 10 ^a			Lab 11 ^a			Lab 12		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0							0.660	0.072	10.91%			
C10:0				0.276	0.013	4.58%	0.823	0.232	28.18%			
C10:1n1							0.865	0.109	12.66%			
C11:0												
C12:0				1.10	0.03	3.13%	1.91	0.45	23.64%			
C12:1							0.745	0.110	14.78%			
C12:1n7							0.643	0.090	14.07%			
C13:0												
C14:2							0.173	0.004	2.25%			
C15:0				3.6	0.1	1.67%	3.31	0.46	13.85%			
C16:1n7t												
C16:1n9							7.13	0.69	9.70%			
C16:2							0.761	0.095	12.47%			
C17:0				6.78	0.07	1.02%	6.05	1.13	18.75%			
C17:1												
18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3				0.486	0.078	16.08%						
C19:0							0.720	0.144	20.05%			
C20:3n3												
C20:3n9				1.74	0.03	1.74%	5.30	0.58	11.03%			
C20:4n3												
C21:0							0.428	0.037	8.67%			
C22:2n6												
C23:0				7.10	0.21	2.93%	9.20	0.97	10.59%			
C26:0							0.151	0.021	13.93%			
C26:1							0.430	0.071	16.54%			
PhA							0.319	0.050	15.56%			
PrA							0.096	0.010	10.83%			
density (g/mL)	NA			0.966	0.003	0.27%	NA			1.00	0.00	0.29%

^a Reported as µM

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Code	Lab 13			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C14:0	24.7	0.8	3.32%	56.7	35.4	62.43%	19.2	22.3	12
C14:1n5	1.76	0.08	4.58%	2.17	1.57	72.33%	1.50	1.59	9
C16:0	790	17	2.13%	1028	215	20.95%	538	580	13
C16:1n7	68.9	2.6	3.75%	123	7	5.38%	46.3	48.1	13
C18:0	270	1	0.39%	624	177	28.42%	190	230	13
C18:1n7	59.6	1.3	2.18%	1187	266	22.43%	39.7	159	10
C18:1n9	677	15	2.28%	799	230	28.79%	441	495	13
C18:2n6	1314	43	3.28%	754	262	34.72%	801	826	13
C18:3n3	28.0	0.6	2.16%	40.4 ^c	5.0	12.40%	16.1	16.7	12
C18:3n6	17.8	0.5	2.96%	NA			10.4	11.8	10
C20:0	1.75	0.37	21.26%	13.7	1.1	7.68%	4.61	5.43	10
C20:1n9	4.81	0.15	3.09%	15.1	2.1	13.87%	3.71	5.65	9
C20:2n6	14.7	0.1	0.81%	19.6	2.4	12.50%	6.11	8.94	7
C20:3n6	67.9	0.8	1.24%	157	39	25.00%	40.5	58.1	10
C20:4n6	240	4	1.78%	574	191	33.24%	150	192	14
C20:5n3	61.9	1.2	1.88%	181	44	24.36%	36.8	48.9	14
C22:0	1.64	0.18	11.17%	69.5	5.6	8.08%	10.1	17.0	11
C22:1n9	0.686	0.160	23.30%	32.3	18.0	55.69%	1.05	5.79	7
C22:4n6	7.72	0.08	0.97%	39.5	7.3	18.41%	6.27	9.74	10
C22:5n3	31.4	0.3	0.96%	27.9	13.9	49.88%	20.7	24.6	13
C22:5n6	4.53	0.05	1.21%	115	10	8.68%	3.37	17.7	8
C22:6n3	103.3	1.3	1.29%	347	82	23.66%	64.1	94.4	13
C24:0	1.80	0.45	25.06%	102	10	9.83%	9.87	21.2	11
C24:1n9	1.88	0.10	5.21%	123	31	25.51%	18.0	29.2	10

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 13			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C6:0				0.119	0.049	41.18%	0.119	0.119	1
C8:0				0.126	0.017	13.49%	0.393	0.393	2
C10:0				0.248	0.047	18.95%	0.365	0.450	4
C10:1n1							0.865	0.865	1
C11:0				0.0039	0.0010	25.64%	0.0039	0.0039	1
C12:0				1.38	0.18	13.04%	1.78	2.99	7
C12:1							0.532	0.532	2
C12:1n7							0.643	0.643	1
C13:0				0.0319	0.0040	12.54%	0.032	0.032	1
C14:2							0.173	0.173	1
C15:0				5.12	0.50	9.77%	3.60	3.48	5
C16:1n7t				158	9	5.70%	158	158	1
C16:1n9							7.13	7.13	1
C16:2							0.761	0.761	1
C17:0				1.20	0.19	15.83%	6.35	5.23	6
C17:1							2.14	2.14	1
18:1n7t				902	5	0.55%	902	902	1
C18:1n9t				950	56	5.89%	476	476	2
C18:1n12				741	50	6.75%	741	741	1
C18:1n12t				1119	5	0.45%	1119	1119	1
9c,11t-C18:2n6							4.10	4.10	1
C18:4n3							0.636	0.636	2
C19:0							0.604	0.604	2
C20:3n3							1.14	1.14	2
C20:3n9							2.61	3.22	3
C20:4n3							2.38	2.38	1
C21:0				3.18	0.16	5.03%	1.55	1.72	3
C22:2n6							1.13	1.13	1
C23:0							5.39	5.37	4
C26:0							0.151	0.151	1
C26:1							0.430	0.430	1
PhA							0.319	0.319	1
PrA							0.096	0.096	1
density (g/mL)	1.04	0.00	0.22%	NA			1.00	1.01	9

^a Reported as µM

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Code	Lab 1 ^a			Lab 2 ^a			Lab 3			Lab 4 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	81.4	4.9	6.04%	91.4	3.5	3.79%	103	1	0.56%	102	1	0.55%
C14:1n5	4.92	0.13	2.74%	NA			11.3	4.0	35.66%	6.95	0.16	2.27%
C16:0	1850	127	6.85%	1551	59	3.81%	2316	47	2.04%	2211	15	0.68%
C16:1n7	143	3	2.26%	103	3	2.71%	232	76	32.87%	204	1	0.60%
C18:0	557	37	6.69%	611	11	1.76%	800	20	2.50%	703	6	0.82%
C18:1n7	128	7	5.42%	NA			311	186	59.85%	157	0	0.26%
C18:1n9	1197	50	4.14%	1073	26	2.40%	2691	1643	61.07%	1644	12	0.74%
C18:2n6	2625	228	8.70%	1518	18	1.18%	4372	2784	63.67%	3006	23	0.78%
C18:3n3	52.0	2.7	5.22%	33.4	0.7	2.05%	112	89	79.65%	57.6	1.6	2.82%
C18:3n6	29.2	1.4	4.81%	NA			96.3	80.3	83.31%	38.5	0.4	1.05%
C20:0	10.3	0.4	4.34%	NA			25.3	0.6	2.28%	13.4	0.2	1.38%
C20:1n9	11.9	0.8	6.80%	18.8	0.2	1.05%	NA			10.8	0.3	3.24%
C20:2n6	NA			NA			NA			20.8	0.4	2.05%
C20:3n6	NA			113	2	1.72%	247	202	81.82%	134	0	0.16%
C20:4n6	424	26	6.20%	359	6	1.77%	807	676	83.82%	482	2	0.38%
C20:5n3	109	8	7.67%	123	13	10.77%	234	202	86.36%	121	0	0.36%
C22:0	24.6	1.7	6.92%	NA			47.1	1.0	2.13%	24.0	1.2	4.89%
C22:1n9	3.09	0.14	4.46%	NA			10.7	4.6	43.30%	4.51	0.49	10.93%
C22:4n6	NA			31.5	0.8	2.40%	29.3	24.8	84.70%	13.6	1.0	7.14%
C22:5n3	61.3	4.1	6.63%	65.4	1.9	2.91%	108	92	85.29%	58.8	0.6	1.08%
C22:5n6	NA			NA			20.0	18.2	90.97%	9.45	0.49	5.17%
C22:6n3	195	7	3.41%	185	6	3.41%	343	294	85.60%	194	1	0.35%
C24:0	16.3	0.6	3.50%	NA			38.6	0.8	2.06%	17.4	1.4	7.75%
C24:1n9	47.3	2.0	4.30%	NA			97.7	39.3	40.25%	53.7	3.0	5.65%
List any additional information such as known coelutions or results for additional fatty acids below:												
Code	Lab 1 ^a			Lab 2 ^a			Lab 3			Lab 4 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0										2.77	0.44	15.93%
C10:1n1												
C11:0												
C12:0				62.4	1.3	2.01%				13.2	0.9	6.60%
C12:1										1.69	0.25	14.84%
C12:1n7												
C13:0												
C14:2												
C15:0												
C16:1n7t												
C16:1n9												
C16:2												
C17:0										25.9	0.4	1.74%
C17:1												
18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3												
C19:0												
C20:3n3										5.49	1.45	26.33%
C20:3n9										8.98	0.50	5.53%
C20:4n3												
C21:0												
C22:2n6										3.53	0.79	22.26%
C23:0										10.9	1.4	13.09%
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	NA			1.04	0.00	0.11%	0.977	0.003	0.28%	1.05	0.01	0.62%
^a Reported as µg/g												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Code	Lab 5 ^a			Lab 6 ^a			Lab 7			Lab 8		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	64.9	1.1	1.66%	71.3	4.6	6.52%	NA			88.8	2.7	2.99%
C14:1n5	3.79	0.25	6.69%	NA			NA			6.77	0.24	3.54%
C16:0	1924	20	1.04%	1933	31	1.59%	NA			2493	31	1.23%
C16:1n7	162	2	1.38%	137	5	3.50%	NA			227	8	3.37%
C18:0	644	7	1.01%	855	44	5.11%	NA			777	18	2.35%
C18:1n7	117	2	1.37%	89.6	5.5	6.09%	NA			135	2	1.54%
C18:1n9	1399	13	0.95%	1267	24	1.88%	NA			2027	31	1.51%
C18:2n6	2537	26	1.03%	2265	17	0.74%	NA			3363	40	1.20%
C18:3n3	48.9	0.3	0.54%	3.55	0.42	11.88%	NA			62.9	2.7	4.29%
C18:3n6	32.3	0.8	2.47%	3.20	0.40	12.54%	NA			47.8	1.9	3.92%
C20:0	12.6	0.8	6.04%	23.6	0.8	3.19%	NA			3.05	0.12	4.08%
C20:1n9	7.94	0.18	2.32%	34.2	0.4	1.13%	NA			8.71	1.13	12.94%
C20:2n6	18.4	0.6	3.13%	11.1	0.2	1.87%	NA			24.9	1.7	6.78%
C20:3n6	123	1	1.21%	NA			NA			163	3	1.77%
C20:4n6	414	5	1.11%	382	3	0.68%	715	15	2.08%	696	19	2.68%
C20:5n3	102	1	1.32%	74.01	0.43	0.58%	138	2	1.11%	151	6	3.66%
C22:0	27.4	1.1	3.90%	105	1	0.48%	NA			1.12	0.11	9.81%
C22:1n9	2.85	0.37	12.90%	<LOQ			NA			NA		
C22:4n6	11.5	0.1	0.96%	<LOQ			NA			17.2	0.9	5.41%
C22:5n3	48.3	0.2	0.34%	25.7	0.8	3.11%	NA			66.4	3.0	4.44%
C22:5n6	7.17	0.50	6.95%	<LOQ			NA			10.7	0.9	8.52%
C22:6n3	156	2	1.02%	148	2	1.17%	336	7	2.15%	249	11	4.23%
C24:0	25.8	1.4	5.32%	11	0	1.20%	NA			1.0	0.2	21.86%
C24:1n9	41.6	1.4	3.30%	19.8	0.4	1.96%	NA			<LOD		

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 5 ^a			Lab 6 ^a			Lab 7			Lab 8		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0												
C10:1n1												
C11:0												
C12:0				1.48	0.91	61.77%				9.09	0.38	4.21%
C12:1												
C12:1n7												
C13:0												
C14:2												
C15:0				5.23	0.24	4.56%				17.3	1.0	5.69%
C16:1n7t												
C16:1n9												
C16:2												
C17:0				13.7	0.1	1.07%				26.5	1.3	5.08%
C17:1				7.93	0.79	9.93%						
18:1n7t												
C18:1n9t				9.67	0.29	3.04%						
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6										15.0	0.7	4.81%
C18:4n3										2.91	0.22	7.38%
C19:0										1.68	0.03	1.50%
C20:3n3										2.31	0.20	8.53%
C20:3n9												
C20:4n3										8.00	0.54	6.75%
C21:0										4.87	0.23	4.63%
C22:2n6												
C23:0				4.21	0.37	8.87%						
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	1.00	0.00	0.00%	0.993	0.061	6.15%	NA			1.03	0.00	0.00%

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Code	Lab 9			Lab 10			Lab 11			Lab 12 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	NA			75.4	0.9	1.22%	72.5	10.6	14.69%	68.7	0.7	0.98%
C14:1n5	NA			5.06	0.06	1.15%	7.12	0.85	11.88%	NA		
C16:0	2136	39	1.81%	2052	37	1.81%	1995	194	9.72%	1962	39	2.01%
C16:1n7	106	1	0.51%	176	3	1.50%	188	16	8.61%	160	3	1.72%
C18:0	641	18	2.78%	544	11	2.05%	669	64	9.55%	621	16	2.60%
C18:1n7	NA			109	1	1.00%	176	21	11.93%	NA		
C18:1n9	1789	99	5.55%	1483	29	1.93%	1582	66	4.19%	1450	40	2.73%
C18:2n6	2954	183	6.19%	2788	59	2.11%	2913	476	16.35%	2655	99	3.74%
C18:3n3	78.2	2.5	3.22%	58.7	1.0	1.78%	60.6	6.0	9.84%	51.4	1.4	2.65%
C18:3n6	NA			36.7	0.6	1.59%	40.7	3.9	9.57%	34.8	0.9	2.60%
C20:0	NA			16.2	0.5	2.82%	19.1	3.1	16.43%	NA		
C20:1n9	NA			8.39	0.10	1.21%	NA			NA		
C20:2n6	NA			17.7	0.2	0.97%	NA			NA		
C20:3n6	NA			122	2	1.82%	137	14	10.26%	124	2	1.37%
C20:4n6	508	30	5.86%	478	6	1.34%	489	41	8.45%	434	24	5.49%
C20:5n3	111	5	4.07%	121	3	2.54%	137	13	9.35%	114	2	2.19%
C22:0	NA			41.1	1.0	2.45%	38.2	5.3	13.98%	29.9	0.7	2.28%
C22:1n9	NA			NA			1.18	0.18	14.85%	NA		
C22:4n6	NA			14.0	0.1	1.00%	21.0	1.9	9.09%	14.2	1.3	9.27%
C22:5n3	168	4	2.40%	58.9	0.7	1.27%	74.4	7.0	9.41%	56.0	1.1	1.90%
C22:5n6	NA			8.31	0.20	2.45%	10.0	0.8	8.31%	NA		
C22:6n3	NA			208	5	2.59%	174	29	16.43%	184	3	1.49%
C24:0	NA			35.9	0.9	2.64%	38.8	4.7	12.13%	26.9	0.7	2.55%
C24:1n9	NA			68.6	0.5	0.75%	79.8	8.9	11.19%	45.2	2.6	5.72%

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 9			Lab 10			Lab 11			Lab 12 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0							4.57	0.50	10.91%			
C10:0				1.55	0.07	4.58%	4.78	1.35	28.18%			
C10:1n1							5.08	0.64	12.66%			
C11:0												
C12:0				5.28	0.17	3.13%	9.53	2.25	23.64%			
C12:1							3.76	0.56	14.78%			
C12:1n7							3.24	0.46	14.07%			
C13:0												
C14:2							0.770	0.017	2.25%			
C15:0				14.4	0.2	1.67%	13.7	1.9	13.85%			
C16:1n7t												
C16:1n9							28.0	2.7	9.70%			
C16:2							3.01	0.38	12.47%			
C17:0				24.2	0.2	1.02%	22.4	4.2	18.75%			
C17:1												
18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3				1.70	0.27	16.08%						
C19:0							2.41	0.48	20.05%			
C20:3n3												
C20:3n9				5.49	0.10	1.74%	17.3	1.9	11.03%			
C20:4n3												
C21:0							1.31	0.11	8.67%			
C22:2n6												
C23:0				19.3	0.6	2.93%	26.0	2.7	10.59%			
C26:0							0.380	0.053	13.93%			
C26:1							1.09	0.18	16.54%			
PhA							1.02	0.16	15.56%			
PrA							0.320	0.035	10.83%			
density (g/mL)	NA			0.966	0.003	0.27%	NA			1.00	0.00	0.29%

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Code	Lab 13 ^a			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C14:0	112	4	3.32%	248	155	62.43%	85.1	98.3	12
C14:1n5	8.07	0.37	4.58%	9.58	6.93	72.33%	6.95	7.07	9
C16:0	3199	68	2.13%	4009	840	20.95%	2052	2279	13
C16:1n7	281	11	3.75%	484	26	5.38%	176	200	13
C18:0	984	4	0.39%	2194	624	28.42%	669	815	13
C18:1n7	219	5	2.18%	4202	943	22.43%	146	564	10
C18:1n9	2489	57	2.28%	2828	814	28.79%	1582	1763	13
C18:2n6	4866	159	3.28%	2688	933	34.72%	2788	2966	13
C18:3n3	105	2	2.16%	145 ^c	18	12.40%	58.2	60.3	12
C18:3n6	66.3	2.0	2.96%	NA			37.6	42.6	10
C20:0	5.82	1.24	21.26%	43.9	3.4	7.68%	14.8	17.3	10
C20:1n9	16.1	0.5	3.09%	48.5	6.7	13.87%	11.9	18.4	9
C20:2n6	49.3	0.4	0.81%	63.4	7.9	12.50%	20.8	29.4	7
C20:3n6	230	3	1.24%	514	128	25.00%	135	191	10
C20:4n6	818	15	1.78%	1884	626	33.24%	486	635	14
C20:5n3	212	4	1.88%	597	145	24.36%	122	167	14
C22:0	5.01	0.56	11.17%	204.1	16.5	8.08%	29.9	49.8	11
C22:1n9	2.10	0.49	23.30%	95.32	53.08	55.69%	3.09	17.10	7
C22:4n6	24.1	0.2	0.97%	118.9	21.9	18.41%	19.1	29.5	10
C22:5n3	98.6	0.9	0.96%	84.4	42.1	49.88%	65.4	75.0	13
C22:5n6	14.2	0.2	1.21%	347.86	30.19	8.68%	10.3	53.5	8
C22:6n3	327	4	1.29%	1057	250	23.66%	195	289	13
C24:0	5.09	1.27	25.06%	276.8	27.2	9.83%	25.8	44.9	11
C24:1n9	5.32	0.28	5.21%	336.8	85.9	25.51%	50.5	79.6	10

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 13 ^a			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C6:0				1.02	0.42	41.18%	1.02	1.02	1
C8:0				0.873	0.118	13.49%	2.72	2.72	2
C10:0				1.44	0.27	18.95%	2.16	2.63	4
C10:1n1							5.08	5.08	1
C11:0				0.0209	0.0054	25.64%	0.02	0.02	1
C12:0				6.89	0.90	13.04%	9.09	15.4	7
C12:1							2.72	2.72	2
C12:1n7							3.24	3.24	1
C13:0				0.149	0.019	12.54%	0.15	0.15	1
C14:2							0.770	0.770	1
C15:0				21.1	2.1	9.77%	14.4	14.3	5
C16:1n7t				621	35	5.70%	621.00	621.00	1
C16:1n9							28.0	28.0	1
C16:2							3.01	3.01	1
C17:0				4.44	0.70	15.83%	23.3	19.5	6
C17:1							7.93	7.93	1
18:1n7t				3193	18	0.55%	3193.15	3193.15	1
C18:1n9t				3363	198	5.89%	1686.37	1686.37	2
C18:1n12				2623	177	6.75%	2623.19	2623.19	1
C18:1n12t				3961	18	0.45%	3961.34	3961.34	1
9c,11t-C18:2n6							15.0	15.0	1
C18:4n3							2.31	2.31	2
C19:0							2.05	2.05	2
C20:3n3							3.90	3.90	2
C20:3n9							8.98	10.6	3
C20:4n3							8.00	8.00	1
C21:0				9.74	0.49	5.03%	4.87	5.30	3
C22:2n6							3.53	3.53	1
C23:0							15.1	15.1	4
C26:0							0.380	0.380	1
C26:1							1.09	1.09	1
PhA							1.02	1.02	1
PrA							0.320	0.320	1
density (g/mL)	1.04	0.00	0.22%	NA			1.00	1.01	9

^a Reported as $\mu\text{g/g}$

^b Reported in mg/mL

^c α and γ linolenic acid probably coeluting

Table 6. Interlaboratory data received for Unknown 03 (µg/g)												
Code	Lab 1			Lab 2			Lab 3 ^a			Lab 4		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	55.1	3.7	6.68%	38.0	1.1	2.85%	53.9	0.8	1.56%	55.9	0.9	1.56%
C14:1n5	3.29	0.33	9.90%	NA			4.78	0.13	2.79%	3.59	0.12	3.32%
C16:0	1041	45	4.36%	610	18	2.89%	945	14	1.52%	921	2	0.22%
C16:1n7	52.1	2.8	5.38%	27.1	0.9	3.29%	52.6	1.6	2.98%	53.1	0.2	0.36%
C18:0	337	11	3.26%	259	4	1.50%	367	3	0.88%	324	9	2.90%
C18:1n7	61.6	3.5	5.63%	NA			77.7	13.2	17.00%	54.8	0.3	0.55%
C18:1n9	767	39	5.05%	486	10	2.02%	760	12	1.54%	711	3	0.49%
C18:2n6	1152	65	5.65%	545	14	2.63%	1058	14	1.37%	1145	5	0.40%
C18:3n3	20.9	0.8	3.97%	10.9	0.2	1.94%	24.1	0.4	1.80%	20.5	0.1	0.44%
C18:3n6	19.5	0.4	1.93%	NA			28.1	0.6	2.11%	20.2	0.1	0.65%
C20:0	6.23	0.38	6.08%	NA			12.2	0.2	1.51%	6.69	0.34	5.04%
C20:1n9	6.44	0.57	8.90%	6.17	0.08	1.28%	NA			4.34	0.11	2.59%
C20:2n6	NA			NA			NA			8.19	0.27	3.31%
C20:3n6	NA			47.8	1.2	2.49%	60.7	0.7	1.07%	61.2	0.2	0.33%
C20:4n6	258	15	5.87%	160	4	2.30%	211	4	2.07%	237	4	1.58%
C20:5n3	25.4	1.6	6.30%	26.6	1.4	5.31%	21.5	0.6	2.99%	20.1	0.2	1.10%
C22:0	15.7	1.1	7.24%	NA			28.9	0.5	1.60%	15.4	0.5	3.33%
C22:1n9	1.17	0.07	5.60%	NA			2.08	0.00	0.00%	1.33	0.19	14.12%
C22:4n6	NA			11.6	0.2	2.09%	8.04	0.39	4.88%	6.81	0.13	1.91%
C22:5n3	19.9	0.8	4.08%	18.1	0.6	3.56%	18.2	0.9	4.90%	17.2	0.4	2.23%
C22:5n6	NA			NA			8.90	0.20	2.19%	6.64	0.14	2.07%
C22:6n3	102	6	5.64%	70.1	3.3	4.74%	81.0	1.8	2.28%	84.3	0.5	0.54%
C24:0	13.8	0.6	4.45%	NA			26.6	0.3	1.18%	12.7	0.2	1.77%
C24:1n9	23.5	1.6	6.76%	NA			33.1	1.1	3.46%	25.7	2.5	9.72%
List any additional information such as known coelutions or results for additional fatty acids below:												
Code	Lab 1			Lab 2			Lab 3 ^a			Lab 4		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0										2.11	0.72	33.93%
C10:1n1												
C11:0												
C12:0				13.3	0.1	0.74%				7.10	1.37	19.36%
C12:1										0.528	0.048	9.06%
C12:1n7												
C13:0												
C14:2												
C15:0												
C16:1n7t												
C16:1n9												
C16:2												
C17:0										13.0	0.4	2.73%
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3												
C19:0												
C20:3n3										1.39	0.39	28.15%
C20:3n9										2.68	0.18	6.64%
C20:4n3												
C21:0												
C22:2n6										1.46	0.23	15.61%
C23:0										6.52	0.32	4.90%
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	NA			1.05	0.01	0.67%	0.978	0.003	0.29%	1.06	0.01	0.67%
^a Reported as µM												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Code	Lab 5			Lab 6			Lab 7 ^a			Lab 8 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	40.4	1.6	4.04%	39.4	1.9	4.91%	NA			50.3	2.1	4.12%
C14:1n5	2.46	0.13	5.45%	NA			NA			3.35	0.13	3.75%
C16:0	831	11	1.38%	796	38	4.79%	NA			1011	41	4.05%
C16:1n7	43.6	0.7	1.51%	37.3	1.7	4.54%	NA			52.3	2.1	4.04%
C18:0	306	3	1.13%	359	27	7.51%	NA			356	13	3.68%
C18:1n7	37.7	0.4	1.04%	30.0	1.9	6.22%	NA			39.6	1.8	4.63%
C18:1n9	643	6	0.88%	569	26	4.58%	NA			830	30	3.59%
C18:2n6	1024	9	0.84%	891	41	4.60%	NA			1191	47	3.95%
C18:3n3	18.5	0.1	0.36%	2.10	0.09	4.18%	NA			20.9	0.8	3.59%
C18:3n6	18.3	0.2	0.84%	9.21	0.27	2.95%	NA			23.4	0.8	3.49%
C20:0	6.54	0.10	1.51%	9.29	0.56	6.05%	NA			1.51	0.03	2.28%
C20:1n9	3.65	0.10	2.87%	14.2	0.6	4.30%	NA			3.36	0.13	3.93%
C20:2n6	7.72	0.08	0.99%	4.88	0.26	5.22%	NA			9.05	0.45	5.00%
C20:3n6	60.2	0.6	0.92%	NA			NA			75.9	3.7	4.87%
C20:4n6	216	2	0.87%	190	9	4.56%	306	7	2.29%	334	11	3.37%
C20:5n3	18.5	0.2	0.97%	11.0	0.4	3.83%	23.3	0.1	0.42%	24.3	0.9	3.56%
C22:0	16.9	0.2	1.46%	59.4	2.7	4.52%	NA			0.62	0.05	8.03%
C22:1n9	0.913	0.096	10.48%	<LOQ			NA			NA		
C22:4n6	6.11	0.08	1.31%	0.167	0.120	71.76%	NA			7.83	0.52	6.65%
C22:5n3	15.2	0.2	1.43%	7.03	0.35	4.92%	NA			16.3	0.1	0.69%
C22:5n6	6.02	0.10	1.66%	0.061	0.046	75.04%	NA			8.36	0.33	3.96%
C22:6n3	73.6	0.8	1.07%	66.3	3.2	4.76%	110	1	1.20%	105	3	3.06%
C24:0	17.5	0.3	1.95%	9.40	0.24	2.55%	NA			0.747	0.011	1.47%
C24:1n9	20.6	0.4	2.03%	9.90	0.33	3.37%	NA			<LOD		

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 5			Lab 6			Lab 7 ^a			Lab 8 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0												
C10:1n1												
C11:0												
C12:0				2.16	0.14	6.31%				5.01	0.24	4.85%
C12:1												
C12:1n7												
C13:0												
C14:2												
C15:0				7.81	0.62	7.88%				11.4	0.4	3.18%
C16:1n7t												
C16:1n9												
C16:2												
C17:0				8.49	0.56	6.58%				12.4	0.4	3.62%
C17:1				2.88	0.32	11.09%						
C18:1n7t												
C18:1n9t				7.02	0.31	4.37%						
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6										8.82	0.36	4.13%
C18:4n3										1.08	0.08	7.75%
C19:0										0.898	0.021	2.39%
C20:3n3										1.08	0.12	10.68%
C20:3n9												
C20:4n3										2.83	0.04	1.36%
C21:0										0.877	0.223	25.46%
C22:2n6												
C23:0				4.08	0.16	3.93%						
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	1.00	0.00	0.00%	0.980	0.000	0.00%	NA			1.03	0.00	0.00%

^aReported as µM

^bReported in mg/mL

^calpha and gamma linolenic acid probably coeluting

Table 6 (Cont). Interlaboratory data received for Unknown 03 (µg/g)

Code	Lab 9 ^a			Lab 10 ^a			Lab 11 ^a			Lab 12		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	NA			48.9	1.4	2.77%	41.8	0.5	1.16%	44.5	1.6	3.65%
C14:1n5	NA			3.01	0.02	0.75%	3.44	0.17	4.93%	NA		
C16:0	1039	4	0.35%	941	23	2.49%	869	38	4.43%	885	32	3.56%
C16:1n7	27.1	0.2	0.64%	48.0	0.9	1.95%	46.7	4.8	10.30%	44.7	1.7	3.90%
C18:0	329	4	1.32%	271	6	2.35%	359	8	2.22%	312	7	2.25%
C18:1n7	NA			34.2	0.4	1.04%	56.9	6.5	11.36%	34.7	0.9	2.64%
C18:1n9	837	19	2.27%	708	19	2.72%	679	26	3.89%	689	29	4.19%
C18:2n6	1228	12	0.95%	1153	36	3.16%	1009	159	15.76%	1097	38	3.45%
C18:3n3	21.1	0.0	0.17%	23.0	0.4	1.84%	21.3	1.4	6.79%	19.5	0.4	1.94%
C18:3n6	NA			21.0	0.5	2.43%	18.8	1.1	5.84%	19.4	0.4	1.81%
C20:0	NA			9.15	0.31	3.34%	9.23	0.71	7.71%	NA		
C20:1n9	NA			3.80	0.19	4.94%				NA		
C20:2n6	NA			7.93	0.51	6.44%				NA		
C20:3n6	NA			61.5	1.3	2.05%	60.9	6.9	11.30%	60.3	1.3	2.23%
C20:4n6	247	5	2.20%	254	3	1.35%	230	20	8.59%	237	11	4.47%
C20:5n3	18.7	0.5	2.73%	21.6	0.5	2.53%	23.9	1.6	6.54%	20.2	0.5	2.44%
C22:0	NA			27.2	0.5	1.74%	23.3	0.3	1.43%	19.4	0.8	4.32%
C22:1n9	NA			NA			0.313	0.056	18.00%	NA		
C22:4n6	NA			7.38	0.30	4.03%	10.4	1.4	13.36%	6.67	0.25	3.77%
C22:5n3	72.5	3.3	4.58%	18.5	0.7	3.62%	22.6	2.1	9.40%	17.2	0.5	2.99%
C22:5n6	NA			7.00	0.15	2.10%	7.39	0.87	11.82%	NA		
C22:6n3	NA			99.0	1.6	1.61%	73.1	16.8	22.94%	83.4	2.6	3.06%
C24:0	NA			26.2	0.4	1.60%	25.7	0.8	3.29%	19.1	0.5	2.62%
C24:1n9	NA			35.2	1.2	3.53%	31.7	4.9	15.38%	21.4	0.2	0.81%

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 9 ^a			Lab 10 ^a			Lab 11 ^a			Lab 12		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0							0.915	0.046	5.05%			
C10:0				1.07	0.04	3.45%	1.77	0.25	13.85%			
C10:1n1							1.08	0.06	6.00%			
C11:0												
C12:0				3.54	0.07	2.07%	4.55	0.36	7.95%			
C12:1							1.01	0.06	5.69%			
C12:1n7							0.875	0.056	6.43%			
C13:0												
C14:2							0.193	0.031	15.99%			
C15:0				11.1	0.3	2.55%	9.00	0.37	4.11%			
C16:1n7t												
C16:1n9							10.1	1.5	14.59%			
C16:2							1.00	0.12	12.25%			
C17:0				12.4	0.4	3.31%	10.1	1.3	13.02%			
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3				0.739	0.074	9.96%						
C19:0							0.960	0.188	19.62%			
C20:3n3												
C20:3n9				1.91	0.11	6.00%	5.57	0.36	6.48%			
C20:4n3												
C21:0							0.630	0.121	19.19%			
C22:2n6												
C23:0				12.2	0.3	2.23%	15.1	3.2	21.28%			
C26:0							0.226	0.007	3.04%			
C26:1							0.182	0.038	20.74%			
PhA							0.690	0.035	5.05%			
PrA							0.149	0.005	3.46%			
density (g/mL)	NA			0.973	0.005	0.46%	NA			1.02	0.02	2.14%

^aReported as µM

^bReported in mg/mL

^calpha and gamma linolenic acid probably coeluting

Table 6 (Cont). Interlaboratory data received for Unknown 03 (µg/g)									
Code	Lab 13			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C14:0	76.3	0.3	0.36%	106	8	7.44%	49.6	54.2	12
C14:1n5	4.97	0.02	0.50%	4.50	0.54	12.08%	3.44	3.71	9
C16:0	1605	2	0.15%	1307	34	2.59%	941	985	13
C16:1n7	85.3	0.2	0.29%	139	8	5.60%	48.0	54.5	13
C18:0	575	5	0.87%	844	13	1.56%	337	384	13
C18:1n7	82.7	0.7	0.86%	1567	63	4.04%	54.8	189	11
C18:1n9	1383	11	0.76%	1111	46	4.11%	711	782	13
C18:2n6	2282	15	0.68%	1102	56	5.10%	1102	1144	13
C18:3n3	44.6	0.2	0.46%	48.4 ^c	2.0	4.07%	20.9	20.6	12
C18:3n6	41.6	0.4	1.02%	NA			19.8	21.9	10
C20:0	4.49	0.20	4.39%	19.1	5.6	29.36%	7.92	8.45	10
C20:1n9	8.61	0.08	0.97%	18.6	1.1	5.68%	6.17	7.69	9
C20:2n6	23.1	0.4	1.56%	23.2	0.8	3.31%	8.19	12.0	7
C20:3n6	132	2	1.35%	208	5	2.32%	61.1	82.8	10
C20:4n6	487	5	1.09%	829	32	3.91%	242	300	14
C20:5n3	43.1	0.3	0.59%	135	4	3.20%	22.4	31.0	14
C22:0	4.04	0.24	5.97%	95.3	27.3	28.63%	19.4	27.8	11
C22:1n9	6.29	0.20	3.22%	24.1	6.2	25.82%	1.33	5.17	7
C22:4n6	14.2	0.5	3.72%	49.8	2.1	4.26%	7.83	11.7	11
C22:5n3	38.3	1.2	3.04%	45.8	1.9	4.14%	18.2	25.1	13
C22:5n6	14.1	0.4	3.10%	110	4	3.67%	7.39	18.8	9
C22:6n3	178	2	1.02%	453	12	2.66%	84.3	121	13
C24:0	3.95	0.48	12.13%	149	43	28.59%	17.5	27.7	11
C24:1n9	2.88	0.22	7.48%	146	47	32.41%	24.6	34.9	10
List any additional information such as known coelutions or results for additional fatty acids below:									
Code	Lab 13			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C6:0				0.178	0.036	20.39%	0.178	0.178	1
C8:0				0.346	0.017	5.03%	0.630	0.630	2
C10:0				1.88	0.59	31.28%	1.82	1.71	4
C10:1n1							1.08	1.08	1
C11:0				0.0133	0.0038	28.49%	0.013	0.013	1
C12:0				6.64	0.73	11.04%	5.01	6.04	7
C12:1							0.770	0.770	2
C12:1n7							0.875	0.875	1
C13:0				0.150	0.027	18.37%	0.150	0.150	1
C14:2							0.193	0.193	1
C15:0				20.1	1.7	8.23%	11.1	11.9	5
C16:1n7t				204	8	4.09%	204	204	1
C16:1n9							10.1	10.1	1
C16:2							1.00	1.00	1
C17:0				3.26	0.16	4.86%	11.3	10.0	6
C17:1							2.88	2.88	1
C18:1n7t				1294	54	4.17%	1294	1294	1
C18:1n9t				1441	44	3.07%	724	724	2
C18:1n12				1213	50	4.13%	1213	1213	1
C18:1n12t				1539	55	3.56%	1539	1539	1
9c,11t-C18:2n6							8.82	8.82	1
C18:4n3							0.911	0.911	2
C19:0							0.929	0.929	2
C20:3n3							1.24	1.24	2
C20:3n9							2.68	3.39	3
C20:4n3							2.83	2.83	1
C21:0				3.34	0.57	17.09%	0.877	1.61	3
C22:2n6							1.46	1.46	1
C23:0							9.36	9.46	4
C26:0							0.226	0.226	1
C26:1							0.182	0.182	1
PhA							0.690	0.690	1
PrA							0.149	0.149	1
density (g/mL)	1.05	0.00	0.22%	NA			1.02	1.01	9
^a Reported as µM									
^b Reported in mg/mL									
^c alpha and gamma linolenic acid probably coeluting									

Code	Lab 1 ^a			Lab 2 ^a			Lab 3			Lab 4 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	241	16	6.68%	175	5	2.85%	231	4	1.56%	259	4	1.56%
C14:1n5	14.5	1.4	9.90%	NA			20.7	0.6	2.79%	16.7	0.6	3.32%
C16:0	4061	177	4.36%	2505	72	2.89%	3606	55	1.52%	3791	8	0.22%
C16:1n7	205	11	5.38%	112	4	3.29%	202	6	2.98%	220	1	0.36%
C18:0	1183	39	3.26%	957	14	1.50%	1262	11	0.88%	1201	35	2.90%
C18:1n7	218	12	5.63%	NA			269	46	17.00%	205	1	0.55%
C18:1n9	2716	137	5.05%	1812	37	2.02%	2632	41	1.54%	2659	13	0.49%
C18:2n6	4108	232	5.65%	2044	54	2.63%	3692	50	1.37%	4311	17	0.40%
C18:3n3	75.1	3.0	3.97%	41.3	0.8	1.94%	84.7	1.5	1.80%	77.7	0.3	0.44%
C18:3n6	70.0	1.3	1.93%	NA			98.7	2.1	2.11%	76.4	0.5	0.65%
C20:0	19.9	1.2	6.08%	NA			38.3	0.6	1.51%	22.6	1.1	5.04%
C20:1n9	20.7	1.8	8.90%	20.9	0.3	1.28%	NA			14.7	0.4	2.59%
C20:2n6	NA			NA			NA			28.0	0.9	3.31%
C20:3n6	NA			164	4	2.49%	194	2	1.07%	211	1	0.33%
C20:4n6	847	50	5.87%	552	13	2.30%	678	14	2.07%	822	13	1.58%
C20:5n3	84.0	5.3	6.30%	92.6	4.9	5.31%	69.7	2.1	2.99%	70.2	0.8	1.10%
C22:0	46.2	3.3	7.24%	NA			83.0	1.3	1.60%	47.6	1.6	3.33%
C22:1n9	3.46	0.19	5.60%	NA			6.00	0.00	0.00%	4.14	0.58	14.12%
C22:4n6	NA			36.7	0.8	2.09%	23.7	1.2	4.88%	21.6	0.4	1.91%
C22:5n3	60.2	2.5	4.08%	57.7	2.1	3.56%	54.0	2.6	4.90%	54.8	1.2	2.23%
C22:5n6	NA			NA			26.3	0.6	2.19%	21.2	0.4	2.07%
C22:6n3	310	17	5.64%	225	11	4.74%	241	6	2.28%	271	1	0.54%
C24:0	37.5	1.7	4.45%	NA			70.6	0.8	1.18%	36.4	0.6	1.77%
C24:1n9	64.2	4.3	6.76%	NA			88.3	3.1	3.46%	73.9	7.2	9.72%
List any additional information such as known coelutions or results for additional fatty acids below:												
Code	Lab 1 ^a			Lab 2 ^a			Lab 3			Lab 4 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0										13.0	4.4	33.93%
C10:1n1												
C11:0												
C12:0				69.9	0.5	0.74%				37.4	7.2	19.36%
C12:1										2.81	0.25	9.06%
C12:1n7												
C13:0												
C14:2												
C15:0												
C16:1n7t												
C16:1n9												
C16:2												
C17:0										50.9	1.4	2.74%
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3												
C19:0												
C20:3n3										4.79	1.35	28.15%
C20:3n9										9.23	0.61	6.64%
C20:4n3												
C21:0												
C22:2n6										4.59	0.72	15.61%
C23:0										19.4	1.0	4.90%
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	NA			1.05	0.01	0.67%	0.978	0.003	0.29%	1.06	0.01	0.67%
^a Reported as µg/g												
^b Reported in mg/mL												
^c alpha and gamma linolenic acid probably coeluting												

Code	Lab 5 ^a			Lab 6 ^a			Lab 7			Lab 8		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	177	7	4.04%	169	8	4.91%	NA			226	9	4.12%
C14:1n5	10.9	0.6	5.45%	NA			NA			15.2	0.6	3.75%
C16:0	3241	45	1.38%	3041	146	4.79%	NA			4040	164	4.05%
C16:1n7	171	3	1.51%	144	7	4.54%	NA			211	9	4.04%
C18:0	1075	12	1.13%	1236	93	7.51%	NA			1283	47	3.68%
C18:1n7	134	1	1.04%	104	6	6.22%	NA			144	7	4.63%
C18:1n9	2277	20	0.88%	1973	90	4.58%	NA			3010	108	3.59%
C18:2n6	3651	31	0.84%	3111	143	4.60%	NA			4353	172	3.95%
C18:3n3	66.3	0.2	0.36%	7.37	0.31	4.18%	NA			77.0	2.8	3.59%
C18:3n6	65.6	0.6	0.84%	32.4	1.0	2.95%	NA			86.1	3.0	3.49%
C20:0	20.9	0.3	1.51%	29.1	1.8	6.05%	NA			4.95	0.11	2.28%
C20:1n9	11.7	0.3	2.87%	44.9	1.9	4.30%	NA			11.1	0.4	3.93%
C20:2n6	25.0	0.2	0.99%	15.5	0.8	5.22%	NA			30.1	1.5	5.00%
C20:3n6	196	2	0.92%	NA			NA			254	12	4.87%
C20:4n6	708	6	0.87%	610	28	4.56%	1004	23	2.29%	1123	38	3.37%
C20:5n3	61.3	0.6	0.97%	35.5	1.4	3.83%	76.9	0.3	0.42%	82.3	2.9	3.56%
C22:0	49.7	0.7	1.46%	171	8	4.52%	NA			1.87	0.15	8.03%
C22:1n9	2.70	0.28	10.48%	<LOQ			NA			NA		
C22:4n6	18.4	0.2	1.31%	0.491	0.352	71.76%	NA			24.1	1.6	6.65%
C22:5n3	46.0	0.7	1.43%	20.8	1.0	4.92%	NA			50.5	0.3	0.69%
C22:5n6	18.2	0.3	1.66%	0.182	0.137	75.04%	NA			25.9	1.0	3.96%
C22:6n3	224	2	1.07%	198	9	4.76%	336	4	1.20%	327	10	3.06%
C24:0	47.5	0.9	1.95%	25.0	0.6	2.55%	NA			2.08	0.03	1.47%
C24:1n9	56.1	1.1	2.03%	26.5	0.9	3.37%	NA			<LOD		

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 5 ^a			Lab 6 ^a			Lab 7			Lab 8		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0												
C10:0												
C10:1n1												
C11:0												
C12:0				10.6	0.7	6.31%				25.6	1.2	4.85%
C12:1												
C12:1n7												
C13:0												
C14:2												
C15:0				31.6	2.5	7.88%				48.2	1.5	3.18%
C16:1n7t												
C16:1n9												
C16:2												
C17:0				30.8	2.0	6.58%				47.1	1.7	3.62%
C17:1				10.5	1.2	11.09%						
C18:1n7t												
C18:1n9t				24.3	1.1	4.37%						
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6										32.2	1.3	4.13%
C18:4n3										4.02	0.31	7.75%
C19:0										3.08	0.07	2.39%
C20:3n3										3.61	0.39	10.68%
C20:3n9												
C20:4n3										9.51	0.13	1.36%
C21:0										2.75	0.07	2.58%
C22:2n6												
C23:0				11.3	0.4	3.93%						
C26:0												
C26:1												
PhA												
PrA												
density (g/mL)	1.00	0.00	0.00%	0.980	0.000	0.00%	NA			1.03	0.00	0.00%

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Code	Lab 9			Lab 10			Lab 11			Lab 12 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C14:0	NA			208	6	2.77%	183	2	1.16%	199	7	3.65%
C14:1n5	NA			12.9	0.1	0.75%	15.2	0.7	4.93%	NA		
C16:0	4052	14	0.35%	3571	89	2.49%	3387	150	4.43%	3519	125	3.56%
C16:1n7	106	1	0.64%	184	4	1.95%	184	19	10.30%	179	7	3.90%
C18:0	1156	15	1.32%	928	22	2.35%	1261	28	2.22%	1117	25	2.25%
C18:1n7	NA			118	1	1.04%	202	23	11.36%	125	3	2.64%
C18:1n9	2962	67	2.27%	2437	66	2.72%	2402	94	3.89%	2487	104	4.19%
C18:2n6	4380	42	0.95%	3998	126	3.16%	3599	567	15.76%	3988	138	3.45%
C18:3n3	75.8	0.1	0.17%	80.4	1.5	1.84%	76.6	5.2	6.79%	71.5	1.4	1.94%
C18:3n6	NA			73.3	1.8	2.43%	67.4	3.9	5.84%	70.9	1.3	1.81%
C20:0	NA			28.5	0.9	3.34%	29.5	2.3	7.71%	NA		
C20:1n9	NA			11.9	0.6	4.94%	NA			NA		
C20:2n6	NA			25.0	1.6	6.44%	NA			NA		
C20:3n6	NA			195	4	2.05%	199	22	11.30%	201	4	2.23%
C20:4n6	812	18	2.20%	812	11	1.35%	756	65	8.59%	794	35	4.47%
C20:5n3	61.8	1.7	2.73%	69.4	1.8	2.53%	79.1	5.2	6.54%	68.2	1.7	2.44%
C22:0	NA			77.6	1.4	1.74%	68.5	1.0	1.43%	58.2	2.5	4.32%
C22:1n9	NA			NA			0.923	0.166	18.00%	NA		
C22:4n6	NA			21.6	0.9	4.03%	31.4	4.2	13.36%	20.4	0.8	3.77%
C22:5n3	219	10	4.58%	54.6	2.0	3.62%	68.2	6.4	9.40%	53.0	1.6	2.99%
C22:5n6	NA			20.6	0.4	2.10%	22.3	2.6	11.82%	NA		
C22:6n3	NA			293	5	1.61%	222	51	22.94%	259	8	3.06%
C24:0	NA			69.2	1.1	1.60%	69.8	2.3	3.29%	52.9	1.4	2.62%
C24:1n9	NA			93.3	3.3	3.53%	86.5	13.3	15.38%	59.5	0.5	0.81%

List any additional information such as known coelutions or results for additional fatty acids below:

Code	Lab 9			Lab 10			Lab 11			Lab 12 ^a		
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd
C6:0												
C8:0							6.34	0.32	5.05%			
C10:0				6.06	0.21	3.45%	10.3	1.4	13.85%			
C10:1n1							6.36	0.38	6.00%			
C11:0												
C12:0				17.2	0.4	2.07%	22.7	1.8	7.95%			
C12:1							5.10	0.29	5.69%			
C12:1n7							4.41	0.28	6.43%			
C13:0												
C14:2							0.860	0.137	15.99%			
C15:0				44.6	1.1	2.55%	37.1	1.5	4.11%			
C16:1n7t												
C16:1n9							39.8	5.8	14.59%			
C16:2							3.95	0.48	12.25%			
C17:0				44.6	1.5	3.31%	37.4	4.9	13.02%			
C17:1												
C18:1n7t												
C18:1n9t												
C18:1n12												
C18:1n12t												
9c,11t-C18:2n6												
C18:4n3				2.60	0.26	9.96%						
C19:0							3.22	0.63	19.62%			
C20:3n3												
C20:3n9				6.06	0.36	6.00%	18.2	1.2	6.48%			
C20:4n3												
C21:0							1.93	0.37	19.19%			
C22:2n6												
C23:0				33.5	0.7	2.23%	42.5	9.0	21.28%			
C26:0							0.570	0.017	3.04%			
C26:1							0.460	0.095	20.74%			
PhA							2.21	0.11	5.05%			
PrA							0.500	0.017	3.46%			
density (g/mL)	NA			0.973	0.005	0.46%	NA			1.02	0.02	2.14%

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Code	Lab 13 ^a			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C14:0	349	1	0.36%	466	35	7.44%	217	240	12
C14:1n5	22.9	0.1	0.50%	19.9	2.4	12.08%	15.2	16.5	9
C16:0	6541	10	0.15%	5095	132	2.59%	3606	3881	13
C16:1n7	350	1	0.29%	545	30	5.60%	184	216	13
C18:0	2114	18	0.87%	2966	46	1.56%	1201	1365	13
C18:1n7	306	3	0.86%	5547	224	4.04%	202	670	11
C18:1n9	5116	39	0.76%	3932	162	4.11%	2632	2801	13
C18:2n6	8504	58	0.68%	3930	201	5.10%	3988	4129	13
C18:3n3	168	1	0.46%	174 ^c	7	4.07%	76.2	75.1	12
C18:3n6	156	2	1.02%	NA			72.1	79.7	10
C20:0	15.0	0.7	4.39%	61.1	17.9	29.36%	25.5	27.0	10
C20:1n9	29.0	0.3	0.97%	60.0	3.4	5.68%	20.7	25.0	9
C20:2n6	78.4	1.2	1.56%	75.3	2.5	3.31%	28.0	39.6	7
C20:3n6	449	6	1.35%	678	16	2.32%	200	274	10
C20:4n6	1672	18	1.09%	2722	106	3.91%	812	994	14
C20:5n3	149	1	0.59%	447.0	14.3	3.20%	73.5	103.3	14
C22:0	12.4	0.7	5.97%	279.8	80.1	28.63%	58.2	81.4	11
C22:1n9	19.4	0.6	3.22%	71.09	18.36	25.82%	4.14	15.39	7
C22:4n6	44.6	1.7	3.72%	149.7	6.4	4.26%	23.7	35.7	11
C22:5n3	121	4	3.04%	138.6	5.7	4.14%	54.8	76.8	13
C22:5n6	44.7	1.4	3.10%	333.9	12.3	3.67%	22.3	57.1	9
C22:6n3	568	6	1.02%	1379	37	2.66%	271	373	13
C24:0	11.2	1.4	12.13%	403.9	115.5	28.59%	47.5	75.1	11
C24:1n9	8.22	0.62	7.48%	397.0	128.7	32.41%	69.1	95.4	10
List any additional information such as known coelutions or results for additional fatty acids below:									
Code	Lab 13 ^a			Lab 14 ^b			Summary		
	mean	stdev	rsd	mean	stdev	rsd	median	mean	n
C6:0				1.53	0.31	20.39%	1.53	1.53	1
C8:0				2.40	0.12	5.03%	4.37	4.37	2
C10:0				10.9	3.4	31.28%	10.6	10.1	4
C10:1n1							6.36	6.36	1
C11:0				0.0715	0.0204	28.49%	0.0715	0.0715	1
C12:0				33.1	3.7	11.04%	25.6	30.9	7
C12:1							3.95	3.95	2
C12:1n7							4.41	4.41	1
C13:0				6.98	0.13	18.37%	6.98	6.98	1
C14:2							0.860	0.860	1
C15:0				83.0	6.8	8.23%	44.6	48.9	5
C16:1n7t				802	33	4.09%	802	802	1
C16:1n9							39.8	39.8	1
C16:2							3.95	3.95	1
C17:0				12.1	0.6	4.86%	41.0	37.1	6
C17:1							10.5	10.5	1
C18:1n7t				4580	191	4.17%	4580	4580	1
C18:1n9t				5100	157	3.07%	2562	2562	2
C18:1n12				4292	177	4.13%	4292	4292	1
C18:1n12t				5448	194	3.56%	5448	5448	1
9c,11t-C18:2n6							32.2	32.2	1
C18:4n3							3.31	3.31	2
C19:0							3.15	3.15	2
C20:3n3							4.20	4.20	2
C20:3n9							9.23	11.2	3
C20:4n3							9.51	9.51	1
C21:0				10.2	1.7	17.09%	2.75	4.97	3
C22:2n6							4.59	4.59	1
C23:0							26.4	26.6	4
C26:0							0.570	0.570	1
C26:1							0.460	0.460	1
PhA							2.21	2.21	1
PrA							0.500	0.500	1
density (g/mL)	1.05	0.00	0.22%	NA			1.02	1.01	9
^a Reported as µg/g									
^b Reported in mg/mL									
^c alpha and gamma linolenic acid probably coeluting									

		Lab 1	Lab 2	Lab 3 ^a	Lab 4	Lab 5	Lab 6	Lab 7 ^a	Lab 8 ^a	Lab 9 ^a	Lab 10 ^a	Lab 11 ^a	Lab 12	Lab 13	Lab 14 ^b
Code	Cert or Ref Value														
C14:0	44.6 ± 1.5	44.0	40.3	50.1	51.7	38.5	37.4	NA	53.5	NA	46.3	38.1	38.1	73.1	89.6
C14:1n5	3.4 ± 1.5	3.49	NA	4.41	3.07	2.40	NA	NA	3.33	NA	2.76	3.09	NA	4.53	3.20
C16:0	833 ± 87	847	544	822	806	718	694	NA	953	756	825	722	707	1417	65.8
C16:1n7	53.4 ± 3.8	51.0	31.4	55.3	56.7	48.4	39.9	NA	67.3	49.9	54.9	49.1	44.4	94.9	123
C18:0	221 ± 25	240	206	271	244	226	298	NA	280	209	210	231	204	441	594
C18:1n7	41.3 ± 7.4	42.8	NA	71.6	51.3	41.5	31.0	NA	47.1	NA	41.9	52.2	36.1	94.0	1198
C18:1n9	604 ± 66	595	412	636	593	534	467	NA	780	534	603	553	510	1164	833
C18:2n6	1026 ± 176	1073	508	931	983	870	760	NA	1168	840	1004	798	849	2011	793
C18:3n3	32.5 ± 4.1	33.4	19.8	33.1	29.1	26.0	2.28	NA	34.5	37.5	33.4	28.9	24.6	66.4	64.4 ^c
C18:3n6	12.3 ± 1.6	12.8	NA	16.3	11.7	10.4	1.76	NA	14.9	NA	12.2	11.3	9.60	25.2	NA
C20:0	7.6 ± 1.1	7.70	NA	10.6	5.37	5.79	9.81	NA	2.65	NA	8.41	8.29	NA	6.01	16.3
C20:1n9	6.0 ± 1.0	5.51	7.09	NA	4.71	4.07	20.8	NA	5.18	NA	4.72	NA	NA	10.5	23.2
C20:2n6		NA	NA	NA	5.02	4.59	2.30	NA	6.38	NA	4.92	NA	NA	15.5	12.8
C20:3n6		NA	27.1	33.6	31.1	31.0	NA	NA	38.3	NA	31.5	31.5	27.6	70.8	104
C20:4n6	196 ± 20	192	139	174	190	172	155	243	292	187	210	176	153	409	640
C20:5n3	84 ± 11	83.6	66.6	85.0	79.7	71.8	54.7	77.1	108	68.0	92.1	80.7	69.2	176	385
C22:0	18.8 ± 4.3	17.9	NA	23.8	11.8	13.9	33.6	NA	1.34	NA	22.3	18.6	16.4	6.32	88.6
C22:1n9	1.7 ± 1.0	1.85	NA	2.43	1.77	1.29	<LOQ	NA	NA	NA	NA	0.301	NA	7.87	15.6
C22:4n6		NA	10.26	4.44	3.96	3.57	<LOQ	NA	5.32	NA	4.43	5.68	3.50	8.94	29.6
C22:5n3	22.4 ± 1.2	22.3	24.1	23.4	22.2	19.0	10.7	NA	21.4	87.5	23.8	25.9	19.0	53.4	19.9
C22:5n6		NA	NA	3.39	2.99	2.41	<LOQ	NA	3.52	NA	2.98	3.17	NA	6.32	135
C22:6n3	104 ± 5	106	90.9	94.7	97.7	82.9	76.3	98.2	130	NA	115	65.7	84.1	214	477
C24:0	19 ± 5	15.6	NA	22.9	11.0	15.0	10	NA	1.24	NA	22.9	22.6	16.5	3.58	136
C24:1n9	32 ± 9	34.5	NA	33.5	18.9	19.6	12.5	NA	<LOD	NA	36.2	34.0	22.5	3.91	159
List any additional information such as known coelutions or results for additional fatty acids below:															
		Lab 1	Lab 2	Lab 3 ^a	Lab 4	Lab 5	Lab 6	Lab 7 ^a	Lab 8 ^a	Lab 9 ^a	Lab 10 ^a	Lab 11 ^a	Lab 12	Lab 13	Lab 14 ^b
Code	Cert or Ref Value														
C6:0															0.130
C8:0												1.45			1.11
C10:0	3.56 ± 0.04				5.73						3.63	3.91			5.54
C10:1n1												1.31			
C11:0															0.0197
C12:0			15.1		8.88		3.56		8.62		5.65	6.31			10.4
C12:1					0.393							0.946			
C12:1n7												0.805			
C13:0															0.135
C14:2												0.218			
C15:0	5.14 ± 0.16						3.01		6.67		6.05	4.92			8.37
C16:1n7t															
C16:1n9												8.34			
C16:2												1.38			
C17:0	7.11 ± 0.47				8.50		4.34		7.76		7.77	6.55			1.21
C17:1							0.919								
C18:1n7t															984
C18:1n9t															1137
C18:1n12															905
C18:1n12t							2.89								1207
9c,11t-C18:2n6									2.82						
C18:4n3									3.86		2.29				
C19:0									0.865			0.872			
C20:3n3					1.42				0.625						
C20:3n9	1.40 ± 0.09				1.83						1.36	5.50			
C20:4n3									2.58						
C21:0									3.82			0.460			3.48
C22:2n6	0.31 ± 0.02				1.43										
C23:0	8.19 ± 0.19				4.30		3.18				9.18	11.7			
C26:0												0.305			
C26:1												0.300			
PhA												0.559			
PrA												0.125			
density (g/mL)	1.02	NA	1.04	0.975	1.06	1.00	0.96	NA	1.03	NA	0.952	NA	1.01	1.04	NA
^a Reported as µM															
^b Reported in mg/mL															
^c alpha and gamma linolenic acid probably coeluting															

		Lab 1 ^a	Lab 2 ^a	Lab 3	Lab 4 ^a	Lab 5 ^a	Lab 6 ^a	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12 ^a	Lab 13 ^a	Lab 14 ^b
Code	Cert or Ref Value														
C14:0	200 ± 7	193	184	214	239	169	157	NA	240	NA	193	167	168	332	392
C14:1n5	16 ± 7	15.4	NA	19.0	14.4	10.6	NA	NA	15.1	NA	11.6	13.7	NA	20.7	14.1
C16:0	3321 ± 347	3303	2212	3126	3326	2799	2599	NA	3810	2949	3064	2817	2771	5726	256
C16:1n7	214 ± 15	201	129	212	236	190	151	NA	271	196	206	193	175	386	482
C18:0	795 ± 90	844	756	930	908	793	1006	NA	1010	736	702	810	721	1608	2089
C18:1n7	149 ± 27	151	NA	247	192	147	106	NA	171	NA	141	185	128	345	4241
C18:1n9	2186 ± 240	2106	1521	2196	2220	1891	1585	NA	2830	1889	2031	1956	1814	4268	2948
C18:2n6	3741 ± 643	3826	1889	3234	3707	3101	2603	NA	4270	2994	3408	2844	3042	7430	2829
C18:3n3	119 ± 15	120	74.3	116	111	93.2	7.87	NA	127	135	114	104	88.8	247	231 ^c
C18:3n6	45.1 ± 6.0	46.0	NA	57.0	44.5	37.2	6.06	NA	54.7	NA	41.5	40.4	34.6	93.8	NA
C20:0	25.0 ± 3.6	24.6	NA	33.0	18.2	18.5	30.1	NA	8.70	NA	25.6	26.5	NA	19.9	52.1
C20:1n9	19.7 ± 3.3	17.7	23.8	NA	16.0	13.1	64.3	NA	17.1	NA	14.5	NA	NA	35.1	74.7
C20:2n6		NA	NA	NA	17.2	14.9	7.15	NA	21.2	NA	15.2	NA	NA	52.1	41.5
C20:3n6		NA	92.3	107	107	101	NA	NA	128	NA	97.9	103	90.5	239	341
C20:4n6	659 ± 69	631	477	558	661	565	490	797	984	614	656	577	505	1392	2101
C20:5n3	284 ± 37	276	230	274	279	237	173.6	255	366	225	290	267	230	604	1271
C22:0	57 ± 13	52.5	NA	68.0	36.6	40.9	94.8	NA	4.02	NA	62.3	54.6	48.4	19.2	260
C22:1n9	5 ± 3	5.46	NA	7.00	5.52	3.80	<LOQ	NA	NA	NA	NA	0.890	NA	24.1	46.2
C22:4n6		NA	32.2	13.0	12.6	10.7	<LOQ	NA	16.4	NA	12.7	17.1	10.6	27.8	89.1
C22:5n3	69.4 ± 3.6	67.6	75.9	69.0	71.1	57.5	31.0	NA	66.4	265	68.5	78.4	57.8	167	60.3
C22:5n6		NA	NA	10.0	9.56	7.31	<LOQ	NA	10.9	NA	8.59	9.58	NA	19.8	407
C22:6n3	323 ± 16	323	289	281	315	252	223	299	407	NA	333	200	257	674	1452
C24:0	54 ± 13	42.2	NA	60.5	31.6	40.8	27	NA	3.46	NA	59.1	61.3	45.0	10.1	370
C24:1n9	89 ± 26	94.2	NA	89.0	54.5	53.6	32.7	NA	<LOD	NA	94.0	92.6	61.7	11.1	433
List any additional information such as known coelutions or results for additional fatty acids below:															
		Lab 1 ^a	Lab 2 ^a	Lab 3	Lab 4 ^a	Lab 5 ^a	Lab 6 ^a	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12 ^a	Lab 13 ^a	Lab 14 ^b
Code	Cert or Ref Value														
C6:0															1.12
C8:0												10.1			7.68
C10:0	21.1 ± 0.2				35.2						20.1	22.7			32.2
C10:1n1												7.71			
C11:0															0.106
C12:0			78.9		46.9		17.1		44.1		26.8	31.5			51.9
C12:1					2.10							4.77			
C12:1n7												4.06			
C13:0															0.629
C14:2												0.970			
C15:0	21.7 ± 0.7						11.9		28.2		23.8	20.3			34.5
C16:1n7t															651
C16:1n9												32.8			
C16:2												5.47			
C17:0	26.9 ± 1.7				33.3		15.4		29.4		27.3	24.2			4.48
C17:1							3.29								
C18:1n7t															3483
C18:1n9t															4024
C18:1n12															3203
C18:1n12t							9.82								4274
9c,11t-C18:2n6									10.3						
C18:4n3									14.3		7.88				
C19:0									2.97			2.92			
C20:3n3					4.88				2.09						
C20:3n9	4.67 ± 0.29				6.31						4.24	17.9			
C20:4n3									8.68						
C21:0									12.0			1.41			10.6
C22:2n6	0.93 ± 0.06				4.51										
C23:0	23.6 ± 0.5				12.8		8.61				24.6	33.1			
C26:0												0.770			
C26:1												0.760			
PhA												1.79			
PrA												0.420			
density (g/mL)	1.02	NA	1.04	0.975	1.06	1.00	0.96	NA	1.03	NA	0.952	NA	1.01	1.04	NA
^a Reported as µg/g															
^b Reported in mg/mL															
^c alpha and gamma linolenic acid probably coeluting															

		Lab 1	Lab 2	Lab 3 ^a	Lab 4	Lab 5	Lab 6	Lab 7 ^a	Lab 8 ^a	Lab 9 ^a	Lab 10 ^a	Lab 11 ^a	Lab 12	Lab 13	Lab 14 ^b
Code	Cert or Ref Value														
C14:0	33.8 ± 1.2	34.0	26.4	40.0	43.9	28.9	28.9	NA	37.0	NA	28.5	29.0	30.6	54.4	65.5
C14:1n5	2.8 ± 1.5	2.34	NA	3.71	2.92	1.73	NA	NA	2.43	NA	1.75	2.64	NA	3.45	2.17
C16:0	715 ± 111	661	431	829	788	706	689	NA	881	707	695	705	726	1371	1083
C16:1n7	69.1 ± 6.9	67.4	33.2	70.1	70.6	59.6	49.2	NA	80.9	49.6	52.1	57.9	60.4	117.1	149
C18:0	231 ± 14	224	184	307	259	250	313	NA	289	246	219	263	250	473	682
C18:1n7	35.6 ± 6.0	39.5	NA	78.4	53.3	42.8	34.0	NA	46.0	NA	33.4	57.3	38.3	93.0	1425
C18:1n9	738 ± 52	750	467	800	773	701	626	NA	970	753	598	688	718	1501	960
C18:2n6	1224 ± 152	1202	520	1129	1244	1110	981	NA	1401	1118	972	943	1150	2502	939
C18:3n3	31.5 ± 1.3	31.4	16.5	33.9	29.6	27.3	2.18	NA	34.0	37.8	28.3	28.8	27.6	66.1	64.8 ^c
C18:3n6	21.0 ± 0.4	21.2	NA	27.9	20.2	18.7	9.51	NA	27.2	NA	16.2	18.0	19.6	43.7	NA
C20:0	8.7 ± 1.5	8.13	NA	12.2	6.45	6.43	10.0	NA	1.55	NA	9.16	9.28	NA	3.82	20.2
C20:1n9	5.7 ± 1.0	5.49	6.35	NA	4.62	4.27	21.4	NA	4.21	NA	3.81	NA	NA	9.64	22.9
C20:2n6		NA	NA	NA	6.48	6.19	3.45	NA	7.56	NA	6.16	NA	NA	20.3	16.8
C20:3n6		NA	40.1	56.2	56.6	56.3	NA	NA	67.6	NA	55.3	50.0	55.2	125.1	185
C20:4n6	235 ± 26	215	147	221	248	225	203	484	368	238	234	220	230	517	769
C20:5n3	20.7 ± 0.8	20.3	25.6	21.7	22.8	18.5	11.2	22.5	24.4	33.2	18.5	22.6	19.3	43.5	128
C22:0	28.7 ± 8.8	29.2	NA	34.8	18.7	20.8	62.4	NA	0.804	NA	33.7	28.7	22.2	4.32	123
C22:1n9	1.7 ± 0.9	1.47	NA	2.43	2.00	1.10	<LOQ	NA	NA	NA	NA	0.284	NA	6.56	31.1
C22:4n6		NA	11.4	8.17	6.54	6.13	0.067	NA	7.88	NA	7.71	8.89	6.70	14.9	48.1
C22:5n3	17.0 ± 0.8	17.2	17.3	16.9	16.5	13.9	6.21	NA	17.2	60.4	17.1	18.5	15.2	38.4	31.3
C22:5n6		NA	NA	6.77	4.92	4.32	<LOQ	NA	6.06	NA	5.18	4.91	NA	10.8	93.4
C22:6n3	55.4 ± 2.3	56.1	44.5	49.4	53.3	44.6	40.3	77.9	62.5	NA	57.4	40.1	48.8	111	256
C24:0	25 ± 9	21.9	NA	29.8	15.7	20.0	14.3	NA	0.892	NA	29.9	28.0	19.0	2.91	160
C24:1n9	30 ± 17	25.7	NA	32.3	25.9	18.4	11.9	NA	<LOD	NA	34.5	28.0	20.0	2.14	139

List any additional information such as known coelutions or results for additional fatty acids below:

		Lab 1	Lab 2	Lab 3 ^a	Lab 4	Lab 5	Lab 6	Lab 7 ^a	Lab 8 ^a	Lab 9 ^a	Lab 10 ^a	Lab 11 ^a	Lab 12	Lab 13	Lab 14 ^b
Code	Cert or Ref Value														
C6:0															0.126
C8:0												0.840			0.224
C10:0	0.3 ± 0.1				0.928						0.334	1.01			0.402
C10:1n1												1.07			
C11:0															0.0045
C12:0			12.3		4.04		0.963		3.36		1.96	3.23			3.49
C12:1					0.280							0.964			
C12:1n7												0.817			
C13:0															0.0635
C14:2												0.193			
C15:0	6.76 ± 0.16						4.07		8.33		6.49	6.08			11.1
C16:1n7t															216
C16:1n9												11.9			
C16:2												1.32			
C17:0	8.84 ± 0.21				9.85		6.18		9.13		8.24	7.79			1.77
C17:1							2.19								
C18:1n7t															1183
C18:1n9t															1302
C18:1n12															1055
C18:1n12t							3.30								1419
9c,11t-C18:2n6									4.98						
C18:4n3									1.86		1.00				
C19:0									0.629			8.60			
C20:3n3					1.11				0.7						
C20:3n9	2.13 ± 0.07				2.68						1.74	5.66			
C20:4n3									3.09						
C21:0									0.870			0.673			4.13
C22:2n6	0.36 ± 0.03				1.52										
C23:0	13.1 ± 0.5				7.10		5.28				13.9	14.9			
C26:0												0.218			
C26:1												0.162			
PhA												0.291			
PrA												0.045			
density (g/mL)	1.02	NA	1.04	0.977	1.06	1.00	1.00	NA	1.03	NA	0.954	NA	1.01	1.04	NA

^a Reported as μM

^b Reported in mg/mL

^c α and γ linolenic acid probably coeluting

		Lab 1 ^a	Lab 2 ^a	Lab 3	Lab 4 ^a	Lab 5 ^a	Lab 6 ^a	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12 ^a	Lab 13 ^a	Lab 14 ^b
Code	Cert or Ref Value														
C14:0	151 ± 5	149	120	171	203	127	127	NA	166	NA	119	127	135	248	287
C14:1n5	13 ± 7	10.3	NA	16.0	13.6	7.65	NA	NA	11.0	NA	7.36	11.7	NA	15.9	9.58
C16:0	2851 ± 442	2578	1750	3158	3246	2755	2686	NA	3520	2757	2587	2751	2845	5559	4223
C16:1n7	278 ± 28	265	136	269	293	234	193	NA	326	195	195	227	239	479	587
C18:0	830 ± 50	787	674	1055	962	877	1102	NA	1040	865	735	924	883	1729	2397
C18:1n7	129 ± 22	140	NA	271	199	152	120	NA	167	NA	113	203	136	342	5046
C18:1n9	2672 ± 189	2655	1719	2768	2891	2481	2217	NA	3520	2665	2021	2436	2554	5526	3398
C18:2n6	4464 ± 485	4286	1929	3933	4686	3958	3498	NA	5120	3985	3306	3363	4121	9276	3348
C18:3n3	116 ± 5	113	61.8	119	112	98.0	7.82	NA	125	136	96.8	103	99.6	247	233 ^c
C18:3n6	77.1 ± 1.4	76.0	NA	98.0	76.8	67.2	34.2	NA	100	NA	55.6	64.7	70.7	163	NA
C20:0	28.4 ± 4.8	26.0	NA	38.0	21.8	20.6	32.0	NA	5.08	NA	28.0	29.7	NA	12.7	64.5
C20:1n9	18.9 ± 3.4	17.7	21.3	NA	15.7	13.7	69.0	NA	13.9	NA	11.7	NA	NA	32.3	73.9
C20:2n6		NA	NA	NA	22.2	20.0	11.2	NA	25.1	NA	19.0	NA	NA	68.4	54.4
C20:3n6		NA	136	179	195	184	NA	NA	226	NA	172	163	181	425	603
C20:4n6	790 ± 86	706	503	709	860	738	666	1588	1240	782	734	724	759	1767	2526
C20:5n3	70.1 ± 2.6	67.1	87.9	70.0	79.5	61.1	37.0	74.5	82.6	110	58.3	74.8	64.1	150	423
C22:0	86 ± 27	85.8	NA	99.9	57.9	61.1	183	NA	2.4	NA	94.4	84.1	65.5	13.2	360
C22:1n9	5 ± 3	4.34	NA	7.00	6.22	3.24	<LOQ	NA	NA	NA	NA	0.840	NA	20.1	92.0
C22:4n6		NA	35.8	24.0	20.8	18.4	0.201	NA	24.3	NA	22.1	26.7	20.2	46.7	145
C22:5n3	52.6 ± 2.4	52.0	54.5	50.0	52.8	41.9	18.8	NA	53.3	183	49.2	56.0	46.2	121	94.8
C22:5n6		NA	NA	20.0	15.7	13.1	<LOQ	NA	18.8	NA	14.9	14.8	NA	33.8	283
C22:6n3	173 ± 7	171	141	147	171	136	123	237	195	NA	167	122	149	352	778
C24:0	70 ± 25	59.3	NA	79.1	45.1	54.4	38.9	NA	2.48	NA	77.3	75.9	51.8	8.22	433
C24:1n9	83 ± 49	70.0	NA	86.0	74.7	50.2	32.5	NA	<LOD	NA	89.7	76.4	54.8	6.07	379

List any additional information such as known coelutions or results for additional fatty acids below:

		Lab 1 ^a	Lab 2 ^a	Lab 3	Lab 4 ^a	Lab 5 ^a	Lab 6 ^a	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12 ^a	Lab 13 ^a	Lab 14 ^b
Code	Cert or Ref Value														
C6:0															1.08
C8:0												5.82			1.56
C10:0	1.9 ± 0.8				5.69						1.85	5.89			2.33
C10:1n1												6.27			
C11:0															0.0240
C12:0			63.9		21.3		4.81		17.2		9.32	16.1			17.4
C12:1					1.49							4.86			
C12:1n7												4.12			
C13:0															0.296
C14:2												0.860			
C15:0	29.0 ± 0.7						16.8		35.2		25.5	25.1			45.9
C16:1n7t															849
C16:1n9												46.9			
C16:2												5.22			
C17:0	33.4 ± 0.8				38.5		22.9		34.6		29.1	28.8			6.53
C17:1							8.17								
C18:1n7t															4187
C18:1n9t															4608
C18:1n12															3733
C18:1n12t							11.7								5024
9c,11t-C18:2n6									18.2						
C18:4n3									6.90		3.46				
C19:0									2.16			28.8			
C20:3n3					3.81				2.23						
C20:3n9	7.10 ± 0.23				9.25						5.42	18.5			
C20:4n3									10.4						
C21:0									2.73			2.06			12.6
C22:2n6	1.09 ± 0.09				4.77										
C23:0	37.9 ± 1.5				21.2		14.9				37.5	42.1			
C26:0												0.550			
C26:1												0.410			
PhA												0.930			
PrA												0.150			
density (g/mL)	1.02	NA	1.04	0.977	1.06	1.00	1.00	NA	1.03	NA	0.954	NA	1.01	1.04	NA

^a Reported as µg/g

^b Reported in mg/mL

^c alpha and gamma linolenic acid probably coeluting

Table 12. Interlaboratory data received for SRM 2378-3 (µg/g)															
		Lab 1	Lab 2	Lab 3 ^a	Lab 4	Lab 5	Lab 6	Lab 7 ^a	Lab 8 ^a	Lab 9 ^a	Lab 10 ^a	Lab 11 ^a	Lab 12	Lab 13	Lab 14 ^b
Code	Cert or Ref Value														
C14:0	34.6 ± 0.8	35.4	33.1	40.6	41.2	27.3	29.0	NA	37.4	NA	33.9	27.1	31.7	57.3	54.7
C14:1n5	3.2 ± 1.7	3.29	NA	3.93	6.06	1.68	NA	NA	2.74	NA	2.30	2.53	NA	3.86	2.03
C16:0	642 ± 114	605	463	695	652	584	557	NA	703	599	633	537	589	1175	899
C16:1n7	45.7 ± 3.2	43.1	27.6	47.1	48.6	39.6	31.6	NA	50.9	49.5	41.4	37.5	39.5	81.4	82.9
C18:0	194 ± 21	189	197	255	221	210	263	NA	231	180	188	187	208	413	458
C18:1n7	32.0 ± 3.3	31.9	NA	66.7	44.1	33.0	23.9	NA	34.4	NA	29.6	59.2	30.6	76.2	1037
C18:1n9	569 ± 66	547	413	593	556	490	416	NA	650	515	492	510	508	1094	673
C18:2n6	913 ± 6	909	498	876	940	820	682	NA	996	792	852	758	867	1918	581
C18:3n3	17.0 ± 0.1	17.1	10.9	18.8	16.6	14.3	2.04	NA	16.7	37.6	17.0	16.6	14.5	36.0	29.7 ^c
C18:3n6	14.6 ± 1.0	13.9	NA	19.1	14.3	12.3	4.25	NA	16.4	NA	13.1	13.1	12.7	29.7	NA
C20:0	7.9 ± 2.7	7.74	NA	8.94	5.18	4.90	8.46	NA	2.10	NA	6.50	6.19	NA	5.36	12.2
C20:1n9	5.88 ± 0.43	5.44	7.15	NA	4.83	4.33	10.4	NA	4.39	NA	4.28	NA	NA	10.3	11.8
C20:2n6		NA	NA	NA	5.69	5.06	2.50	NA	5.51	NA	5.24	NA	NA	18.3	11.5
C20:3n6		NA	31.7	37.0	36.1	34.3	NA	NA	36.5	NA	34.5	37.6	34.1	78.7	100
C20:4n6	228 ± 14	227	172	196	226	200	171	439	309	204	232	206	216	476	608
C20:5n3	18.9 ± 2.2	19.4	27.7	18.5	18.0	15.9	8.86	19.8	19.7	26.3	18.6	21.1	16.8	38.6	98.7
C22:0	19.2 ± 4.5	19.0	NA	23.3	12.4	14.0	35.2	NA	1.64	NA	22.0	16.2	15.1	6.61	79.1
C22:1n9	1.9 ± 1.3	1.77	NA	2.08	1.77	1.03	<LOQ	NA	NA	NA	NA	0.288	NA	7.14	12.7
C22:4n6		NA	12.2	6.12	5.96	5.14	<LOQ	NA	6.52	NA	6.08	9.30	5.20	12.2	35.6
C22:5n3	11.4 ± 0.6	12.1	15.4	10.8	11.4	9.38	3.10	NA	10.4	65.5	11.7	16.1	11.1	28.9	27.6
C22:5n6		NA	NA	5.7	5.3	4.14	<LOQ	NA	5.51	NA	5.15	6.16	NA	10.5	61.2
C22:6n3	54.9 ± 2.4	54.4	53.6	46.7	53.3	43.9	37.5	82.1	59.3	NA	60.0	51.2	49.2	112	233
C24:0	18 ± 6	16.9	NA	20.5	11.0	13.1	8.74	NA	1.36	NA	20.5	17.2	14.1	2.06	114
C24:1n9	22 ± 9	19.6	NA	22.9	16.7	13.1	7.70	NA	<LOD	NA	24.1	23.0	14.1	1.98	106
List any additional information such as known coelutions or results for additional fatty acids below:															
		Lab 1	Lab 2	Lab 3 ^a	Lab 4	Lab 5	Lab 6	Lab 7 ^a	Lab 8 ^a	Lab 9 ^a	Lab 10 ^a	Lab 11 ^a	Lab 12	Lab 13	Lab 14 ^b
Code	Cert or Ref Value														
C6:0															0.0640
C8:0												0.757			0.188
C10:0	0.89 ± 0.15				1.47						0.848	1.35			0.779
C10:1n1												0.857			
C11:0															0.0052
C12:0			14.9		8.19		3.70		7.62		5.37	5.73			7.85
C12:1					0.344							0.809			
C12:1n7												0.684			
C13:0															0.0632
C14:2												0.213			
C15:0	4.92 ± 0.12						2.63		5.49		5.28	4.24			6.15
C16:1n7t															121
C16:1n9												7.68			
C16:2												0.830			
C17:0	7.02 ± 0.37				7.17		4.17		6.60		6.97	4.67			0.723
C17:1							1.41								
C18:1n7t															879
C18:1n9t															949
C18:1n12															736
C18:1n12t							2.79								1094
9c,11t-C18:2n6									3.45						
C18:4n3									1.12		0.714				
C19:0									0.658			0.606			
C20:3n3					1.09				0.464						
C20:3n9	2.26 ± 0.03				2.84						1.97	6.71			
C20:4n3									1.18						
C21:0									0.723			0.451			2.73
C22:2n6	0.303 ± 0.003				1.11										
C23:0	7.75 ± 0.07				4.67		1.54				8.33	7.32			
C26:0												0.262			
C26:1												0.170			
PhA												0.438			
PrA												0.072			
density (g/mL)	1.02	NA	1.05	0.979	1.04	1.00	1.00	NA	1.03	NA	0.960	NA	1.01	1.04	NA
^a Reported as µM															
^b Reported in mg/mL															
^c alpha and gamma linolenic acid probably coeluting															

Table 13. Interlaboratory data received for SRM 2378-3 (μM)																
		Lab 1 ^a	Lab 2 ^a	Lab 3	Lab 4 ^a	Lab 5 ^a	Lab 6 ^a	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12 ^a	Lab 13 ^a	Lab 14 ^b	
Code	Cert or Ref Value															
C14:0	155 \pm 4	155	152	174	188	120	127	NA	168	NA	142	119	139	261	239	
C14:1n5	14 \pm 8	14.5	NA	17.0	27.9	7.40	NA	NA	12.4	NA	9.76	11.2	NA	17.7	8.95	
C16:0	2557 \pm 455	2359	1895	2652	2655	2278	2172	NA	2810	2335	2370	2096	2308	4764	3506	
C16:1n7	184 \pm 13	170	114	181	200	156	124	NA	205	195	156	147	156	333	326	
C18:0	696 \pm 75	664	725	877	813	739	926	NA	834	633	633	658	735	1509	1612	
C18:1n7	116 \pm 12	113	NA	231	163	117	84.5	NA	125	NA	101	210	109	281	3672	
C18:1n9	2059 \pm 240	1936	1534	2053	2055	1735	1471	NA	2360	1822	1670	1805	1807	4027	2383	
C18:2n6	3328 \pm 21	3241	1864	3055	3499	2922	2432	NA	3640	2823	2916	2701	3107	7113	2072	
C18:3n3	62.4 \pm 0.5	61.4	40.9	66.0	62.2	51.3	7.32	NA	61.6	135	58.5	59.5	52.3	135	107 ^c	
C18:3n6	53.6 \pm 3.6	49.9	NA	67.0	53.6	44.2	15.3	NA	60.5	NA	45.1	47.0	45.8	111	NA	
C20:0	26.0 \pm 9.0	24.8	NA	28.0	17.3	15.7	27.1	NA	6.88	NA	20.0	19.8	NA	17.8	39.0	
C20:1n9	19.4 \pm 1.4	17.5	24.2	NA	16.3	13.9	33.6	NA	14.5	NA	13.2	NA	NA	34.4	37.9	
C20:2n6		NA	NA	NA	19.3	16.4	8.10	NA	18.3	NA	16.3	NA	NA	61.7	37.3	
C20:3n6		NA	109	118	123	112	NA	NA	122	NA	108	123	112	267	328	
C20:4n6	765 \pm 46	745	591	631	774	657	563	1443	1040	670	731	678	713	1625	1997	
C20:5n3	63.8 \pm 7.6	64.2	96.2	60.0	62.0	52.5	29.3	65.6	66.6	86.9	59.2	69.7	55.8	133	326	
C22:0	58 \pm 14	55.7	NA	67.0	38.0	41.2	103	NA	4.9	NA	61.9	47.7	44.6	20.2	232	
C22:1n9	6 \pm 4	5.23	NA	6.00	5.45	3.05	<LOQ	NA	NA	NA	NA	0.850	NA	21.9	37.6	
C22:4n6		NA	38.5	18.0	18.7	15.5	<LOQ	NA	20.1	NA	17.6	28.0	15.7	38.1	107	
C22:5n3	35.1 \pm 1.9	36.5	49.0	32.0	36.0	28.4	9.37	NA	32.3	198	33.8	48.7	33.7	91.1	83.6	
C22:5n6		NA	NA	17.0	16.8	12.5	<LOQ	NA	17.1	NA	15.0	18.6	NA	32.9	185	
C22:6n3	171 \pm 8	166	171	139	170	134	114	250	185	NA	175	156	150	353	708	
C24:0	50 \pm 16	45.7	NA	54.3	31.2	35.6	23.7	NA	3.78	NA	53.4	46.8	38.5	5.80	309	
C24:1n9	61 \pm 25	53.4	NA	61.0	47.5	35.6	21.0	NA	<LOD	NA	63.2	62.7	38.7	5.62	289	

List any additional information such as known coelutions or results for additional fatty acids below:

		Lab 1 ^a	Lab 2 ^a	Lab 3	Lab 4 ^a	Lab 5 ^a	Lab 6 ^a	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12 ^a	Lab 13 ^a	Lab 14 ^b
Code	Cert or Ref Value														
C6:0															0.551
C8:0												5.25			1.31
C10:0	5.3 \pm 0.9				8.90						4.72	7.84			4.52
C10:1n1												5.03			
C11:0															0.0277
C12:0			90.5		42.7		18.5		39.0		25.7	28.6			39.2
C12:1					1.81							4.08			
C12:1n7												3.45			
C13:0															0.295
C14:2												0.950			
C15:0	20.7 \pm 0.5						10.8		23.2		20.9	17.5			25.4
C16:1n7t															477
C16:1n9												30.2			
C16:2												3.29			
C17:0	26.5 \pm 1.4				27.7		15.4		25.0		24.7	17.3			2.67
C17:1							5.26								
C18:1n7t															3111
C18:1n9t															3358
C18:1n12															2604
C18:1n12t							9.87								3873
9c,11t-C18:2n6									12.6						
C18:4n3									4.17		2.48				
C19:0									2.26			2.03			
C20:3n3					3.73				1.55						
C20:3n9	7.54 \pm 0.10				9.67						6.18	21.9			
C20:4n3									3.97						
C21:0									2.27			1.38			8.37
C22:2n6	0.92 \pm 0.01				3.44										
C23:0	22.3 \pm 0.2				13.8		4.34				22.5	20.6			
C26:0												0.660			
C26:1												0.430			
PhA												1.40			
PrA												0.240			
density (g/mL)	1.02	NA	1.05	0.979	1.04	1.00	1.00	NA	1.03	NA	0.960	NA	1.01	1.04	NA

^a Reported as $\mu\text{g/g}$

^b Reported in mg/mL

^c *alpha* and *gamma* linolenic acid probably coeluting

Table 14. Percent differences from median values by laboratory							
Lab 1							
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	22.3%	-4.38%	11.1%	-0.05%	5.06%	0.93%	2.99%
C14:1n5	27.7%	-29.3%	-4.44%	7.31%	-6.03%	17.2%	1.43%
C16:0	0.00%	-9.84%	12.6%	12.0%	-6.49%	0.00%	0.00%
C16:1n7	0.00%	-18.5%	11.7%	0.00%	11.0%	0.00%	0.00%
C18:0	-12.0%	-16.8%	-1.46%	0.00%	-14.8%	-10.0%	-11.0%
C18:1n7	-3.86%	-12.25%	8.24%	-11.44%	-16.2%	-9.63%	-10.5%
C18:1n9	-5.81%	-24.34%	3.22%	3.69%	0.00%	6.30%	1.61%
C18:2n6	-3.81%	-5.85%	3.02%	23.4%	8.26%	10.9%	5.64%
C18:3n3	10.1%	-10.50%	-1.40%	6.72%	4.74%	1.56%	3.15%
C18:3n6	-1.76%	-22.26%	-2.96%	6.89%	3.60%	2.96%	0.60%
C20:0	-17.2%	-30.1%	-22.0%	-1.94%	-3.59%	24.4%	-10.4%
C20:1n9	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
C20:2n6							
C20:3n6							
C20:4n6	-1.83%	-12.77%	4.30%	1.32%	-5.69%	3.26%	-0.25%
C20:5n3	-9.50%	-10.83%	14.20%	2.19%	-10.09%	-1.11%	-5.31%
C22:0	-28.1%	-17.6%	-20.6%	0.00%	1.99%	16.8%	-8.81%
C22:1n9	0.00%	0.00%	-16.5%	-0.94%	-30.2%	-4.06%	-2.50%
C22:4n6							
C22:5n3	12.2%	-6.38%	9.75%	-1.34%	-1.42%	1.14%	-0.10%
C22:5n6							
C22:6n3	5.40%	0.00%	14.42%	7.90%	2.44%	-2.26%	3.92%
C24:0	-16.0%	-36.7%	-21.0%	0.00%	9.04%	18.9%	-8.01%
C24:1n9	-4.33%	-6.31%	-7.01%	25.0%	-3.23%	5.84%	-3.78%
median for a sample	-1.79%	-11.5%	1.51%	0.66%	-0.71%	1.35%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 2						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	23.8%	7.36%	-19.3%	-4.63%	-15.1%	-0.93%	-2.78%
C14:1n5							
C16:0	-22.6%	-24.4%	-30.5%	-25.0%	-36.5%	-19.7%	-24.7%
C16:1n7	-37.2%	-41.5%	-39.0%	-35.9%	-43.2%	-32.8%	-38.1%
C18:0	-8.78%	-8.74%	-20.4%	-10.4%	-27.1%	-1.81%	-9.60%
C18:1n7							
C18:1n9	-23.4%	-32.2%	-31.1%	-25.1%	-35.3%	-15.8%	-28.1%
C18:2n6	-46.0%	-45.6%	-48.7%	-39.1%	-51.3%	-36.2%	-45.8%
C18:3n3	-36.0%	-42.6%	-45.8%	-33.9%	-42.7%	-32.3%	-39.3%
C18:3n6							
C20:0							
C20:1n9	17.2%	57.2%	0.98%	34.3%	20.2%	37.9%	27.3%
C20:2n6							
C20:3n6	-19.2%	-16.2%	-17.75%	-12.0%	-25.4%	-9.5%	-17.0%
C20:4n6	-29.0%	-26.1%	-32.03%	-23.4%	-32.8%	-18.1%	-27.5%
C20:5n3	142%	0.90%	25.88%	-15.0%	17.8%	48.3%	21.8%
C22:0							
C22:1n9							
C22:4n6	83.2%	65.1%	55.0%	119%	49.1%	98.4%	74.2%
C22:5n3	44.7%	0.00%	5.21%	10.84%	3.16%	35.98%	8.03%
C22:5n6							
C22:6n3	-3.95%	-5.21%	-17.1%	-3.50%	-15.4%	0.90%	-4.58%
C24:0							
C24:1n9							
median for a sample	-14.0%	-12.5%	-19.8%	-13.5%	-26.2%	-5.64%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 3						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	15.7%	20.6%	6.49%	11.0%	20.6%	13.5%	14.6%
C14:1n5	98.5%	63.0%	36.0%	32.3%	45.5%	37.1%	41.3%
C16:0	12.8%	12.9%	0.00%	6.01%	14.6%	12.4%	12.6%
C16:1n7	4.89%	31.9%	10.2%	5.68%	12.8%	6.77%	8.51%
C18:0	18.1%	19.5%	5.05%	10.24%	14.1%	18.7%	16.1%
C18:1n7	46.4%	112%	33.4%	44.4%	62.3%	84.8%	54.3%
C18:1n9	12.1%	70.1%	0.00%	8.11%	4.25%	12.7%	10.1%
C18:2n6	6.29%	56.8%	-7.43%	4.29%	-0.64%	4.55%	4.42%
C18:3n3	22.7%	92.6%	11.1%	3.18%	10.4%	9.23%	10.8%
C18:3n6	47.8%	156%	36.8%	32.4%	33.6%	38.2%	37.5%
C20:0	70.6%	71.1%	50.1%	31.3%	40.8%	40.7%	45.5%
C20:1n9							
C20:2n6							
C20:3n6	2.46%	82.6%	-2.99%	2.00%	-1.80%	-1.67%	0.17%
C20:4n6	-6.89%	66.2%	-16.5%	-10.3%	-5.29%	-12.6%	-8.61%
C20:5n3	1.13%	91.8%	-5.27%	1.36%	-6.20%	-7.52%	-2.07%
C22:0	60.7%	57.9%	42.7%	29.5%	18.8%	40.4%	41.6%
C22:1n9	81.6%	245%	45.0%	26.9%	12.5%	10.1%	35.9%
C22:4n6	-0.17%	53.9%	0.00%	-11.6%	0.00%	-7.23%	-0.08%
C22:5n3	0.00%	65.5%	-1.50%	0.73%	-5.27%	-11.2%	-0.75%
C22:5n6	4.81%	93.7%	17.9%	2.15%	15.9%	-0.29%	10.3%
C22:6n3	-3.75%	75.8%	-10.9%	-6.02%	-11.8%	-18.0%	-8.48%
C24:0	54.7%	49.7%	48.7%	43.3%	45.5%	41.2%	47.1%
C24:1n9	51.6%	93.5%	27.9%	18.1%	18.9%	20.9%	24.4%
median for a sample	14.2%	68.2%	8.36%	7.06%	13.4%	11.3%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 4						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	21.4%	20.4%	19.2%	24.2%	43.1%	22.8%	22.1%
C14:1n5	11.0%	0.00%	10.2%	0.00%	23.8%	125%	10.6%
C16:0	10.7%	7.76%	5.13%	12.8%	17.7%	12.5%	11.6%
C16:1n7	12.8%	16.2%	20.0%	17.5%	22.9%	17.8%	17.7%
C18:0	6.20%	4.98%	0.00%	7.60%	4.07%	10.1%	5.59%
C18:1n7	3.86%	7.46%	1.69%	12.3%	19.4%	30.3%	9.88%
C18:1n9	5.55%	3.94%	1.04%	9.27%	8.88%	12.8%	7.22%
C18:2n6	12.4%	7.81%	8.10%	19.6%	18.4%	19.8%	15.4%
C18:3n3	-2.71%	-0.98%	2.01%	-1.54%	4.21%	2.88%	0.52%
C18:3n6	6.36%	2.36%	5.99%	3.48%	4.60%	10.5%	5.29%
C20:0	-14.3%	-9.73%	-11.5%	-27.7%	-19.3%	-12.9%	-13.6%
C20:1n9	-24.5%	-9.54%	-28.9%	-9.58%	-11.0%	-7.18%	-10.3%
C20:2n6	0.00%	0.00%	0.00%	0.00%	0.00%	5.23%	0.00%
C20:3n6	-2.46%	-1.31%	5.66%	2.18%	7.01%	2.40%	2.29%
C20:4n6	2.15%	-0.77%	1.15%	6.18%	14.9%	7.19%	4.16%
C20:5n3	-9.98%	-0.90%	-4.52%	3.08%	6.48%	-4.43%	-2.67%
C22:0	-19.3%	-19.5%	-18.2%	-30.3%	-31.2%	-20.3%	-19.9%
C22:1n9	9.14%	45.9%	0.00%	0.00%	0.00%	0.00%	0.00%
C22:4n6	-11.8%	-28.5%	-8.69%	-14.3%	-13.4%	-3.59%	-12.6%
C22:5n3	-1.25%	-10.2%	0.00%	3.76%	0.00%	0.00%	0.00%
C22:5n6	-5.72%	-8.49%	-5.13%	-2.36%	-8.91%	-1.65%	-5.43%
C22:6n3	0.00%	-0.64%	0.00%	5.19%	2.80%	0.00%	0.00%
C24:0	-20.9%	-32.4%	-23.2%	-25.2%	-17.1%	-18.8%	-22.1%
C24:1n9	0.42%	6.31%	7.01%	-27.7%	3.23%	-5.84%	1.82%
median for a sample	0.21%	-0.32%	0.52%	2.63%	4.14%	2.64%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 5						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	-31.9%	-23.7%	-18.4%	-12.5%	-10.8%	-21.9%	-20.2%
C14:1n5	-49.2%	-45.4%	-28.5%	-26.2%	-30.5%	-40.3%	-35.4%
C16:0	-5.76%	-6.23%	-10.11%	-5.07%	-0.06%	-3.46%	-5.41%
C16:1n7	-17.8%	-7.66%	-6.58%	-5.27%	-1.89%	-8.11%	-7.12%
C18:0	-4.53%	-3.81%	-10.52%	-5.98%	-5.09%	0.00%	-4.81%
C18:1n7	-25.9%	-20.1%	-33.7%	-14.1%	-9.18%	-6.43%	-17.1%
C18:1n9	-11.8%	-11.6%	-13.5%	-6.89%	-6.56%	-4.77%	-9.22%
C18:2n6	-7.20%	-9.03%	-8.45%	0.00%	0.00%	0.00%	-3.60%
C18:3n3	-20.3%	-15.9%	-13.1%	-17.1%	-9.10%	-15.1%	-15.5%
C18:3n6	-12.8%	-14.0%	-9.06%	-13.6%	-8.39%	-8.78%	-10.9%
C20:0	-14.2%	-14.8%	-18.0%	-26.2%	-23.7%	-21.3%	-19.6%
C20:1n9	-34.7%	-33.6%	-43.3%	-26.2%	-22.3%	-20.4%	-29.9%
C20:2n6	-9.14%	-11.5%	-10.7%	-13.5%	-9.63%	-10.4%	-10.6%
C20:3n6	-10.5%	-8.82%	-1.59%	-3.60%	0.71%	-6.68%	-5.14%
C20:4n6	-14.5%	-14.8%	-12.9%	-9.23%	-1.40%	-9.05%	-11.0%
C20:5n3	-25.2%	-16.3%	-16.7%	-12.1%	-18.1%	-19.1%	-17.4%
C22:0	-5.90%	-8.08%	-14.7%	-22.15%	-27.3%	-13.6%	-14.2%
C22:1n9	-22.8%	-7.56%	-34.9%	-31.1%	-47.9%	-44.1%	-33.0%
C22:4n6	-25.8%	-39.54%	-22.4%	-26.9%	-23.3%	-20.4%	-24.5%
C22:5n3	-23.0%	-26.20%	-16.1%	-16.1%	-20.6%	-21.3%	-21.0%
C22:5n6	-30.8%	-30.53%	-18.5%	-25.4%	-24.3%	-26.5%	-25.9%
C22:6n3	-21.9%	-20.02%	-17.3%	-15.6%	-18.6%	-21.2%	-19.3%
C24:0	0.00%	0.00%	0.00%	-3.46%	0.00%	-7.49%	0.00%
C24:1n9	-10.6%	-17.6%	-18.7%	-28.9%	-30.6%	-29.4%	-23.8%
median for a sample	-16.2%	-14.8%	-15.4%	-13.8%	-10.2%	-14.4%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 6						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	-27.1%	-16.2%	-22.1%	-18.4%	-10.6%	-17.2%	-17.8%
C14:1n5							
C16:0	-10.7%	-5.79%	-15.7%	-11.8%	-2.58%	-7.94%	-9.34%
C16:1n7	-38.6%	-22.1%	-21.8%	-24.9%	-18.9%	-26.7%	-23.5%
C18:0	16.3%	27.8%	2.94%	19.2%	19.2%	25.4%	19.2%
C18:1n7	-44.8%	-38.7%	-48.3%	-38.3%	-27.9%	-32.4%	-38.5%
C18:1n9	-25.8%	-19.9%	-25.0%	-21.9%	-16.5%	-19.2%	-20.9%
C18:2n6	-22.6%	-18.8%	-22.0%	-16.1%	-11.6%	-16.8%	-17.8%
C18:3n3	-88.7%	-93.9%	-90.3%	-93.0%	-92.7%	-87.9%	-91.5%
C18:3n6		-91.5%	-55.1%	-85.9%	-53.5%	-68.5%	-68.5%
C20:0	51.4%	59.4%	14.1%	20.0%	18.8%	36.1%	28.0%
C20:1n9	9.47%	187%	116%	263%	290%	91.9%	152%
C20:2n6	-49.7%	-47.0%	-44.6%	-58.4%	-49.6%	-55.7%	-49.7%
C20:3n6							
C20:4n6	-26.4%	-21.3%	-24.8%	-21.3%	-11.0%	-22.0%	-21.7%
C20:5n3	-88.4%	-39.4%	-51.7%	-35.8%	-50.4%	-54.9%	-51.0%
C22:0	121%	252%	194%	80.5%	118%	117%	119%
C22:1n9							
C22:4n6			-97.9%		-99.2%		-98.5%
C22:5n3	-94.5%	-60.8%	-62.0%	-54.8%	-64.4%	-74.0%	-63.2%
C22:5n6			-99.2%				-99.2%
C22:6n3	-32.9%	-24.0%	-27.0%	-25.4%	-26.3%	-32.6%	-26.7%
C24:0	-57.9%	-56.5%	-47.3%	-36.1%	-28.4%	-38.3%	-42.8%
C24:1n9	-57.4%	-60.8%	-61.7%	-56.6%	-55.0%	-58.4%	-57.9%
median for a sample	-30.0%	-22.1%	-27.0%	-24.9%	-22.6%	-26.7%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 7						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0							
C14:1n5							
C16:0							
C16:1n7							
C18:0							
C18:1n7							
C18:1n9							
C18:2n6							
C18:3n3							
C18:3n6							
C20:0							
C20:1n9							
C20:2n6							
C20:3n6							
C20:4n6	32.0%	47.2%	23.6%	28.1%	112.1%	99.9%	39.6%
C20:5n3	25.8%	12.7%	4.52%	-5.67%	-0.17%	1.11%	2.81%
C22:0							
C22:1n9							
C22:4n6							
C22:5n3							
C22:5n6							
C22:6n3	35.8%	72.2%	23.9%	0.00%	42.3%	47.5%	39.0%
C24:0							
C24:1n9							
median for a sample	32.0%	47.2%	23.6%	0.00%	42.3%	47.5%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 8						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	-11.1%	4.38%	4.03%	24.5%	17.0%	9.54%	6.96%
C14:1n5	-7.11%	-2.58%	-0.18%	5.11%	0.00%	0.00%	-0.09%
C16:0	18.7%	21.5%	12.0%	29.2%	27.7%	19.1%	20.3%
C16:1n7	9.47%	28.9%	14.8%	35.1%	36.6%	20.9%	24.9%
C18:0	10.7%	16.1%	6.9%	19.7%	12.5%	12.9%	12.7%
C18:1n7	-16.2%	-7.46%	-28.7%	0.00%	0.00%	0.00%	-3.73%
C18:1n9	23.2%	28.1%	14.4%	39.3%	32.6%	29.6%	28.8%
C18:2n6	19.4%	20.6%	9.16%	37.7%	29.3%	24.6%	22.6%
C18:3n3	1.16%	8.17%	1.00%	12.97%	16.0%	1.95%	5.06%
C18:3n6	21.0%	27.1%	19.3%	27.1%	36.3%	24.8%	26.0%
C20:0	-84.5%	-79.4%	-80.6%	-65.4%	-81.2%	-65.4%	-80.0%
C20:1n9	-32.1%	-27.1%	-46.4%	-3.63%	-21.4%	-17.2%	-24.2%
C20:2n6	13.3%	19.3%	7.31%	23.2%	13.1%	0.00%	13.2%
C20:3n6	6.88%	20.6%	27.1%	22.0%	24.0%	1.67%	21.3%
C20:4n6	39.9%	43.3%	38.3%	58.1%	65.6%	44.1%	43.7%
C20:5n3	-1.13%	23.3%	12.0%	35.4%	10.7%	2.65%	11.3%
C22:0	-97.2%	-96.2%	-96.8%	-92.3%	-97.1%	-89.7%	-96.5%
C22:1n9							
C22:4n6	0.17%	-9.93%	1.97%	11.6%	1.25%	3.59%	1.61%
C22:5n3	-2.95%	1.46%	-7.89%	-3.07%	0.98%	-10.4%	-3.01%
C22:5n6	-1.18%	3.65%	16.1%	11.3%	8.91%	0.29%	6.28%
C22:6n3	12.8%	27.6%	20.8%	36.1%	17.0%	9.13%	18.9%
C24:0	-97.1%	-96.2%	-95.6%	-91.8%	-95.4%	-90.2%	-95.5%
C24:1n9							
median for a sample	0.67%	12.1%	7.08%	20.9%	12.8%	2.30%	

Table 14 (cont). Percent differences from median values by laboratory							
Lab 9							
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0							
C14:1n5							
C16:0	-0.19%	4.12%	12.38%	0.00%	0.00%	-1.04%	0.00%
C16:1n7	-9.36%	-39.5%	-42.1%	-2.26%	-18.3%	14.8%	-13.8%
C18:0	-0.72%	-4.19%	-3.75%	-12.74%	-6.41%	-14.4%	-5.30%
C18:1n7							
C18:1n9	11.4%	13.1%	12.6%	-7.01%	0.38%	0.00%	5.91%
C18:2n6	12.49%	5.95%	9.82%	-3.45%	0.67%	-3.40%	3.31%
C18:3n3	79.5%	34.4%	-0.54%	19.9%	26.0%	123%	30.2%
C18:3n6							
C20:0							
C20:1n9							
C20:2n6							
C20:3n6							
C20:4n6	3.16%	4.68%	0.00%	-1.32%	4.47%	-7.15%	1.58%
C20:5n3	105%	-9.42%	-16.0%	-16.8%	47.0%	33.9%	12.2%
C22:0							
C22:1n9							
C22:4n6							
C22:5n3	355%	157%	300%	286%	246%	449%	293%
C22:5n6							
C22:6n3							
C24:0							
C24:1n9							
median for a sample	11.4%	4.68%	0.00%	-2.26%	0.67%	0.00%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 10						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	-22.0%	-11.4%	-4.03%	0.05%	-16.1%	-7.19%	-9.29%
C14:1n5	-32.6%	-27.2%	-14.8%	-19.3%	-33.1%	-21.3%	-24.3%
C16:0	0.48%	0.00%	-0.97%	3.89%	-6.16%	0.44%	0.22%
C16:1n7	-10.6%	0.00%	0.00%	2.46%	-18.1%	-7.87%	-3.93%
C18:0	-20.1%	-18.7%	-22.8%	-16.8%	-20.5%	-14.3%	-19.4%
C18:1n7	-28.0%	-25.3%	-41.6%	-17.5%	-32.5%	-19.6%	-26.7%
C18:1n9	-6.57%	-6.22%	-7.41%	0.00%	-23.9%	-8.30%	-6.99%
C18:2n6	2.13%	0.00%	0.26%	9.92%	-16.5%	-0.22%	0.13%
C18:3n3	-1.16%	0.98%	5.45%	1.54%	-10.2%	-3.24%	-0.09%
C18:3n6	0.00%	-2.36%	1.65%	-3.48%	-24.2%	-6.93%	-2.92%
C20:0	14.2%	9.73%	11.5%	1.94%	3.59%	0.40%	6.66%
C20:1n9	-34.3%	-29.8%	-42.6%	-18.4%	-33.8%	-24.4%	-31.8%
C20:2n6	-8.07%	-15.2%	-10.8%	-11.7%	-14.1%	-11.0%	-11.3%
C20:3n6	-11.95%	-9.65%	-2.29%	-6.63%	-5.61%	-10.0%	-8.14%
C20:4n6	-1.13%	-1.60%	0.00%	5.43%	-1.92%	1.26%	-0.56%
C20:5n3	-13.8%	-1.28%	-5.69%	7.18%	-21.83%	-8.80%	-7.24%
C22:0	42.7%	37.8%	33.3%	18.7%	12.3%	29.8%	31.6%
C22:1n9							
C22:4n6	-14.1%	-26.8%	-8.75%	-13.8%	-7.81%	-9.52%	-11.7%
C22:5n3	-9.20%	-9.99%	-0.49%	0.00%	-6.78%	-6.12%	-6.45%
C22:5n6	-19.49%	-19.51%	-7.86%	-12.24%	-13.47%	-12.27%	-12.9%
C22:6n3	2.32%	6.65%	8.12%	11.39%	0.00%	3.47%	5.06%
C24:0	45.3%	39.2%	45.9%	39.9%	42.2%	38.8%	41.0%
C24:1n9	65.8%	35.9%	35.1%	24.7%	24.1%	25.2%	30.1%
median for a sample	-8.07%	-2.36%	-0.97%	0.05%	-13.5%	-7.19%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 11						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	-24.5%	-14.9%	-15.6%	-13.5%	-10.4%	-22.7%	-15.2%
C14:1n5	50.0%	2.41%	0.00%	-4.99%	5.91%	-9.76%	1.20%
C16:0	-2.73%	-2.76%	-6.06%	-4.47%	-0.21%	-11.2%	-3.62%
C16:1n7	5.56%	7.08%	-0.02%	-3.85%	-4.67%	-13.2%	-1.93%
C18:0	0.00%	0.00%	5.03%	-3.96%	0.00%	-11.0%	0.00%
C18:1n7	30.9%	20.2%	0.00%	8.08%	21.5%	67.6%	20.9%
C18:1n9	0.00%	0.00%	-8.71%	-3.71%	-8.25%	-0.93%	-2.32%
C18:2n6	0.00%	4.47%	-9.76%	-8.27%	-15.03%	-7.56%	-7.92%
C18:3n3	4.51%	4.27%	0.54%	-7.80%	-4.21%	-1.56%	-0.51%
C18:3n6	-0.81%	8.37%	-6.55%	-6.06%	-11.8%	-2.96%	-4.51%
C20:0	29.0%	28.9%	15.7%	5.64%	10.0%	-0.40%	12.9%
C20:1n9							
C20:2n6							
C20:3n6	3.07%	1.31%	-0.51%	-2.00%	-10.5%	2.28%	0.40%
C20:4n6	1.13%	0.77%	-6.95%	-7.29%	-3.30%	-6.14%	-4.72%
C20:5n3	8.14%	12.4%	7.57%	-1.36%	0.17%	7.49%	7.53%
C22:0	28.3%	27.9%	17.6%	3.95%	0.00%	0.00%	10.8%
C22:1n9	-72.1%	-61.8%	-77.7%	-83.9%	-86.5%	-84.4%	-80.8%
C22:4n6	38.1%	9.93%	32.7%	16.3%	11.4%	44.2%	24.5%
C22:5n3	28.6%	13.7%	24.5%	14.5%	6.13%	35.2%	19.5%
C22:5n6	1.18%	-3.65%	0.00%	-2.15%	-14.0%	9.27%	-1.07%
C22:6n3	-0.07%	-10.97%	-17.9%	-33.1%	-26.7%	-8.03%	-14.5%
C24:0	52.5%	50.7%	47.1%	45.1%	39.5%	21.6%	46.1%
C24:1n9	61.3%	58.2%	25.3%	22.9%	5.56%	24.3%	24.8%
median for a sample	3.79%	4.37%	0.00%	-3.78%	-1.76%	-1.25%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 12						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	-28.7%	-19.3%	-8.31%	-13.1%	-5.06%	-9.04%	-11.0%
C14:1n5							
C16:0	-0.30%	-4.39%	-2.41%	-6.03%	3.21%	-2.16%	-2.28%
C16:1n7	-17.9%	-8.94%	-2.36%	-12.6%	0.00%	-7.96%	-8.45%
C18:0	-7.52%	-7.24%	-6.96%	-14.6%	-4.45%	-0.51%	-7.10%
C18:1n7			-37.8%	-24.9%	-18.4%	-12.9%	-21.6%
C18:1n9	-10.0%	-8.29%	-5.51%	-10.7%	-3.79%	-0.79%	-6.90%
C18:2n6	-0.63%	-4.77%	0.00%	-1.90%	4.10%	6.32%	-0.32%
C18:3n3	-15.1%	-11.6%	-6.11%	-21.0%	-7.59%	-13.4%	-12.5%
C18:3n6	-4.61%	-7.37%	-1.65%	-19.5%	-3.60%	-5.45%	-5.03%
C20:0							
C20:1n9							
C20:2n6							
C20:3n6	-10.2%	-8.15%	0.51%	-13.7%	-0.71%	-6.83%	-7.49%
C20:4n6	-13.3%	-10.7%	-2.27%	-18.9%	1.40%	-1.26%	-6.47%
C20:5n3	-19.8%	-7.08%	-7.24%	-15.0%	-14.1%	-14.0%	-14.0%
C22:0	0.00%	0.00%	0.00%	-7.82%	-22.1%	-6.61%	-3.30%
C22:1n9							
C22:4n6	-19.7%	-25.6%	-13.6%	-28.0%	-15.6%	-19.0%	-19.4%
C22:5n3	-15.4%	-14.4%	-3.38%	-15.7%	-12.5%	-6.37%	-13.4%
C22:5n6							
C22:6n3	-10.4%	-5.83%	-4.41%	-14.0%	-10.4%	-11.23%	-10.4%
C24:0	2.28%	4.21%	11.39%	6.57%	-4.71%	0.00%	3.24%
C24:1n9	-0.42%	-10.3%	-13.8%	-18.1%	-24.2%	-23.4%	-16.0%
median for a sample	-10.2%	-8.15%	-3.90%	-14.3%	-4.89%	-6.72%	

Table 14 (cont). Percent differences from median values by laboratory							
	Lab 13						
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	11.1%	31.8%	61.1%	72.0%	74.5%	70.1%	65.6%
C14:1n5	-3.27%	16.1%	51.0%	44.3%	44.3%	42.9%	43.6%
C16:0	53.1%	55.9%	81.4%	94.2%	102%	102%	87.8%
C16:1n7	38.8%	60.0%	90.9%	92.6%	101%	96.2%	91.7%
C18:0	50.1%	47.1%	76.0%	90.6%	87.0%	104%	81.5%
C18:1n7	39.3%	49.9%	51.7%	101%	105%	125%	76.6%
C18:1n9	56.2%	57.4%	94.4%	110%	108%	121%	101%
C18:2n6	70.6%	74.5%	113.2%	140%	134%	143%	124%
C18:3n3	71.1%	79.7%	119.9%	120%	129%	123%	120%
C18:3n6	68.4%	76.2%	116.3%	118%	122%	129%	117%
C20:0	-57.4%	-60.7%	-41.2%	-20.7%	-52.8%	-10.4%	-47.0%
C20:1n9	25.7%	34.7%	39.8%	97.9%	82.6%	96.2%	61.2%
C20:2n6	132%	137%	180%	203%	208%	237%	191%
C20:3n6	61.5%	69.9%	125%	128%	133%	122%	124%
C20:4n6	62.2%	68.5%	106%	124%	136%	125%	115%
C20:5n3	47.1%	73.9%	102%	124%	100%	105%	101%
C22:0	-74.2%	-83.2%	-78.7%	-63.4%	-84.3%	-57.7%	-76.5%
C22:1n9	-3.2%	-31.9%	369%	336%	224%	303%	263%
C22:4n6	46.7%	26.4%	88.4%	89.4%	94.5%	96.3%	88.9%
C22:5n3	54.6%	50.7%	121%	144%	129%	153%	125%
C22:5n6	34.4%	37.9%	100%	102%	96.1%	93.0%	94.5%
C22:6n3	58.2%	67.4%	109%	126%	111%	108%	109%
C24:0	-77.7%	-80.3%	-76.4%	-76.2%	-84.9%	-84.9%	-79.0%
C24:1n9	-90.6%	-89.5%	-88.1%	-85.3%	-91.6%	-88.9%	-89.2%
median for a sample	46.9%	50.3%	92.7%	102%	101%	104%	

Table 14 (cont). Percent differences from median values by laboratory							
Lab 14							
Code	Unk 01	Unk 02	Unk 03	SRM 2378-1	SRM 2378-2	SRM 2378-3	median across samples
C14:0	68.0%	192%	115%	103%	102%	56.0%	103%
C14:1n5	0.00%	37.7%	30.9%	-1.63%	-12.9%	-27.8%	-0.82%
C16:0	76.4%	95.4%	41.3%	-91.3%	53.2%	48.6%	50.9%
C16:1n7	162%	175%	197%	140%	146%	92.3%	154%
C18:0	179%	228%	147%	148%	159%	118%	153%
C18:1n7	2359%	2773%	2651%	2380%	2922%	2838%	2712%
C18:1n9	67.6%	78.8%	49.4%	45.1%	28.0%	30.8%	47.3%
C18:2n6	-7.88%	-3.59%	-1.47%	-8.78%	-15.4%	-29.1%	-8.33%
C18:3n3							
C18:3n6							
C20:0	182%	197%	139%	107%	139%	96.0%	139%
C20:1n9	116%	306%	190%	321%	318%	117%	248%
C20:2n6	169%	204%	169%	141%	145%	104%	157%
C20:3n6	257%	279%	240%	225%	231%	173%	235%
C20:4n6	219%	288%	235%	238%	237%	177%	236%
C20:5n3	1185%	388%	508%	370%	466%	403%	435%
C22:0	532%	584%	381%	395%	328%	387%	391%
C22:1n9	1831%	2986%	1618%	737%	1378%	589%	1498%
C22:4n6	557%	524%	533%	506%	503%	451%	515%
C22:5n3	198%	29%	153%	-12%	80%	132%	106%
C22:5n6	1552%	3269%	1395%	4060%	1537%	985%	1544%
C22:6n3	528%	442%	409%	386%	367%	317%	397%
C24:0	939%	974%	751%	776%	697%	703%	764%
C24:1n9	678%	567%	475%	474%	424%	473%	475%
median for a sample	208%	284%	216%	231%	234%	152%	

Appendix A.

Methods reported by the participating laboratories

Table A-1. Procedures used

Table A-2. Calibration information

Table A-3. Additional notes provided by laboratories

Table A-1 Procedures used					
Lab #	1	2	3	4	5
Reporting date	5/26/2015	5/1/2015	5/6/2015	06/01/2015	5/25/2015
Volume of sample extracted (mL):	varied	0.10	0.05	0.100	0.10
Mass of samples extracted (g) (average of 3):					
FAQAP unk01 (gold cap)	0.80	0.1040	0.0489	0.106	0.10
FAQAP unk02 (purple cap)	0.81	0.1044	0.0489	0.105	0.10
FAQAP unk03 (pink cap)	0.77	0.1053	0.0489	0.106	0.10
Mass of samples extracted (g) :					
SRM 2378 level 1 (red cap)	0.62	0.1043	0.0487	0.106	0.10
SRM 2378 level 2 (blue cap)	0.86	0.1040	0.0489	0.106	0.10
SRM 2378 level 3 (green cap)	0.77	0.1049	0.0489	0.104	0.10
Analytical method reference, if available	Sánchez-Ávila N, Mata-Granados JM, Ruiz-Jiménez J, Luque de Castro MD, J Chromatog A 1216 (2009) 6864-6872		Lagerstedt SA, Hinrichs DR, Batt SM, Magera MJ, Rinaldo P, McConnell JP. (2001) Quantitative determination of plasma C8-C26 total fatty acids for the biochemical diagnosis of nutritional and metabolic disorders. Mol Genet Metab. 73:38-45.		
Analytical method used:					
Hydrolysis method	0.4 M KOH methanol followed by 1 M H ₂ SO ₄ methanol		Acid and Base Hydrolysis		
Extraction method	Liquid-liquid	Liquid-liquid Extraction	Liquid Liquid Extraction (LLE)	Modified Folch	Modified Folch
Extraction solvent	hexane with 40 mg/g BHT	Chloroform-Methanol (2:1)	Hexane	2:1 chloroform:methanol	Chloroform:Methanol (2:1)
Extraction time	vortex 30 s each time	2 min	2 minutes	One hour in 2:1 chloroform:methanol	20 min
Extraction - other details	Hexane extraction performed 2x following base addition and 2x following acid addition			Addition of 500uL sodium phosphate buffer, vortex, centrifuge, double extraction of organic phase	constant vortexing
Sample extract cleanup method	none		Hexane LLE from derivatizing reagent		
Derivatization reagent	acidic methanol	METH-PREP II, Grace Davision Discovery Sciences	pentafluorobenzylbromide	14% BF ₃ in methanol	14% Boron Trifluoride
Analytical instrument	GC-FID	Agilent 7890A GC, 5975C MSD	6890N/5973N Gas Chromatograph/Mass Spectrometer	Varian 3900 GC-FID	GC - FID
Column phase	crossbonded polyethylene glycol (FAMEWAX, Restek)	Non bonded, Poly (80%biscyanopropyl/20%cyanopropyl phenyl siloxane) phase	5% phenyl-95% methylpolysiloxane	DB-FFAP	SP-2560
Column length, m	30	30	20m	15	100
Column i.d., mm	0.32	0.25	0.18	0.10	0.25
Column film thickness, µm	0.25	0.20	180	0.10	0.20
Injection method (split, splitless, etc)	split	split	split and splitless	100:1 Split ratio	Split
Method of quantitation:					
ES = external standards (Y/N)			N	Y	Y
Number of ES used			0	28	7
IS = internal standards (Y/N)	yes	Y	Y	Y	Y
Number of IS used	2	1	13	1	1
IS added PRIOR to extraction of sample	yes	Y	Y	Y	Y

Table A-1 Continued					
Lab #	6	7	8	9	10
Reporting date	5/26/2015	reanalysis reported 07/29/2015	06/01/2015	6/1/2015	6/2/2015
Volume of sample extracted (mL):	0.05	0.0031	0.05	0.04	0.10
Mass of samples extracted (g) (average of 3):					
FAQAP unk01 (gold cap)	0.05				0.0956
FAQAP unk02 (purple cap)	0.05				0.0966
FAQAP unk03 (pink cap)	0.05				0.0973
Mass of samples extracted (g) :					
SRM 2378 level 1 (red cap)	0.05				0.0952
SRM 2378 level 2 (blue cap)	0.05				0.0954
SRM 2378 level 3 (green cap)	0.05				0.0960
Analytical method reference, if available:	in house method (with saponification, lipid extraction and derivatization performed in one-step method)			Bagga D, Capone S, Wang HJ, Heber D, Lill M, Chap L, Glasphy JA. J Nat Cancer Ins 1997; 89:1123-1131.	Lagertedt S, Hinrichs D, Batt S, Magera M, Rinaldo P, McConnell J. Quantitative Determination of Plasma C8-C26 Total Fatty Acids for the Biochemical Diagnosis of Nutritional and Metabolic Disorders. Mol Genet & Metab 2001; 73: 38-45.
Analytical method used:					
Hydrolysis method	KOH (Hydroxide Potassium)		0.5M dry methanolic sodium methoxide (as part of derivatization)	Add sample to 1ml methanol:benzene (4:1). Add 100 ul acetyl chloride. Heat for 60 minutes at 100 C.	Acid/Base
Extraction method	Liquid-liquid extraction	Liquid extraction	Liquid/Liquid (Smedes. 1999. <i>Analyst.</i> 124, 1711-18)		Liquid-liquid
Extraction solvent	n-Heptane	0.001% BHT in Methanol	1.5mL 8:10:11 (v/v/v) 2-propanol:cyclohexane:0.1M ammonium acetate		hexane
Extraction time	1 min	Shake at 300 rpm for 15 min	6 min		20-30 min per extraction
Extraction - other details	Re-extraction	Follow by 90% Acetonitrile	Transfer upper phase, 2nd extract with 0.57mL cyclohexane	Cool sample to room T and add 4 ml of potassium carbonate (6%). Centerfuge and inject supernatant into GC.	triple extraction via automated liquid handler
Sample extract cleanup method	-		Evaporate to dryness and reconstitute in 1:1 methanol/toluene		Speedvac
Derivatization reagent	BF3 methanolic solution		0.5M anhydrous MeO ⁻ Na ⁺ (1hr @ 60°C) / 3N MeOH-HCl (30min @ 60°C)		PFBBr - pentafluorobenzyl bromide
Analytical instrument	GC-FID Bruker SCION 436-GC	LC-MS/MS	Agilent 6890 Plus+ GC, 5973N MSD, 7683 Injector. MSD operated in SIM/Scan mode. Quantification on SIM signal.	Agilent Technologies 5890A gas chromatograph	GC/MS
Column phase	high polarity cyanopropyl stationary phase (CP-Sil 88, Agilent J&W)	C18	DB-225ms (i.e. 50%-Cyanopropylphenyl-dimethylpolysiloxane)	SP2380 stabilized phase fused silica capillary column (Sigma-Aldrich)	90% biscyanopropyl/10% phenylcyanopropyl polysiloxane
Column length, m	50	0.005	30	30	60
Column i.d., mm	0.25	2.1	0.25	0.32	0.25
Column film thickness, µm	0.20	3	0.25	0.20	0.20
Injection method (split, splitless, etc)	split (1:25)		splitless	split injection	split
Method of quantitation:					
ES = external standards (Y/N)	Y		N		N
Number of ES used	1 mixwith 37 FAME		0		
IS = internal standards (Y/N)	Y	Y	Y	C17:0	Y
Number of IS used	1	1	1	1	
17					
IS added PRIOR to extraction of sample (Y/N)	Y	Y	Y		Y

Table A-1 Continued				
Lab #	11	12	13	14
Reporting date	6/4/2015	6/5/2015	06/08/15	07/24/15
Volume of sample extracted (mL):	0.10	0.20	0.250	0.20
Mass of samples extracted (g) (average of 3):				
FAQAP unk01 (gold cap)		0.20	0.261	
FAQAP unk02 (purple cap)		0.20	0.260	
FAQAP unk03 (pink cap)		0.20	0.261	
Mass of samples extracted (g) :				
SRM 2378 level 1 (red cap)		0.20	0.259	
SRM 2378 level 2 (blue cap)		0.20	0.260	
SRM 2378 level 3 (green cap)		0.20	0.260	
Analytical method reference, if available	Lagerstedt SA, Hinrichs DR, Batt SM, Magera MJ, Rinaldo P, McConnell JP. Quantitative determination of plasma C8-C26 total fatty acids for the biochemical diagnosis of nutritional and metabolic disorders. Mol Genet Metab 2001;73:38-45			Lepage G, Roy C (1986) Direct transesterification of all classes of lipids in a one-step reaction. J Lip Res 27:114-120
Analytical method used:				
Hydrolysis method	Acid hydrolysis followed by basic hydrolysis and re-acidification	Acetic acid with Methanol	Alkaline 0.5M KOH in methanol	Not applicable
Extraction method	liquid-liquid	Liquid/Liquid Extraction	Centrifugation	Direct transesterification (Lepage
Extraction solvent	Hexane	Hexane	Hexane	
Extraction time	20 min on rotary mixer	14 per batch; each batch about 8 h for extraction	1 min	2h
Extraction - other details	Extraction solvent evaporated, samples derivatized then reconstituted in hexane + 0.5N HCl		x3	
Sample extract cleanup method	Centrifugation of samples and removal of supernatant for injection	None	na	centrifugation
Derivatization reagent	2,3,4,5,6-Pentafluorobenzyl bromide (10% solution in acetonitrile)	Methyl ester is formed from the methano	Boron Trifluoride in Methanol 14%	acetyl chloride
Analytical instrument	Agilent 6890 GC/5975C CI MSD in negative ion mode	Agilent MSD 5973N, Agilent GC 6890N	Agilent 6890 Plus	Thermo Scientific Trace Ultra Gas chromatograph coupled to an ISQ mass spectrometer with a programmable temperature vaporising (PTV) injector
Column phase	DB-5MS	DB-23	50% cyanopropyl-methylpolysiloxane	highly polar stationary phase (90% biscyanopropyl 10% cyanopropylphenyl polysiloxane, Shimadzu)
Column length, m	30m + 10m guard	60	60	100m
Column i.d., mm	0.25	0.25	0.25	0.25mm
Column film thickness, µm	0.25	0.15	0.15	0.2 µm
Injection method (split, splitless, etc)	Split and splitless injections for different fatty acids	Split	split	The inlet temperature was 250°C, in splitless mode, the column flow was set at 1 mL/min, with a column head pressure of 9 psi, giving an average linear velocity of 19 cm/sec. Purge flow was set to 50 mL/min 1 min after injection.
Method of quantitation:				
ES = external standards (Y/N)	Y	N	Y	none
Number of ES used	37 compounds at 6 levels each		30	none
IS = internal standards (Y/N)	Y	Y	Y	Y
Number of IS used	13 in one solution	4	2	2
IS added PRIOR to extraction of sample	Y	Y	Y	Y

Table A-2 Calibration information										
Lab	Fatty Acid Code	Fatty Acid Name	Lowest std (µmol/L)	Highest std (µmol/L)	LOD (µmol/L)	LOQ (µmol/L)	Curve Type	Weighting	IS used for quantitation	
1	C14:0	Myristic acid	used response factors based on three independently prepared calibration solutions							Myristic-d ₇
	C14:1n5	Myristoleic acid	used response factors based on three independently prepared calibration solutions							Myristic-d ₇
	C16:0	Palmitic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C16:1n7	Palmitoleic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C18:0	Stearic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C18:1n7	cis-Vaccenic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C18:1n9	Oleic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C18:2n6	Linoleic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C18:3n3	alpha-Linolenic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C18:3n6	gamma-Linolenic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C20:0	Arachidic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C20:1n9	11-Eicosenoic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C20:4n6	Arachidonic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C20:5n3	Eicosapentaenoic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C22:0	Docosanoic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C22:1n9	Docosenoic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C22:5n3	Docosapentaenoic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C22:6n3	Docosahexaenoic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C24:0	Lignoceric acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
	C24:1n9	Nervonic acid	used response factors based on three independently prepared calibration solutions							Palmitic-d ₃₁
2	No information provided									
3	C14:0	Myristic acid	12.5	150	0.3	3000	Linear	None	Myristic acid-d ₃	
	C14:1n5	Myristoleic acid	1.25	15	0.013	300	Linear	None	Pentadecanoic acid-d ₄	
	C16:0	Palmitic acid	25	300	2.81	6000	Linear	None	Palmitic-d ₅	
	C16:1n7	Palmitoleic acid	12.5	150	0.045	3000	Linear	None	Myristic acid-d ₃	
	C18:0	Stearic acid	25	300	3.719	6000	Linear	None	Stearic acid-d ₃	
	C18:1n7	cis-Vaccenic acid	25	300	0.089	6000	Linear	None	Stearic acid-d ₄	
	C18:1n9	Oleic acid	25	300	0.21	6000	Linear	None	Stearic acid-d ₅	
	C18:2n6	Linoleic acid	25	300	0.15	6000	Linear	None	Stearic acid-d ₆	
	C18:3n3	alpha-Linolenic acid	12.5	150	0.009	3000	Linear	None	Arachidic acid-d ₃	
	C18:3n6	gamma-Linolenic acid	12.5	150	0.009	3000	Linear	None	Arachidic acid-d ₃	
	C20:0	Arachidic acid	12.5	150	0.25	3000	Linear	None	Arachidic acid-d ₃	
	C20:3n6	homo-gamma-Linolenic acid	0.625	7.5	0.004	150	Linear	None	Docosanoic acid-d ₄	
	C20:4n6	Arachidonic acid	12.5	150	0.021	3000	Linear	None	Arachidic acid-d ₃	
	C20:5n3	Eicosapentaenoic acid	12.5	150	0.019	3000	Linear	None	Arachidic acid-d ₃	
	C22:0	Docosanoic acid	0.625	7.5	0.036	150	Linear	None	Docosanoic acid-d ₄	
	C22:4n6	Docosatetraenoic acid	0.625	7.5	0.002	150	Linear	None	Docosanoic acid-d ₄	
	C22:5n3	Docosapentaenoic acid	0.625	7.5	0.021	150	Linear	None	Docosanoic acid-d ₄	
	C22:5n6	Docosapentaenoic acid	0.625	7.5	0.021	150	Linear	None	Docosanoic acid-d ₄	
	C22:6n3	Docosahexaenoic acid	12.5	150	0.03	3000	Linear	None	Arachidic acid-d ₃	
	C24:0	Lignoceric acid	0.625	7.5	0.029	150	Linear	None	Tetracosanoic acid-d ₄	
C24:1n9	Nervonic acid	0.625	7.5	0.004	150	Linear	None	Tetracosanoic acid-d ₄		
4	C 10:0	Capric acid	5.434	3769.330	0.811	8.111	Linear	Equal weight%	Methyl-nonadecanoate	
	C 12:0	Lauric acid	4.723	3276.041	0.705	7.050	Linear	Equal weight%	Methyl-nonadecanoate	
	C 14:0	Myristic acid	4.177	2896.923	0.623	6.234	Linear	Equal weight%	Methyl-nonadecanoate	
	C 16:0	Palmitic acid	3.743	2596.450	0.559	5.587	Linear	Equal weight%	Methyl-nonadecanoate	
	C 18:0	Stearic Acid	3.392	2352.451	0.506	5.062	Linear	Equal weight%	Methyl-nonadecanoate	
	C 20:0	Arachidic acid	3.100	2150.371	0.463	4.627	Linear	Equal weight%	Methyl-nonadecanoate	
	C 22:0	Docosanoic acid	2.855	1980.263	0.426	4.261	Linear	Equal weight%	Methyl-nonadecanoate	
	C 24:0	Lignoceric acid	2.646	1835.096	0.395	3.949	Linear	Equal weight%	Methyl-nonadecanoate	
	C 12:1	Dodecenoic acid	4.768	3307.163	0.712	7.117	Linear	Equal weight%	Methyl-nonadecanoate	
	C 14:1	Myristoleic acid	4.212	2921.232	0.629	6.286	Linear	Equal weight%	Methyl-nonadecanoate	
	C 16:1	Palmitoleic acid	3.771	2615.961	0.563	5.629	Linear	Equal weight%	Methyl-nonadecanoate	
	C 18:1n-7	cis-Vaccenic acid	3.415	2368.456	0.510	5.097	Linear	Equal weight%	Methyl-nonadecanoate	
	C 18:1n-9	Oleic acid	3.415	2368.456	0.510	5.097	Linear	Equal weight%	Methyl-nonadecanoate	
	C 20:1n-9	11-Eicosenoic acid	3.119	2163.737	0.466	4.656	Linear	Equal weight%	Methyl-nonadecanoate	
	C 22:1n-9	Docosenoic acid	2.871	1991.592	0.429	4.286	Linear	Equal weight%	Methyl-nonadecanoate	
	C 24:1n-9	Nervonic acid	2.660	1844.821	0.397	3.970	Linear	Equal weight%	Methyl-nonadecanoate	
	C 18:2n-6	Linoleic acid	3.438	2384.679	0.513	5.132	Linear	Equal weight%	Methyl-nonadecanoate	
	C 18:3n-6	gamma-Linolenic acid	3.462	2401.127	0.517	5.167	Linear	Equal weight%	Methyl-nonadecanoate	
	C 20:2n-6	11,14-Eicosadienoic acid	3.139	2177.269	0.469	4.685	Linear	Equal weight%	Methyl-nonadecanoate	
	C 20:3n-6	homo-gamma-Linolenic acid	3.159	2190.972	0.471	4.715	Linear	Equal weight%	Methyl-nonadecanoate	
C 20:4n-6	Arachidonic acid	3.179	2204.848	0.474	4.745	Linear	Equal weight%	Methyl-nonadecanoate		
C 22:2n-6	Docosadienoic acid	2.888	2003.051	0.431	4.310	Linear	Equal weight%	Methyl-nonadecanoate		
C 22:4n-6	Docosatetraenoic acid	2.921	2026.370	0.436	4.361	Linear	Equal weight%	Methyl-nonadecanoate		
C 18:3n-3	alpha-Linolenic acid	3.462	2401.127	0.517	5.167	Linear	Equal weight%	Methyl-nonadecanoate		
C 20:3n-3	Eicosatrienoic acid	3.159	2190.972	0.471	4.715	Linear	Equal weight%	Methyl-nonadecanoate		
C 20:5n-3	Eicosapentaenoic acid	3.199	2218.902	0.477	4.775	Linear	Equal weight%	Methyl-nonadecanoate		
C 22:5n-3	Docosapentaenoic acid, n3	2.939	2038.234	0.439	4.386	Linear	Equal weight%	Methyl-nonadecanoate		
C 22:6n-3	Docosahexaenoic acid	2.956	2050.238	0.441	4.412	Linear	Equal weight%	Methyl-nonadecanoate		

Table A-2 (cont) Calibration information									
Lab	Fatty Acid Code	Fatty Acid Name	Lowest std (µmol/L)	Highest std (µmol/L)	LOD (µmol/L)	LOQ (µmol/L)	Curve Type	Weighting	IS used for quantitation
5	No information provided								
6	C12:0	Lauric acid	0.82	399	0.205	0.605	Linear		37FAME mixfromSupelco
	C14:0	Myristic acid	0.82	400	0.199	0.588	Linear		37FAME mixfromSupelco
	C15:0	Heptadecanoic acid	0.41	200	0.2	0.59	Linear		37FAME mixfromSupelco
	C16:0	Palmitic acid	1.24	602	0.193	0.57	Linear		37FAME mixfromSupelco
	C16:1	Palmitoleic acid	0.41	199	0.196	0.578	Linear		37FAME mixfromSupelco
	C17:0	Margaric acid	0.41	200	0.195	0.577	Linear		37FAME mixfromSupelco
	C17:1	10-Heptadecenoic acid	0.41	200	0.193	0.571	Linear		37FAME mixfromSupelco
	C18:0	Stearic acid	0.82	399	0.191	0.564	Linear		37FAME mixfromSupelco
	C18:1n9t	Elaidic acid	0.41	200	0.2	0.592	Linear		37FAME mixfromSupelco
	C18:1n9c	Oleic acid	0.82	399	0.189	0.559	Linear		37FAME mixfromSupelco
	C18:1n7	cis-Vaccenic acid	2.34	600	0.073	0.242	Linear		37FAME mixfromSupelco
	C19:0 (IS)	Nonadecanoic acid	2.34	600	0.18	0.533	Linear		C19:0FAME
	C18:2n6c	Linoleic acid	0.41	200	0.194	0.573	Linear		37FAME mixfromSupelco
	C20:0	Arachidic acid	0.83	402	0.176	0.521	Linear		37FAME mixfromSupelco
	C18:3n6	gamma-Linolenic acid	0.41	200	0.224	0.662	Linear		37FAME mixfromSupelco
	C20:1	11-Eicosenoic acid	0.41	199	0.195	0.575	Linear		37FAME mixfromSupelco
	C18:3n3	alpha-Linolenic acid	0.41	200	0.189	0.558	Linear		37FAME mixfromSupelco
	C20:2	11,14-Eicosadienoic acid	0.41	200	0.193	0.569	Linear		37FAME mixfromSupelco
	C22:0	Docosanoic acid	1.24	601	0.198	0.586	Linear		37FAME mixfromSupelco
	C20:4n6	Arachidonic acid	0.83	403	0.198	0.586	Linear		37FAME mixfromSupelco
	C23:0	Tricosanoic acid	0.41	200	0.19	0.563	Linear		37FAME mixfromSupelco
	C24:0	Lignoceric acid	0.82	399	0.428	1.264	Linear		37FAME mixfromSupelco
	C20:5n3	Eicosapentaenoic acid	0.41	199	0.093	0.276	Linear		37FAME mixfromSupelco
	C24:1	Nervonic acid	0.41	200	0.19	0.561	Linear		37FAME mixfromSupelco
	C22:4n6	Docosatetraenoic acid	2.34	600	0.073	0.242	Linear		37FAME mixfromSupelco
	C22:5n3	Docosapentaenoic acid	2.34	600	0.073	0.242	Linear		37FAME mixfromSupelco
	C22:5n6	Docosapentaenoic acid	2.34	600	0.073	0.242	Linear		38FAME mixfromSupelco
	C22:6n3	Docosahexaenoic acid	0.41	201	0.199	0.588	Linear		37FAME mixfromSupelco
7	C20:4n6	Arachidonic acid	317	2952			Linear	1/x	Docosahexaenoic-d ₅
	C20:5n3	Eicosapentaenoic acid	12.5	116			Linear	1/x	Docosahexaenoic-d ₅
	C22:6n3	Docosahexaenoic acid	38.1	354			Linear	1/x	Docosahexaenoic-d ₅
8	C14:0	Myristic acid	0.0495	16.5	2.29		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C14:1n5	Myristoleic acid	0.00832	2.77	0.384		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C16:0	Palmitic acid	0.592	197	27.3		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C16:1n7	Palmitoleic acid	0.0248	7.45	1.15		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:0	Stearic acid	0.134	40.2	6.19		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:1n7	cis-Vaccenic acid	0.0295	9.85	1.36		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:1n9	Oleic acid	0.27	89.9	12.5		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:2n6	Linoleic acid	0.204	67.9	9.41		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:3n3	alpha-Linolenic acid	0.0362	10.9	1.67		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:3n6	gamma-Linolenic acid	0.0134	4.03	0.621		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:0	Arachidic acid	0.00613	2.04	0.283		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:1n9	11-Eicosenoic acid	0.0123	4.11	0.569		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:2n6	11,14-Eicosadienoic acid	0.00703	2.34	0.325		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:3n6	homo-gamma-Linolenic acid	0.0359	12.0	1.66		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:4n6	Arachidonic acid	0.344	115	15.9		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:5n3	Eicosapentaenoic acid	0.051	17.00	2.35		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C22:0	Behenic acid	0.00564	1.88	0.261		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C22:1n9	cis-Erucic acid	0.00753	2.51	0.348		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C22:4n6	Adrenic acid	0.027	2.7	1.25		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C22:5n3	Docosapentaenoic acid	0.0227	6.81	1.05		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C22:5n6	Osbond acid	0.026	2.60	1.20		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C22:6n3	Docosahexaenoic acid	0.0627	18.8	2.90		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C24:0	Lignoceric acid	0.00523	1.74	0.242		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C24:1n9	Nervonic acid	0.00836	27.9	0.387		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C12:0	Lauric acid	0.0373	12.4	1.72		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C15:0	Pentadecanoic acid	0.00781	2.60	0.361		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C17:0	Margaric acid	0.0234	7.03	1.08		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C18:4n3	Stearidonic acid	0.00124	0.412	0.0571		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C19:0	Nonadecanoic acid	0.0064	2.13	0.296		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	9c,11t-C18:2n6	Rumenic acid	0.00735	2.45	0.339		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:3n3	11,14,17-Eicosatrienoic acid	0.0055	1.83	0.254		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C21:0	Heneicosanoic acid	0.00309	1.03	0.143		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	C20:4n3	Arachidonic acid (Omega 3)	0.00299	0.995	0.138		quadratic	Equal	Glyceryl Tri(hexadecanoate-d31)
	Notes:								
	Concentrations for Lowest std and Highest std are as measured at the instrument.								
	LOD is defined as lowest standard concentration converted to calculated concentration in sample.								
	LOQ was not determined.								
	Highest sample concentrations were no more than 104% of the highest standard concentration.								
	Lowest sample concentrations were at least 70% above the lowest standard concentration.								
	Extraction surrogates for cholesterylesters, phosphatidylcholine, also used in extraction and showed equivalent recoveries as triglyceride.								
	Mass spectral detector operated in SIM/Scan mode. Quantification on SIM signals with minimum of 1 qualifier ion. All peak integrations subject to manual review.								

Table A-2 (cont) Calibration information									
Lab	Fatty Acid Code	Fatty Acid Name	Lowest std (µmol/L)	Highest std (µmol/L)	LOD (µmol/L)	LOQ (µmol/L)	Curve Type	Weighting	IS used for quantitation
9	C14:0	Myristic acid	NA	NA					
	C14:1n5	Myristoleic acid	NA	NA					
	C16:0	Palmitic acid	151.7	2428.3					
	C16:1n7	Palmitoleic acid	51.9	832.4					
	C18:0	Stearic acid	91.7	1467.9					
	C18:1n7	<i>cis</i> -Vaccenic acid	NA	NA					
	C18:1n9	Oleic acid	92.4	1479.0					
	C18:2n6	Linoleic acid	46.7	749.1					
	C18:3n3	<i>alpha</i> -Linolenic acid	47.0	750.5					
	C18:3n6	<i>gamma</i> -Linolenic acid	NA	NA					
	C20:0	Arachidic acid	NA	NA					
	C20:1n9	11-Eicosenoic acid	NA	NA					
	C20:2n6	11,14-Eicosadienoic acid	NA	NA					
	C20:3n6	<i>homo-gamma</i> -Linolenic acid	NA	NA					
	C20:4n6	Arachidonic acid	39.7	654.1					
	C20:5n3	Eicosapentaenoic acid	36.2	580.7					
	C22:0	Docosanoic acid	NA	NA					
	C22:1n9	Docosenoic acid	NA	NA					
	C22:4n6	Docosatetraenoic acid	NA	NA					
	C22:5n3	Docosapentaenoic acid	39.9	636.7					
	C22:5n6	Docosapentaenoic acid	NA	NA					
	C22:6n3	Docosahexaenoic acid	NA	NA					
	C24:0	Lignoceric acid	NA	NA					
	C24:1n9	Nervonic acid	NA	NA					
10	C18:3n3	<i>alpha</i> -Linolenic acid	6.62	662	1.54	not available	linear	1/x ²	<i>alpha</i> -Linolenic-d14
	C20:0	Arachidic acid	0.95	95.1	0.82	not available	linear	1/x ²	Arachidic-d39
	C20:4n6	Arachidonic acid	23.0	2300	7.34	not available	linear	1/x ²	Arachidonic-d8
	C10:0	Capric acid	0.51	45.7	1.59	not available	quadratic	1/x ²	Capric-d3
	C22:0	Docosanoic acid	1.94	194	0.68	not available	linear	1/x ²	Docosanoic-d4
	C22:6n3	Docosahexaenoic acid	8.06	806	1.84	not available	linear	1/x ²	Docosahexaenoic-d5
	C22:5n3	Docosapentaenoic n-3 acid	2.54	254	0.55	not available	linear	1/x ²	Docosahexaenoic-d5
	C22:5n6	Docosapentaenoic n-6 acid	1.50	150	0.24	not available	linear	1/x ²	Docosahexaenoic-d5
	C22:4n6	Docosatetraenoic acid	1.55	155	0.31	not available	quadratic	1/x ²	Docosahexaenoic-d5
	C20:2n6	11,14-Eicosadienoic acid	0.97	96.8	0.31	not available	quadratic	1/x ²	Arachidic-d39
	C20:1n9	11-Eicosenoic acid	1.02	102	0.87	not available	quadratic	1/x ²	Arachidic-d39
	C20:5n3	Eicosapentaenoic acid	3.97	397	0.79	not available	quadratic	1/x ²	Eicosapentaenoic-d5
	C20:3n9	5Z, 8Z, 11Z-Eicosatrienoic acid	0.91	71.8	0.39	not available	quadratic	1/x ²	Arachidic-d39
	C18:3n6	<i>gamma</i> -Linolenic acid	2.99	299	0.42	not available	linear	1/x ²	<i>alpha</i> -Linolenic-d14
	C20:3n6	<i>homo-gamma</i> -Linolenic acid	4.63	463	1.14	not available	quadratic	1/x ²	<i>alpha</i> -Linolenic-d14
	C12:0	Lauric acid	1.00	84.0	2.33	not available	quadratic	1/x ²	Lauric-d3
	C24:0	Lignoceric acid	1.40	140	1.09	not available	linear	1/x ²	Tetracosanoic-d4
	C18:2n6	Linoleic acid	86.4	8635	22.6	not available	linear	1/x ²	13C-Linoleic
	C14:1n5	Myristoleic acid	1.49	149	0.29	not available	quadratic	1/x ²	Myristic-d27
	C14:0	Myristic acid	10.8	1075	4.90	not available	quadratic	1/x ²	Myristic-d27
	C17:0	Margaric acid	2.85	52.2	3.36	not available	quadratic	1/x	Margaric-d3
	C24:1n9	Nervonic acid	1.99	199	0.69	not available	quadratic	1/x ²	Tetracosanoic-d4
	C18:1n9	Oleic acid	89.5	8949	17.7	not available	linear	1/x ²	13C-Oleic
	C15:0	Pentadecanoic acid	0.50	54.7	0.75	not available	linear	1/x ²	Pentadecanoic-d3
	C16:1n7	Palmitoleic acid	25.3	2530	6.56	not available	quadratic	1/x ²	Palmitoleic-d14
	C16:0	Palmitic acid	95.9	9591	78.1	not available	quadratic	1/x ²	Palmitic-d31
	C18:4n3	Stearidonic acid	0.49	50.3	0.24	not available	quadratic	1/x	Arachidic-d39
	C18:0	Stearic acid	27.2	2721	39.1	not available	quadratic	1/x ²	Stearic-d35
	C23:0	Tricosanoic acid	0.83	47.2	0.90	not available	linear	1/x ²	Docosanoic-d4
	C18:1n7	<i>cis</i> -Vaccenic acid	7.32	732	2.31	not available	quadratic	1/x ²	13C-Oleic

Table A-2 (cont) Calibration information									
Lab	Fatty Acid Code	Fatty Acid Name	Lowest std (µmol/L)	Highest std (µmol/L)	LOD (µmol/L)	LOQ (µmol/L)	Curve Type	Weighting	IS used for quantitation
11	C8:0	Octanoic acid	14	120			quadratic	equal	C8:0 D3
	C10:0	Decanoic acid	13	110			quadratic	equal	C10:0 D3
	C10:1	9-Decenoic acid	16	120			quadratic	equal	C10:0 D3
	C12:0	Lauric acid	12	101			quadratic	equal	C12:0 D3
	C12:1w1	11-Dodecenoic acid	13	108			quadratic	equal	C12:0 D3
	C12:1w7	cis-5-Dodecenoic acid	14	115			quadratic	equal	C12:0 D3
	C14:0	Myristic acid	44	365			quadratic	equal	C14:0 D3
	C14:1	Myristoleic acid	12	102			quadratic	equal	C15:0 D3
	C15:0	Pentadecanoic acid	23	190			quadratic	equal	C15:0 D3
	C16:0	Palmitic acid	468	3900			quadratic	equal	C16:0 D3
	C16:1w7	Palmitoleic acid	127	1058			quadratic	equal	C14:0 D3
	C17:0	Heptadecanoic acid	22	180			quadratic	equal	C15:0 D3
	C18:0	Stearic acid	89	745			quadratic	equal	C18:0 D3
	C18:1w7	Vaccenic acid	241	2010			quadratic	equal	C18:0 D3
	C18:1w9	Oleic acid	600	5000			quadratic	equal	C18:0 D3
	C18:2w6	Linoleic acid	474	3950			quadratic	equal	C18:0 D3
	C18:3w3	α-linolenic acid	55	460			quadratic	equal	C18:0 D3
	C18:3w6	γ-linolenic acid	60	500			quadratic	equal	C18:0 D3
	C19:0	Nonadecanoic acid	5	43			quadratic	equal	C22:0 D3
	C20:0	Arachidic acid	115	960			quadratic	equal	C20:0 D3
	C20:3w6	Eicosatrienoic acid (w6) (Homo-γ-linolenic acid)	13	112			quadratic	equal	C22:0 D3
	C20:3w9	5,8,11-Eicosatrienoic acid (MEAD)	7	55			quadratic	equal	C22:0 D3
	C20:4w6	Arachidonic acid	121	1000			quadratic	equal	C20:0 D3
	C20:5w3	Eicosapentaenoic acid (w3)	78	650			quadratic	equal	C20:0 D3
	C21:0	Heneicosanoic acid	11	95			quadratic	equal	C22:0 D3
	C22:0	Docosanoic acid (Behenic acid)	14	115			quadratic	equal	C22:0 D3
	C22:1w9	Erucic acid (w9)	3	24			quadratic	equal	C22:0 D3
	C22:4w6	Docosatetraenoic acid (w6)	6	46			quadratic	equal	C22:0 D3
	C22:5w3	Docosapentaenoic acid (w3)	25	210			quadratic	equal	C22:0 D3
	C22:5w6	Docosapentaenoic acid	6	50			quadratic	equal	C22:0 D3
	C22:6w3	Docosahexaenoic acid (w3)	13	108			quadratic	equal	C22:0 D3
	C23:0	Tricosanoic acid	12	97			quadratic	equal	C24:0 D4
	C24:0	Tetracosanoic acid	12	101			quadratic	equal	C24:0 D4
	C24:1w9	Nervonic acid (w9)	23	195			quadratic	equal	C24:0 D4
	C26:0	Hexacosanoic acid	1.4	11.3			quadratic	equal	C26:0 D4
	PhA	Phytanic acid	2.6	21.7			quadratic	equal	PhA D3
	PrA	Pristanic acid	0.25	2.05			quadratic	equal	PrA D3
12	C14:0	myristic	2.88	101	0.22	3	quadratic	1/x	Methyl Tridecenoate
	C16:0	palmitic	60.2	1902	7.44	60	quadratic	1/x	Methyl trans-Heptadecenoate
	C16:1	palmitoleic	6.08	192	0.94	6	quadratic	1/x	Methyl Tridecenoate
	C18:0	stearic	28.5	999	1.77	30	quadratic	1/x	Methyl trans-Heptadecenoate
	C18:1n7	vaccenic	6.08	192	0.79	6	quadratic	1/x	Methyl Heneicosanoate
	C18:1n9	oleic	60.2	1902	10.26	60	quadratic	1/x	Methyl trans-Heptadecenoate
	C18:2n6	linoleic	60.2	1902	7.29	60	quadratic	1/x	Methyl trans-Heptadecenoate
	C18:3n3	alpha-linolenic	2.88	101	0.2	3	quadratic	1/x	Methyl Heneicosanoate
	C18:3n6	gamma-linolenic	2.88	101	0.19	3	quadratic	1/x	Methyl Heneicosanoate
	C20:3n6	homo-gamma-linolenic	6.08	192	0.67	6	quadratic	1/x	Methyl Heneicosanoate
	C20:4n6	arachidonic	28.5	999	1.56	30	quadratic	1/x	Methyl trans-Heptadecenoate
	C20:5n3	eicosapentaenoic	2.88	101	0.24	3	quadratic	1/x	Methyl Tricosenoate
	C22:0	docosanoic	2.88	101	0.13	3	quadratic	1/x	Methyl Tricosenoate
	C22:4n6	docosatetraenoic	2.88	101	0.16	3	quadratic	1/x	Methyl Tricosenoate
	C22:5n3	docosapentaenoic	2.88	101	0.14	3	quadratic	1/x	Methyl Tricosenoate
	C22:6n3	docosahexaenoic	6.08	192	0.48	6	quadratic	1/x	Methyl Tricosenoate
	C24:0	lignoceric	2.88	101	0.13	3	quadratic	1/x	Methyl Tricosenoate
	C24:1n9	nervonic	2.88	101	0.15	3	quadratic	1/x	Methyl Tricosenoate
13	No information provided								

Table A-2 (cont) Calibration information									
Lab	Fatty Acid Code	Fatty Acid Name	Lowest std (µmol/L)	Highest std (µmol/L)	LOD (µmol/L)	LOQ (µmol/L)	Curve Type	Weighting	IS used for quantitation
14	C6:0	Hexanoic acid	0.078	1536.33	0.03	0.08	quadratic	1/x2	
	C8:0	Octanoic acid	0.064	1263.90	0.02	0.06	quadratic	1/x2	
	C10:0	Decanoic acid	0.027	536.80	0.01	0.03	quadratic	1/x2	
	C11:0	Undecanoic acid	0.051	998.40	0.02	0.05	quadratic	1/x2	
	C12:0	Dodecanoic acid	0.024	466.55	0.01	0.02	quadratic	1/x3	
	C13:0	Tridecanoic acid	0.044	875.77	0.01	0.04	quadratic	1/x4	
	C14:0	Tetradecanoic acid	0.042	825.08	0.01	0.04	quadratic	1/x5	
	C14:1n5t	9-trans-Tetradecenoic acid	0.021	416.01	0.01	0.02	quadratic	1/x6	
	C14:1n5c	9-cis-Tetradecenoic acid	0.042	832.02	0.01	0.04	quadratic	1/x7	
	C15:0	Pentadecanoic acid	0.040	779.97	0.01	0.04	quadratic	1/x8	
	C15:1n5t	10-trans-Pentadecenoic acid	0.020	393.07	0.01	0.02	quadratic	1/x9	
	C15:1n5c	10-cis-Pentadecenoic acid	0.040	786.13	0.01	0.04	quadratic	1/x10	
	C16:0	Hexadecanoic acid	0.056	1109.26	0.02	0.06	quadratic	1/x11	
	C16:1n7t	9-trans-Hexadecenoic acid	0.019	372.54	0.01	0.02	quadratic	1/x12	
	C16:1n7c	9-cis-Hexadecenoic acid	0.038	745.07	0.01	0.04	quadratic	1/x13	
	C17:0	Heptadecanoic acid	0.054	1054.56	0.02	0.05	quadratic	1/x14	
	C17:1n7t	10-trans-Heptadecenoic acid, (10E)	0.036	708.06	0.01	0.04	quadratic	1/x15	
	C17:1n7c	10-cis-Heptadecenoic acid, (10Z)	0.036	708.06	0.01	0.04	quadratic	1/x16	
	C18:0	Octadecanoic acid	0.034	670.02	0.01	0.03	quadratic	1/x17	
	C18:1n12t	6-trans-Octadecenoic acid, (E)-	0.034	674.56	0.01	0.03	quadratic	1/x18	
	C18:1n9t	9-trans-Octadecenoic acid, (E)-	0.051	1011.84	0.02	0.05	quadratic	1/x19	
	C18:1n7t	11-trans-Octadecenoic acid, (E)-	0.017	337.28	0.01	0.02	quadratic	1/x20	
	C18:1n12c	6-cis-Octadecenoic acid, (6Z)-	0.034	674.56	0.01	0.03	quadratic	1/x21	
	C18:1n9c	9-cis-Octadecenoic acid (9Z)-	0.034	674.56	0.01	0.03	quadratic	1/x22	
	C18:1n7c	11-cis-Octadecenoic acid, (Z)-	0.034	674.56	0.01	0.03	quadratic	1/x23	
	C19:0	Nonadecanoic acid					quadratic	1/x24	Nonadecanoic acid
	C18:2n6t	9,12-trans-Octadecadienoic acid (E,E)	0.035	679.19	0.01	0.03	quadratic	1/x25	
	C19:1n12t	7-trans-Nonadecenoic acid, (7E)-	0.016	322.05	0.01	0.02	quadratic	1/x26	
	C19:1n10t	10-trans-Nonadecenoic acid, (10E)-	0.033	644.10	0.01	0.03	quadratic	1/x27	
	C18:2n6c	9,12-cis-Octadecadienoic acid (Z,Z)	0.052	1018.78	0.02	0.05	quadratic	1/x28	
	C20:0	Eicosanoic acid	0.031	612.44	0.01	0.03	quadratic	1/x29	
	C18:3n6c	6,9,12-cis-Octadecatrienoic acid, (6Z,9Z,12Z)-	0.052	1025.78	0.02	0.05	quadratic	1/x30	
	C20:1n9t	11-trans-Eicosenoic acid, (11E)-	0.016	308.13	0.01	0.02	quadratic	1/x31	
	C18:3n3c	9,12,15-cis-Octadecatrienoic acid, (9Z,12Z,15Z)-	0.052	1025.78	0.02	0.05	quadratic	1/x32	
	C20:1n9c	11-cis-Eicosenoic acid, (11Z)-	0.031	616.26	0.01	0.03	quadratic	1/x33	
	C21:0	Heneicosanoic acid	0.030	587.23	0.01	0.03	quadratic	1/x34	
	C20:2n6c	11,14-cis-Eicosadienoic	0.047	930.15	0.02	0.05	quadratic	1/x35	
	C22:0	Docosanoic acid	0.014	282.00	0.00	0.01	quadratic	1/x36	
	C20:3n6c	8,11,14-cis-Eicosatrienoic acid, (8Z,11Z,14Z)-	0.032	624.01	0.01	0.03	quadratic	1/x37	
	C22:1n9t	13-trans-Docosenoic acid, (13E)-	0.014	283.62	0.00	0.01	quadratic	1/x38	
	C20:3n3c	11,14,17-cis-Eicosatrienoic acid	0.032	624.01	0.01	0.03	quadratic	1/x39	
	C22:1n9c	13-cis-Docosenoic acid, (13Z)-	0.029	567.23	0.01	0.03	quadratic	1/x40	
	C20:4n6c	5,8,11,14-cis-Eicosatetraenoic acid)	0.048	941.94	0.02	0.05	quadratic	1/x41	
	C23:0	Tricosanoic acid	0.028	542.53	0.01	0.03	quadratic	1/x42	Tricosanoic acid
	C22:2n6c	13,16-cis-Docosadienoic acid	0.029	570.48	0.01	0.03	quadratic	1/x43	
	C20:5n3	5,8,11,14,17-cis-Eicosapentaenoic acid, (5Z,8Z,11Z,14Z,17Z)-	0.032	631.95	0.01	0.03	quadratic	1/x44	
	C24:0	Tetracosanoic acid	0.013	261.33	0.00	0.01	quadratic	1/x45	
	C24:1n9c	15-cis-Tetracosenoic acid, (15Z)-	0.013	262.71	0.00	0.01	quadratic	1/x46	
	C22:4n6c	7,10,13,16-cis-Docosatetraenoic acid, (7Z,10Z,13Z,16Z)-	0.029	577.12	0.01	0.03	quadratic	1/x47	
	C22:5n6c	4,7,10,13,16-cis-Docosapentaenoic acid, (4Z,7Z,10Z,13Z,16Z)	0.029	580.50	0.01	0.03	quadratic	1/x48	
	C22:5n3c	7,10,13,16,19-cis-Docosapentaenoic acid, (7Z,10Z,13Z,16Z,19Z)-	0.029	580.50	0.01	0.03	quadratic	1/x49	
	C22:6n3c	4,7,10,13,16,19-cis-Docosahexaenoic acid, (4Z,7Z,10Z,13Z,16Z,19Z)	0.030	583.92	0.01	0.03	quadratic	1/x50	

Table A-3 Additional notes provided by laboratories	
Lab #	Note:
3	C18:1n9 used for quantitation of C18:1n7 C22:5n3 used for quantitation of C22:5n6
8	The 50µL plasma sample aliquots were not weighed and density was not determined. Density value above is taken from Wikipedia. Each sample was analyzed in duplicate and the two values averaged. C16:1n7 sits on the right shoulder of C16:0 and touches C16:1n7t to its left C18:1n7 elutes on the right shoulder of C18:1n9 C20:3n6 elutes on the left shoulder of C20:4n6 C20:4n3 and C20:5n3 are partially resolved C21:0 coelutes between C20:4n3 and C20:5n3, but is spectrally resolved cholesteryl-C22:1n9 was used as a surrogate, therefore C22:1n9 was not determined C22:4n6 and C22:5n6 are partially resolved C22:5n3 and C22:6n3 are partially resolved C24:1n9 (Nervonic acid) was not detected.
11	C22:1n9 - probably reading low on our current calibrators. New compound from alternate source to be trialed. Ongoing problems with contamination from an unknown source, causing poor recovery for some analytes. (e.g. C24:1n9, C18). This is noted in some internal standard recoveries, requiring repeat extraction. Unknown effect on stability of this QA material. C14:1 used for quantitation of C15:0 and C16:2 C16:1n7 used for quantitation of C16:2 C26:0 used for quantitation of C26:1
12	C18:1n7 in Unk01 and Unk 02 - Values were found but the qualifier ion ratio did not meet acceptance limits. Data not reported. Possibly an interference. C20:3n6 - we are saying that eicosatrienoic acid and <i>homo-gamma</i> linolenic are synonyms
14	<i>alpha</i> and <i>gamma</i> linolenic acid probably coeluting not able to distinguish between them.

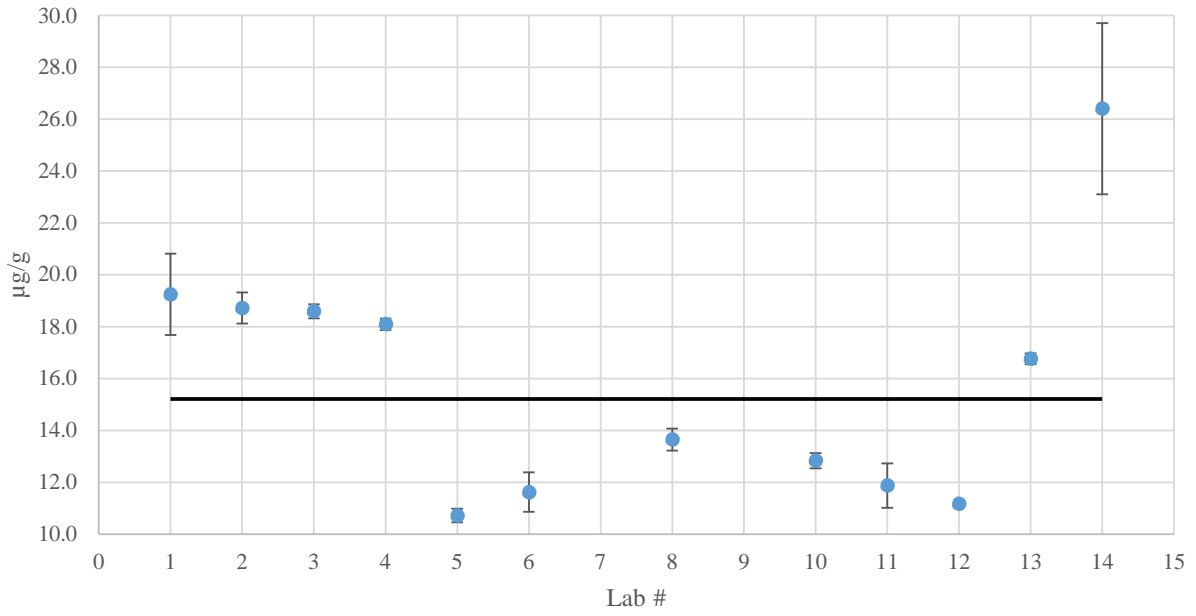
Appendix B.

Charts of interlaboratory data received for the individual fatty acids in each material (in terms of $\mu\text{g/g}$) with the median identified for the three unknown samples and the certified or reference value with associated confidence interval identified for each level of candidate SRM 2378.

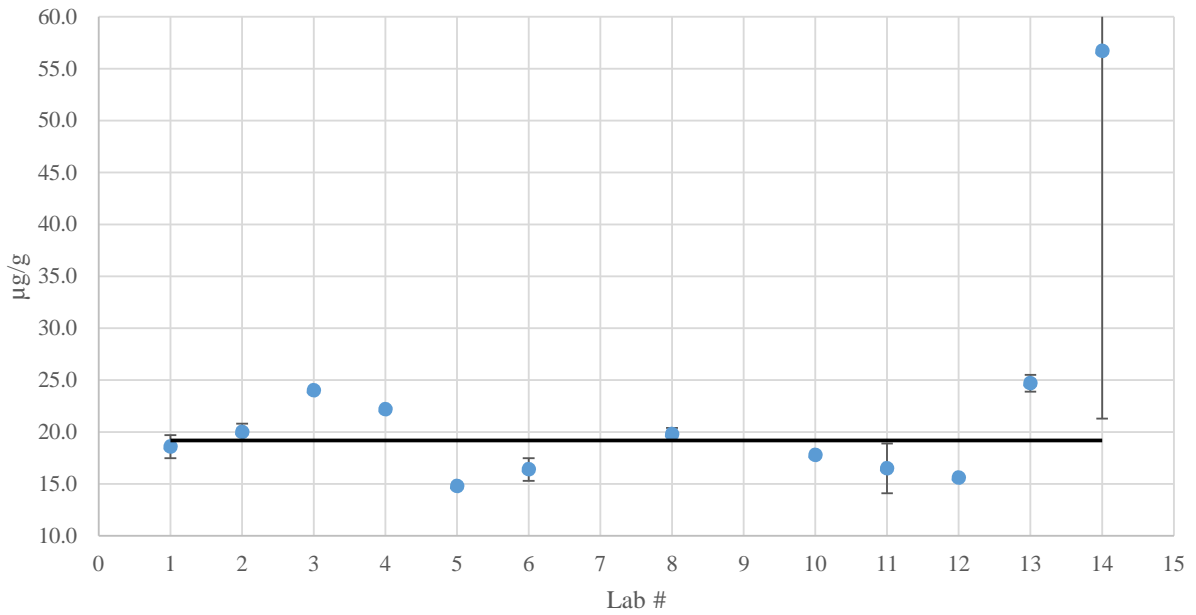
The charts are presented in the order of an individual fatty acid in each of the six materials (unknown 01, unknown 02, unknown 03, SRM 2378-1, SRM 2378-2, and SRM 2378-3) with the fatty acids in the order presented in Table 1. Note if less than three laboratories reported numerical data for a fatty acid, no chart is presented.

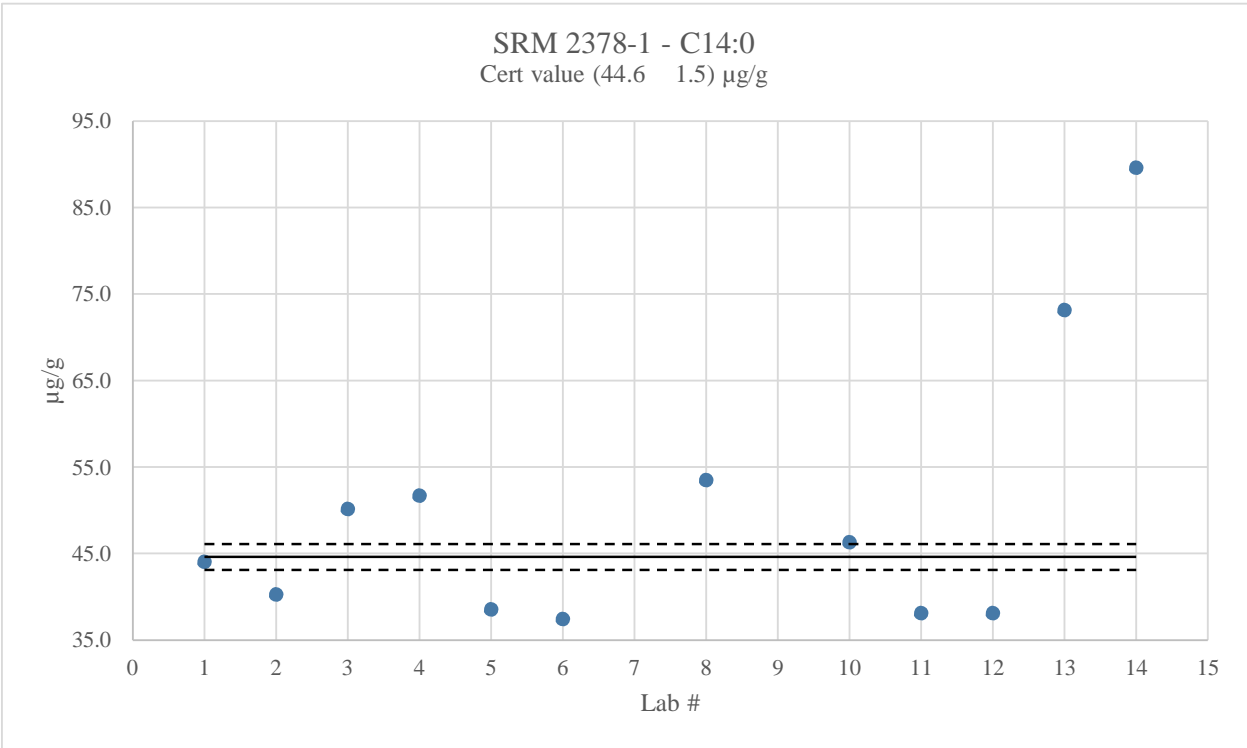
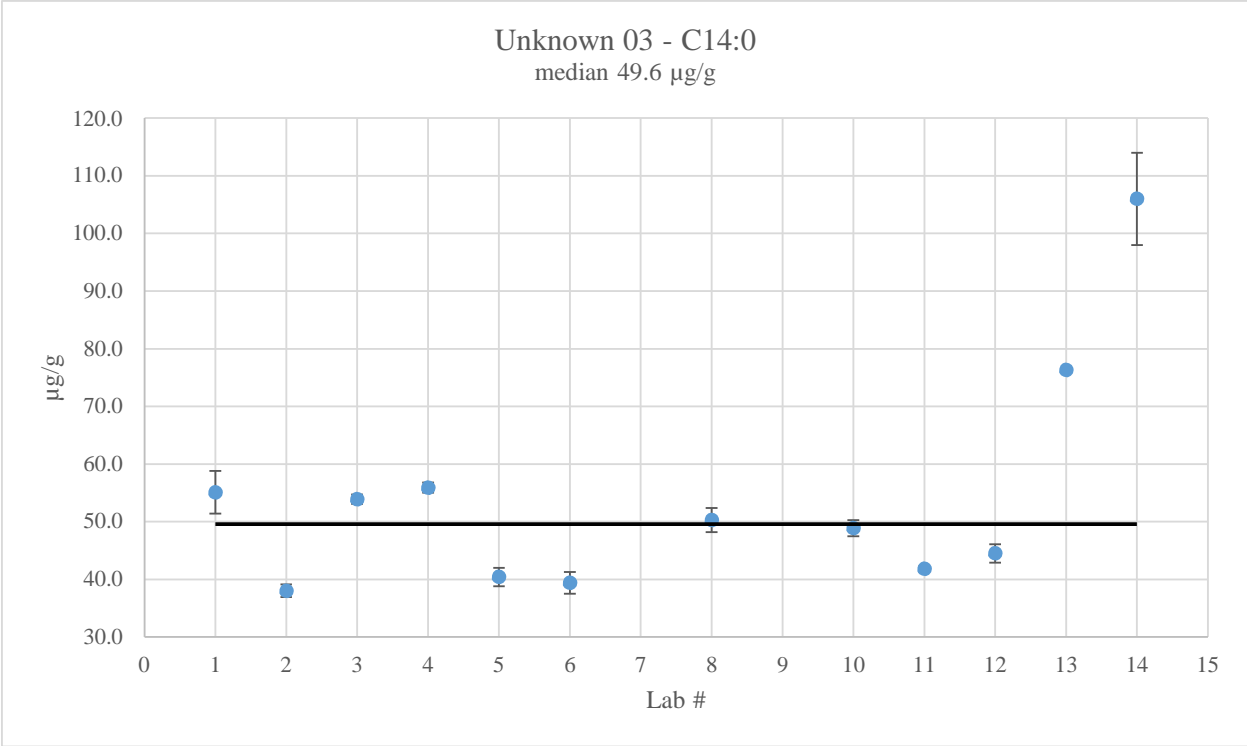
Note that a revised set of data received from lab 8 on September 8, 2015 following an initial review of the interlaboratory data is summarized in Appendix D of this report. They found an error in the concentration of the surrogate (d_{31} C16:0) used for recovery corrections. The data in Appendix D used C22:1n9 for the recovery corrections instead of d_{31} C16:0 which they suspect did not go completely into solution.

Unknown 01 - C14:0
median 15.2 $\mu\text{g/g}$

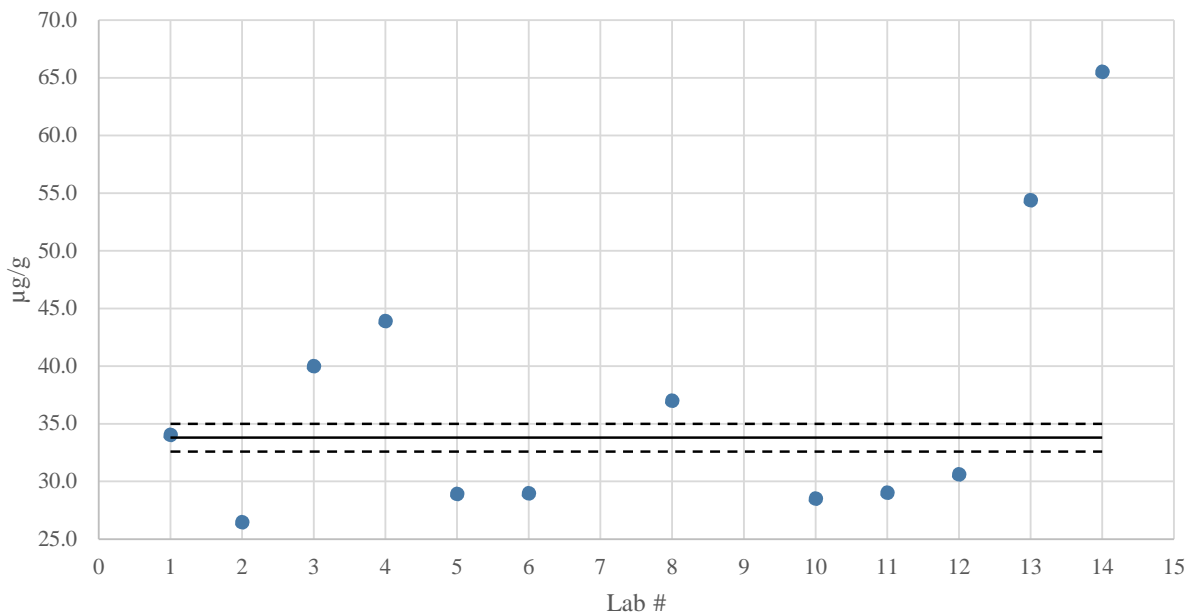


Unknown 02 - C14:0
median 19.2 $\mu\text{g/g}$

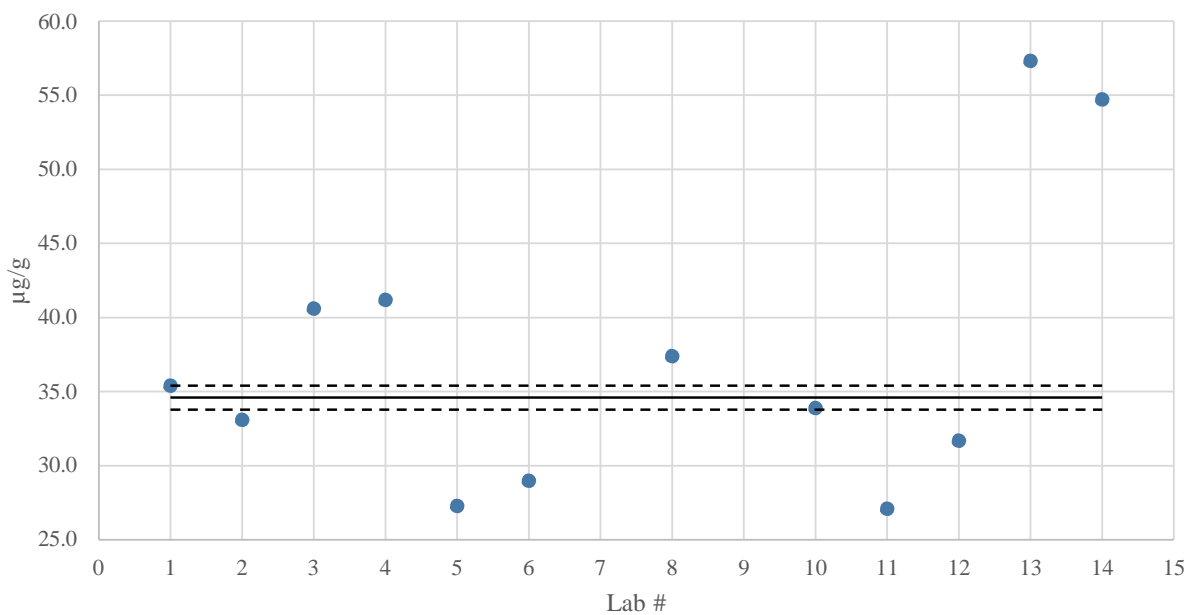




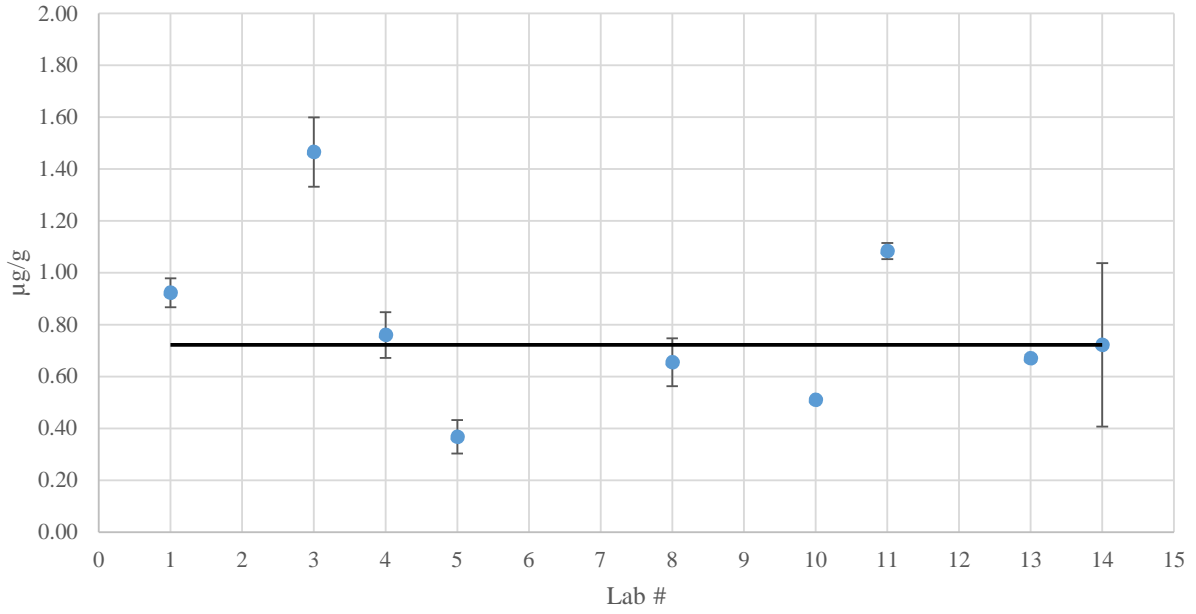
SRM 2378-2 - C14:0
Cert value (33.8 ± 1.2) µg/g



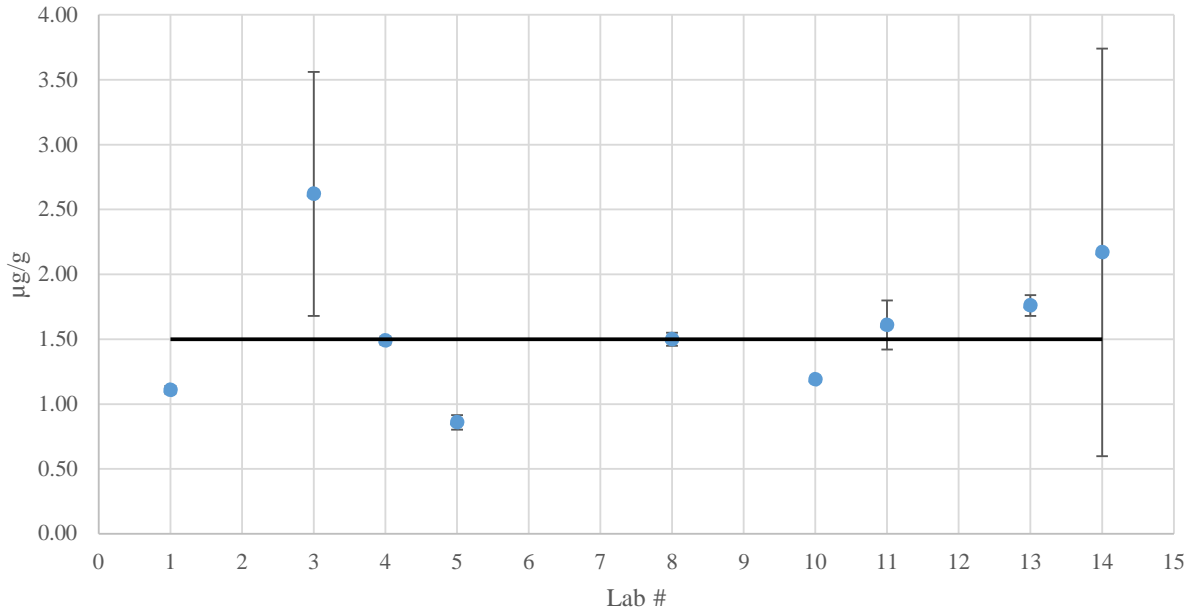
SRM 2378-3 - C14:0
Cert value (34.6 ± 0.8) µg/g



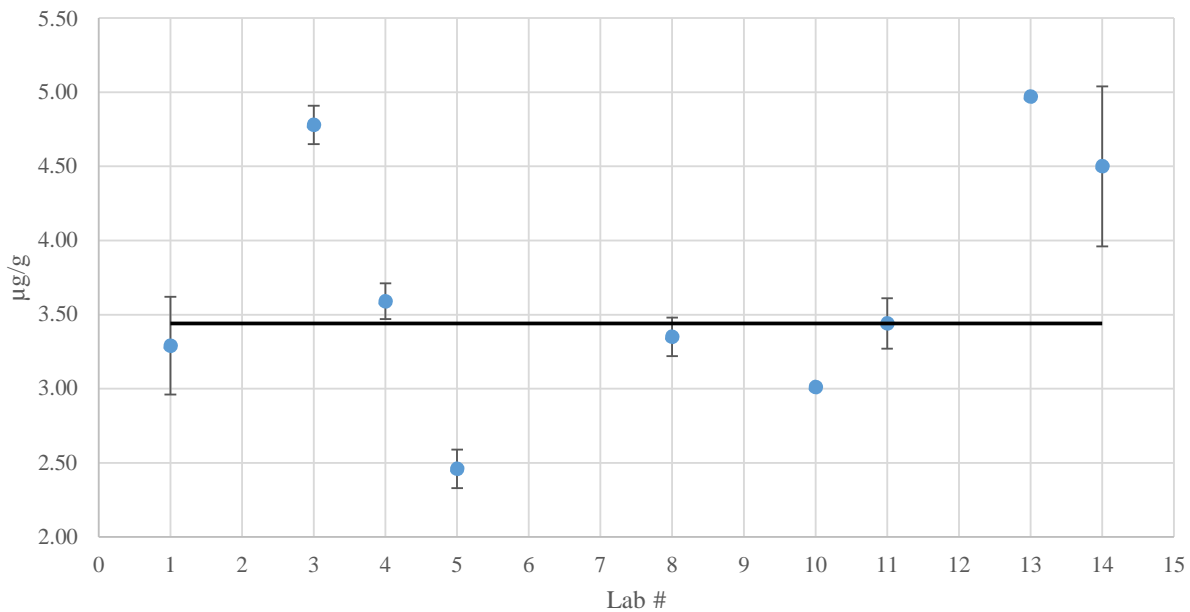
Unknown 01 - C14:1n5
median 0.722 $\mu\text{g/g}$



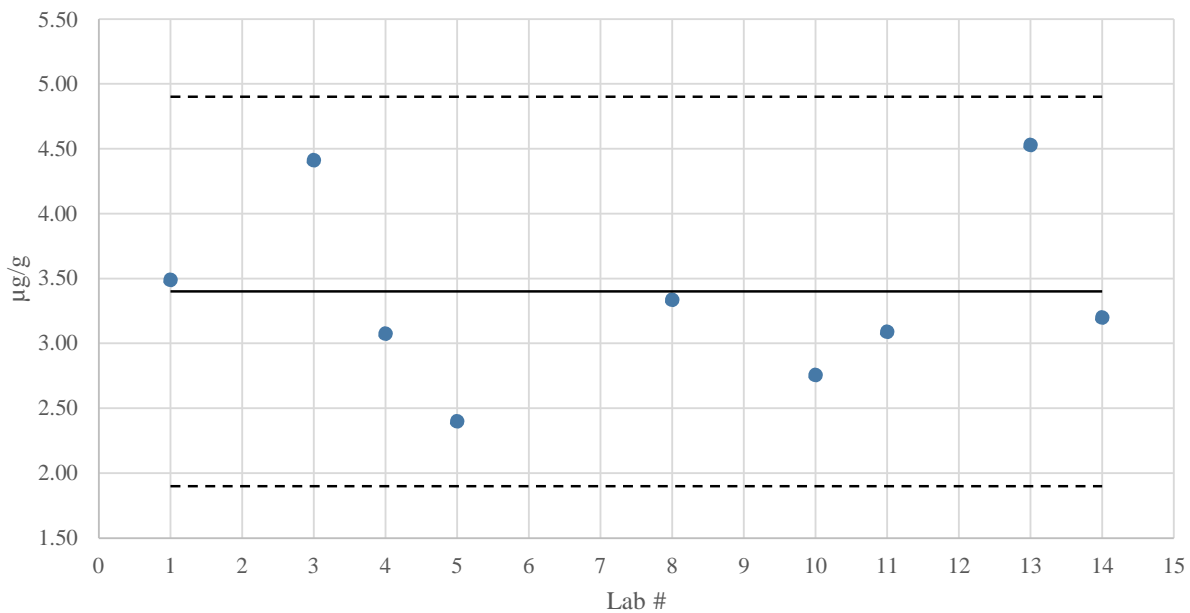
Unknown 02 - C14:1n5
median 1.50 $\mu\text{g/g}$



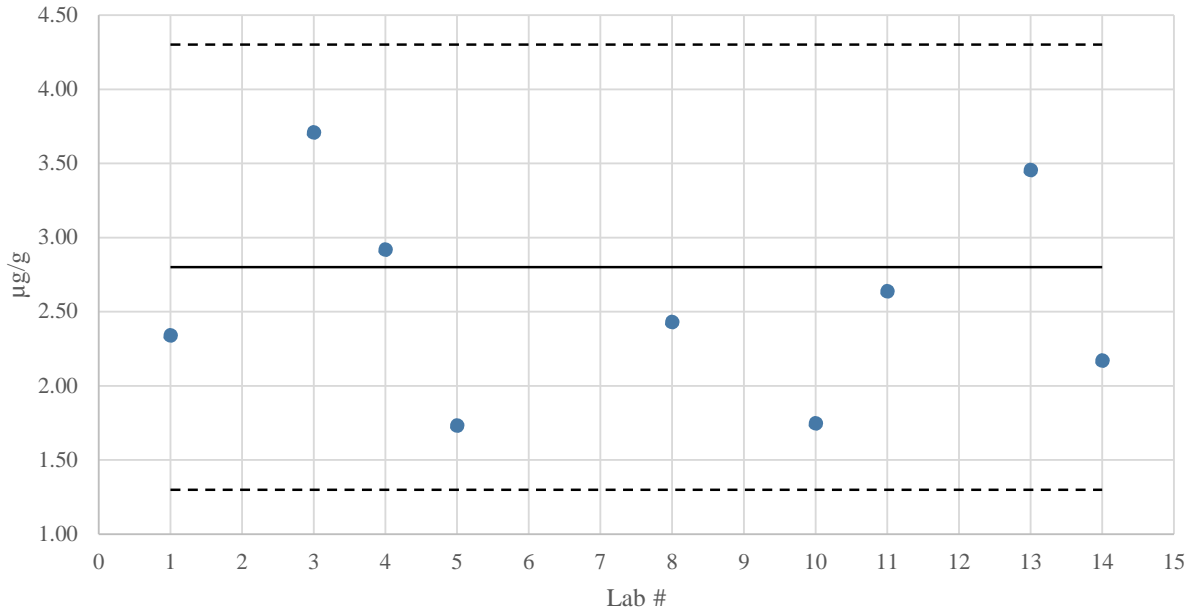
Unknown 03 - C14:1n5
median 3.44 $\mu\text{g/g}$



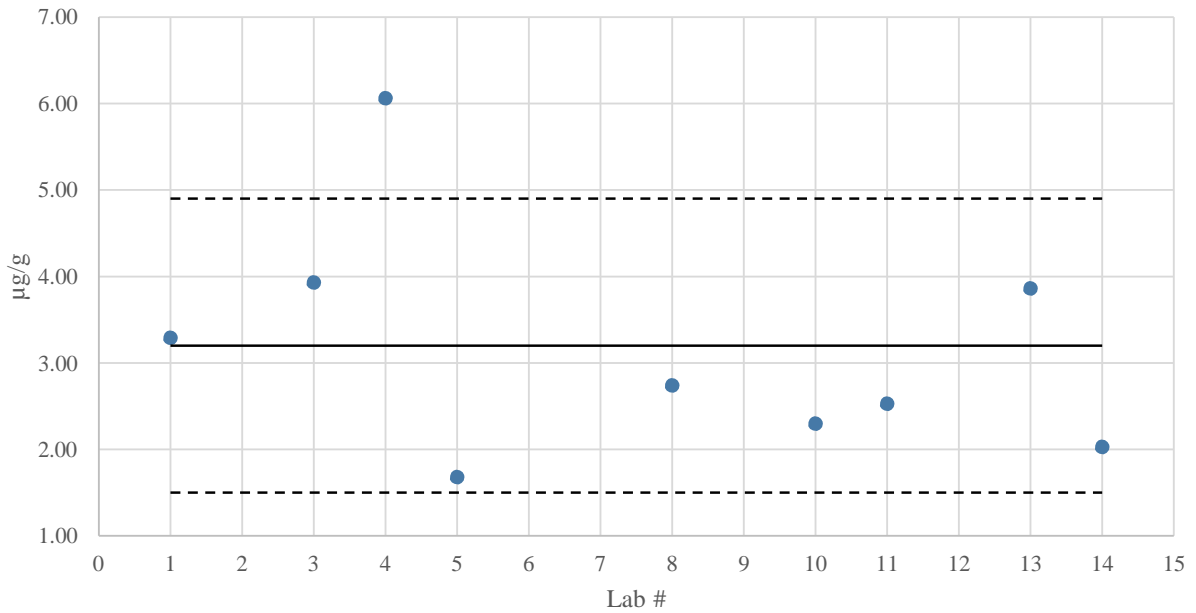
SRM 2378-1 - C14:1n5
Ref value (3.4 1.5) $\mu\text{g/g}$

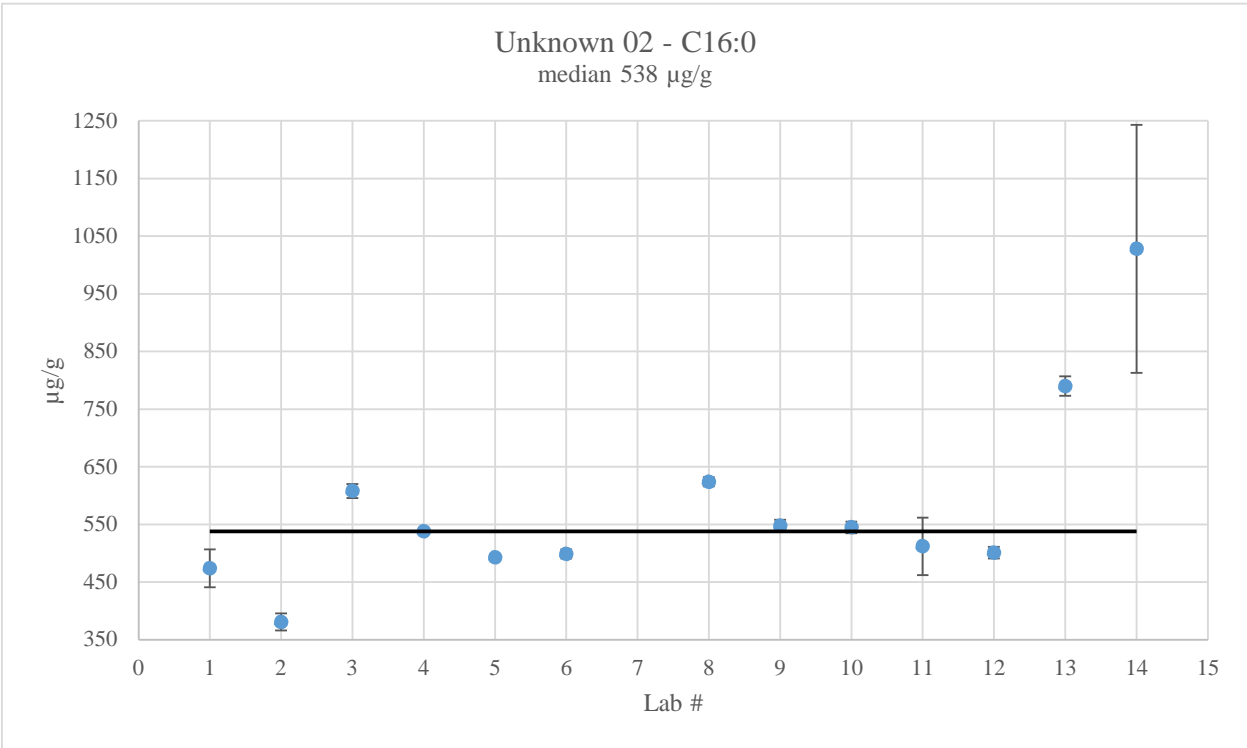
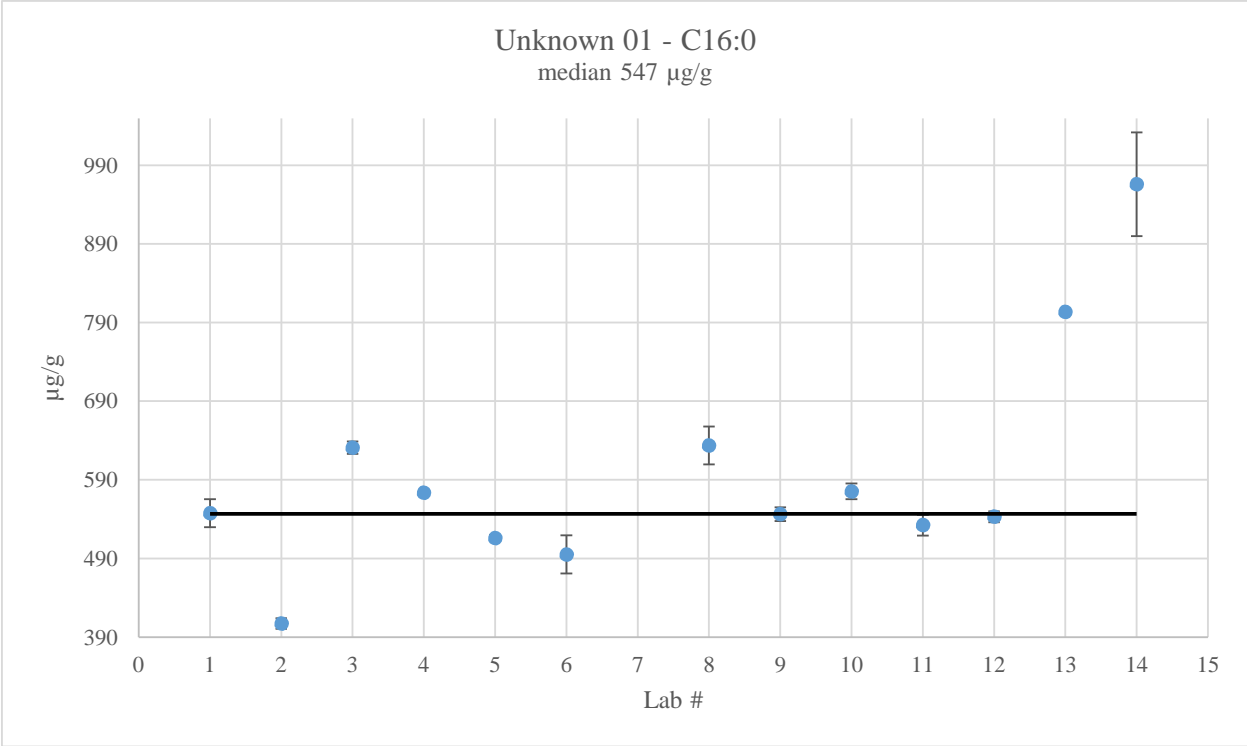


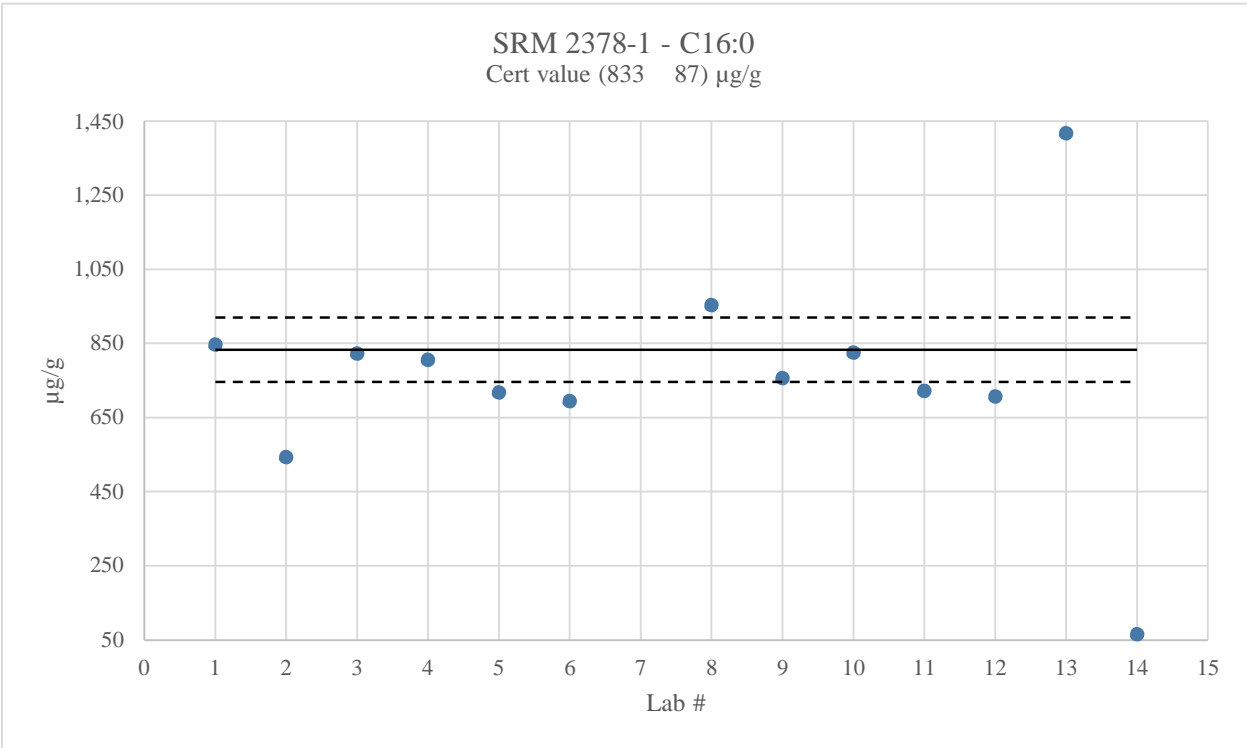
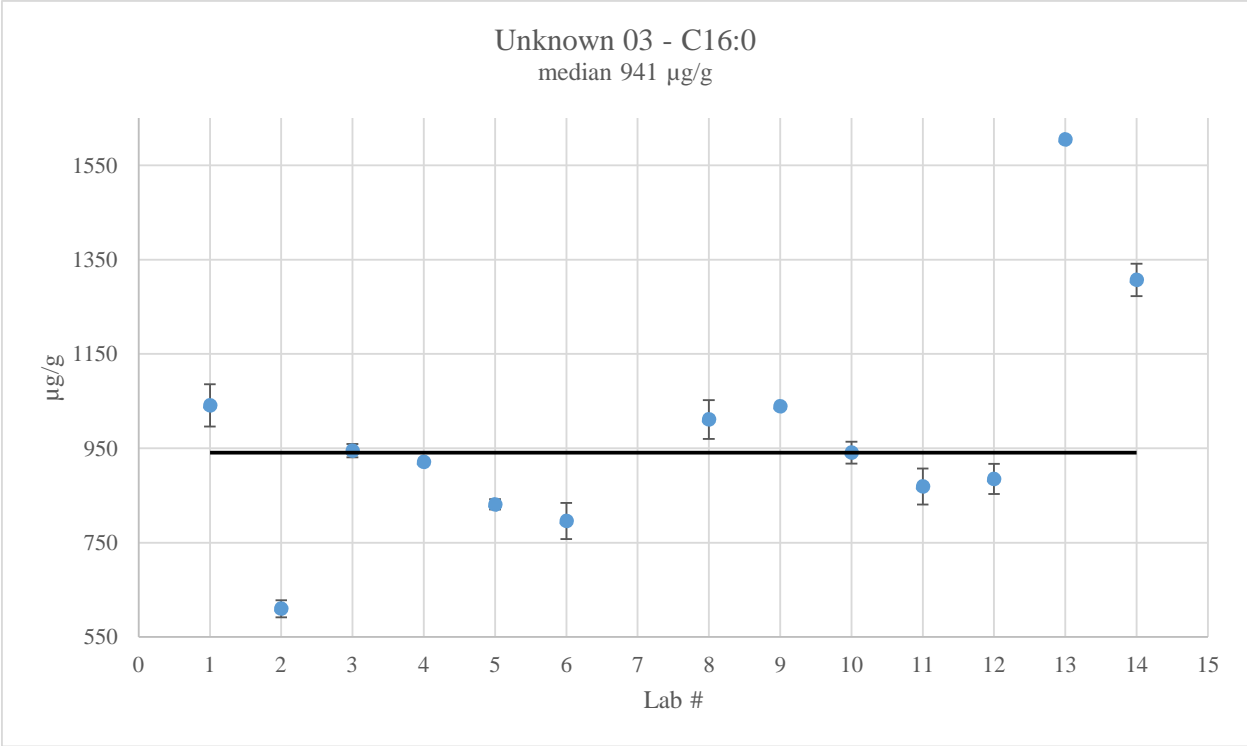
SRM 2378-2 - C14:1n5
Ref value (2.8 1.5) $\mu\text{g/g}$



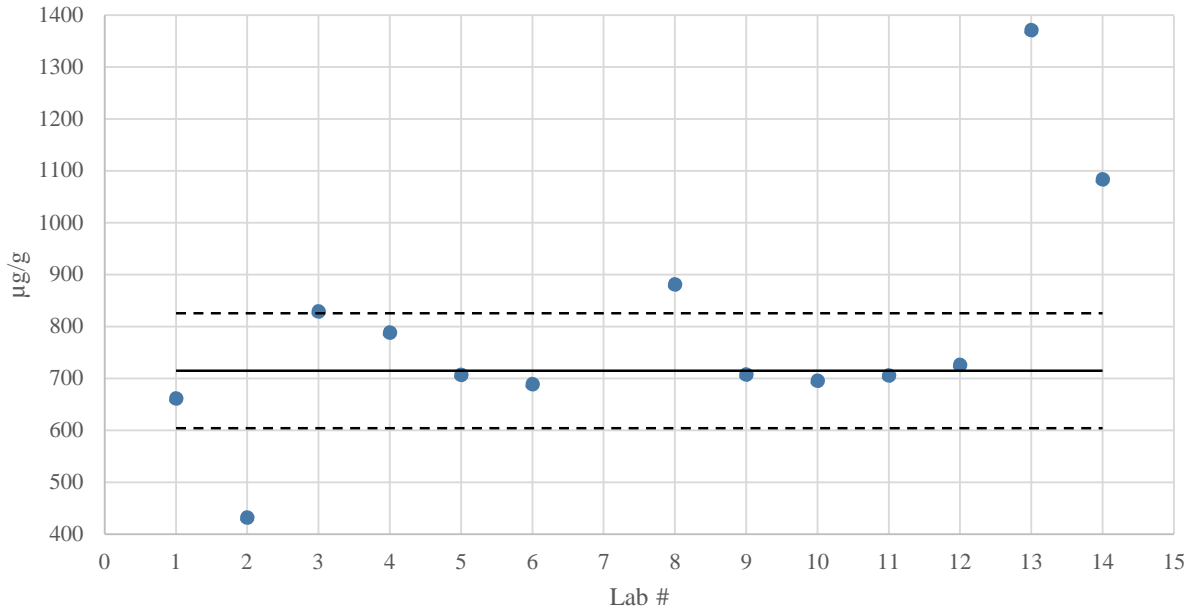
SRM 2378-3 - C14:1n5
Ref value (3.2 1.7) $\mu\text{g/g}$



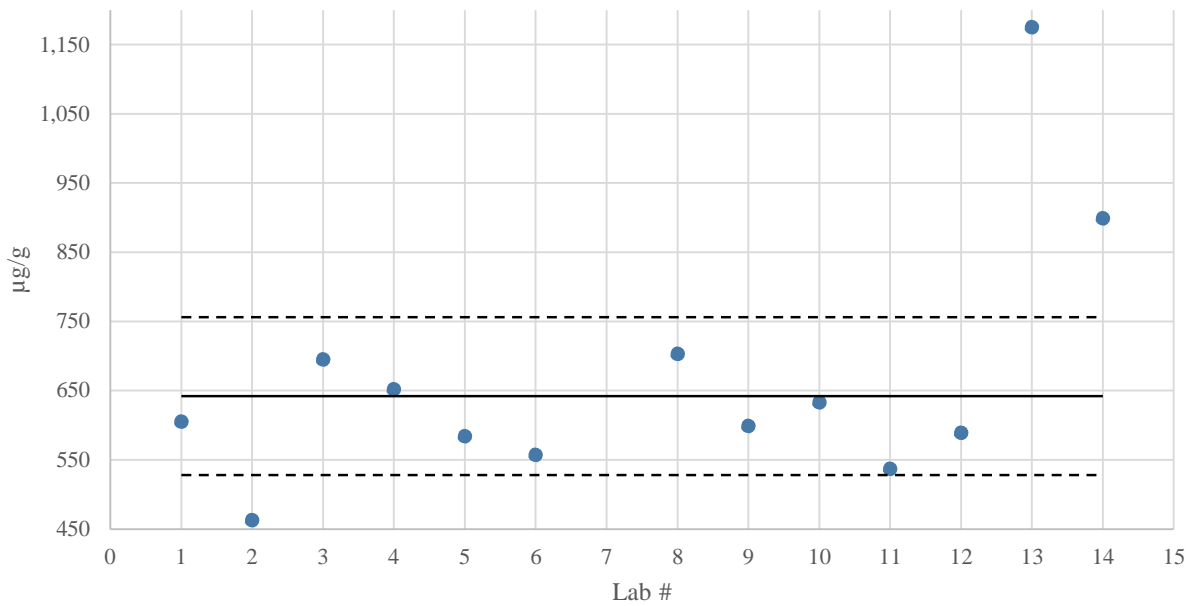


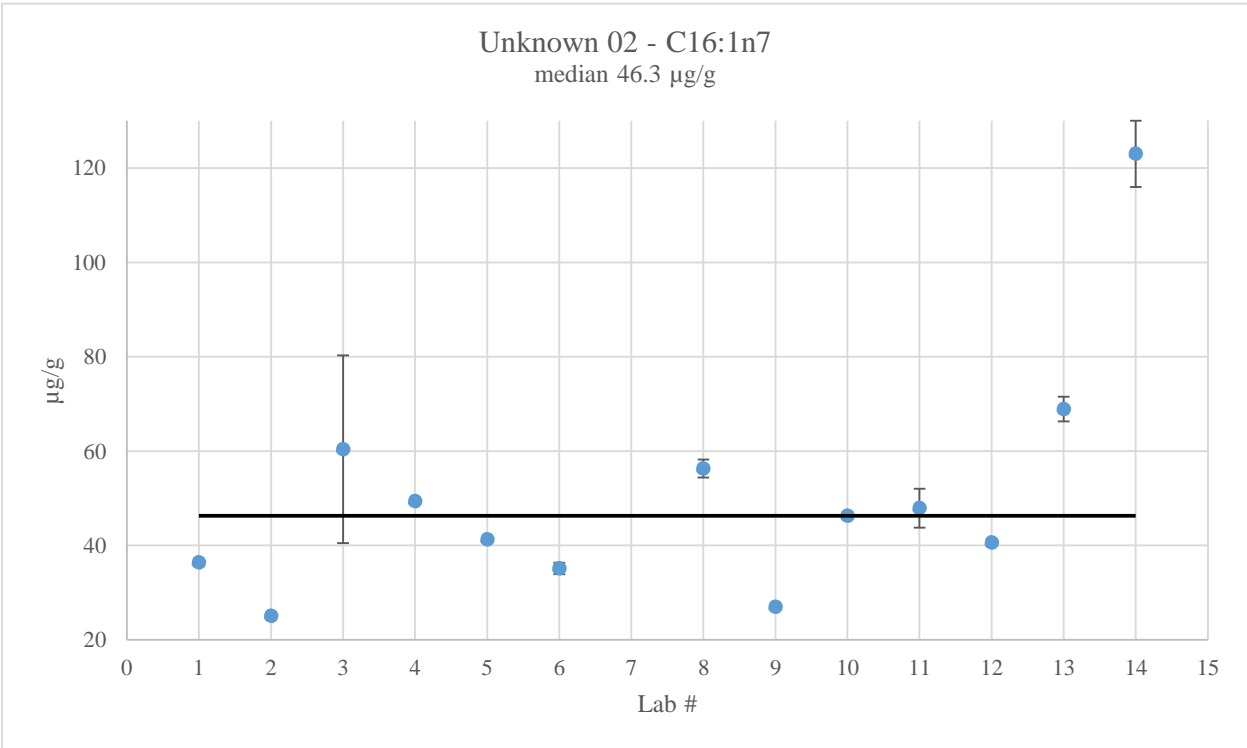
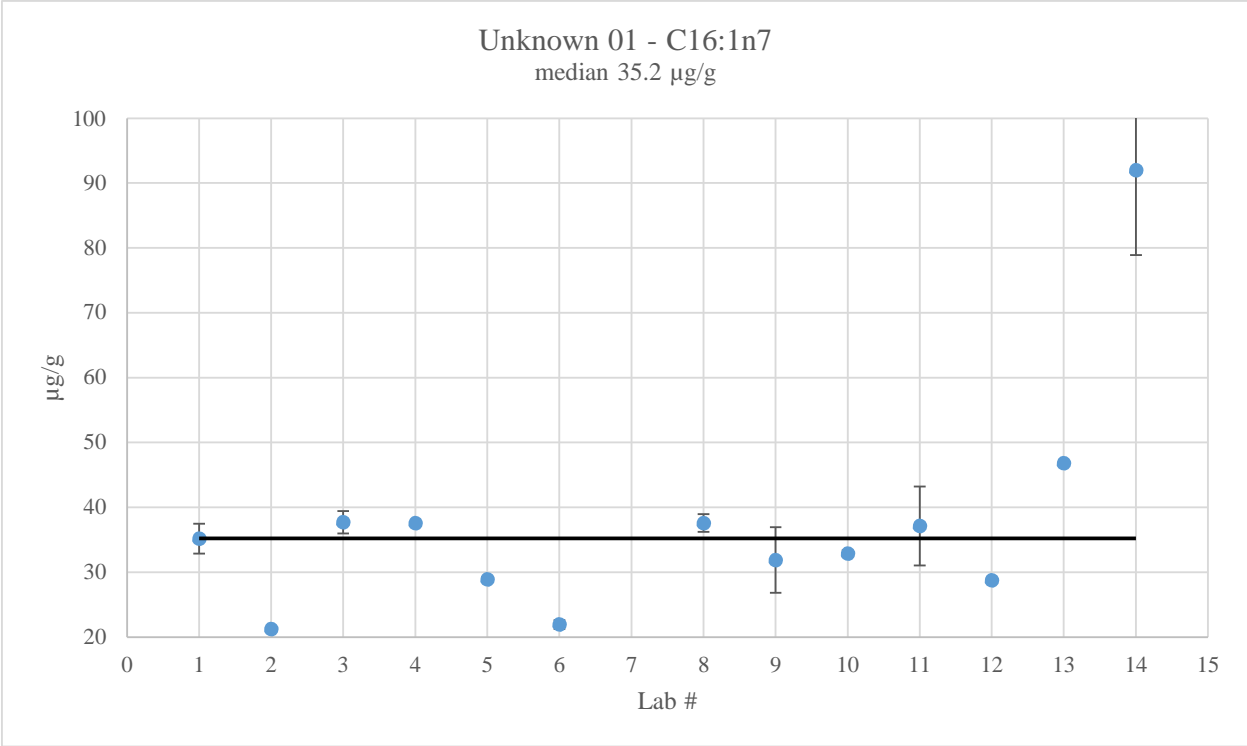


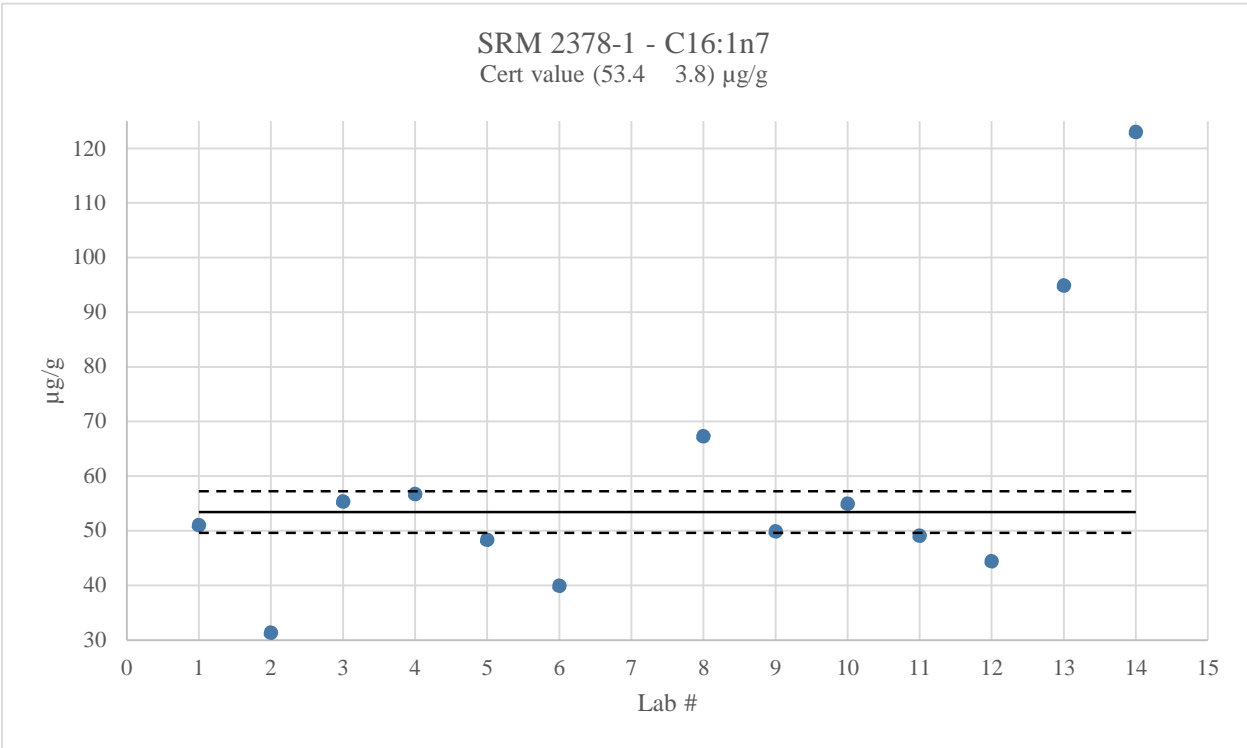
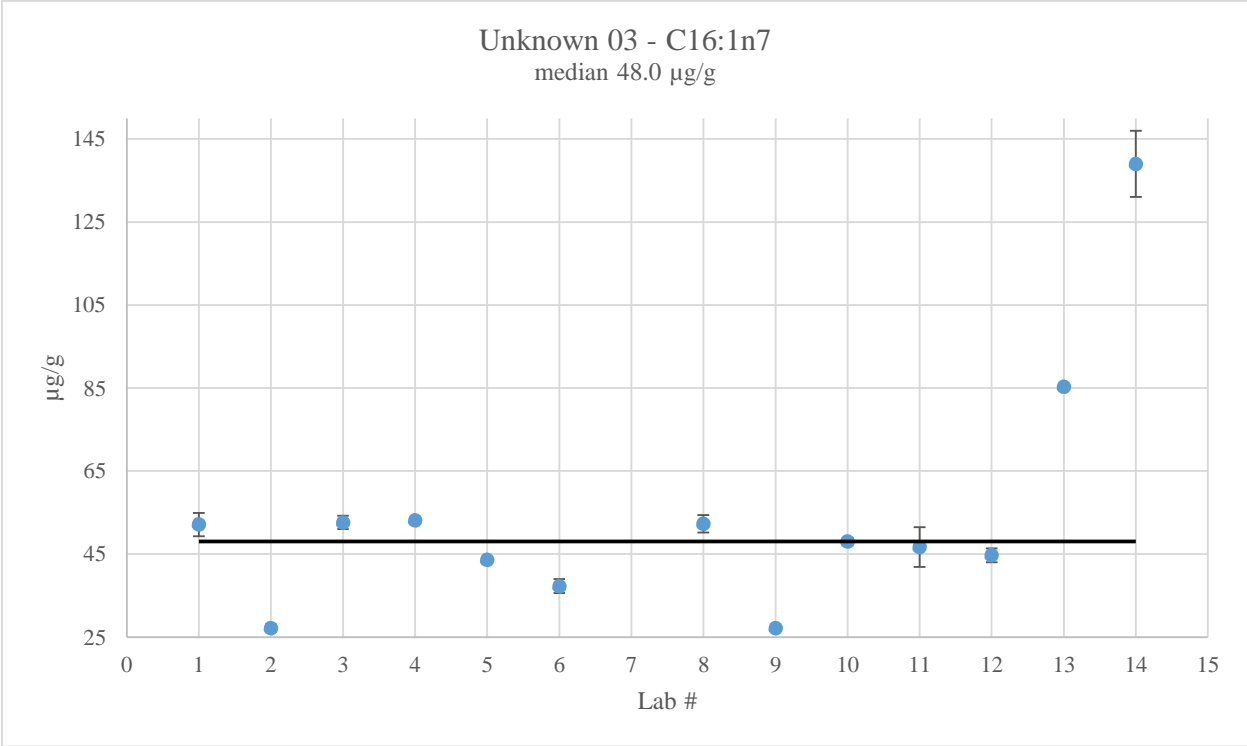
SRM 2378-2 - C16:0
Cert value (715 111) $\mu\text{g/g}$



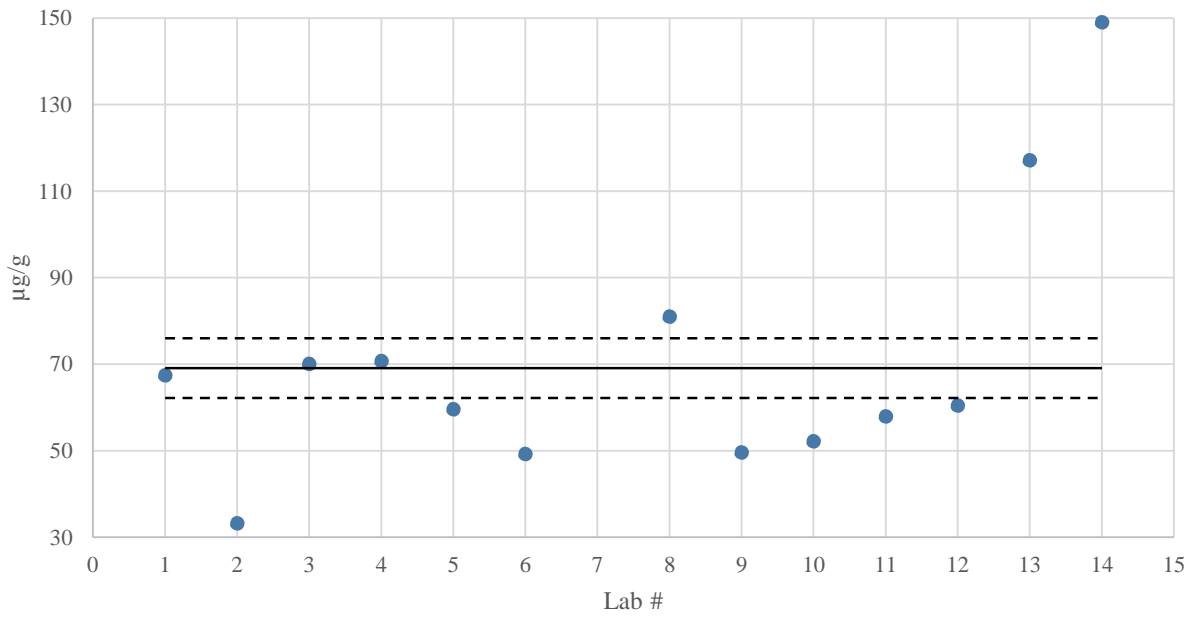
SRM 2378-3 - C16:0
Cert value (642 114) $\mu\text{g/g}$



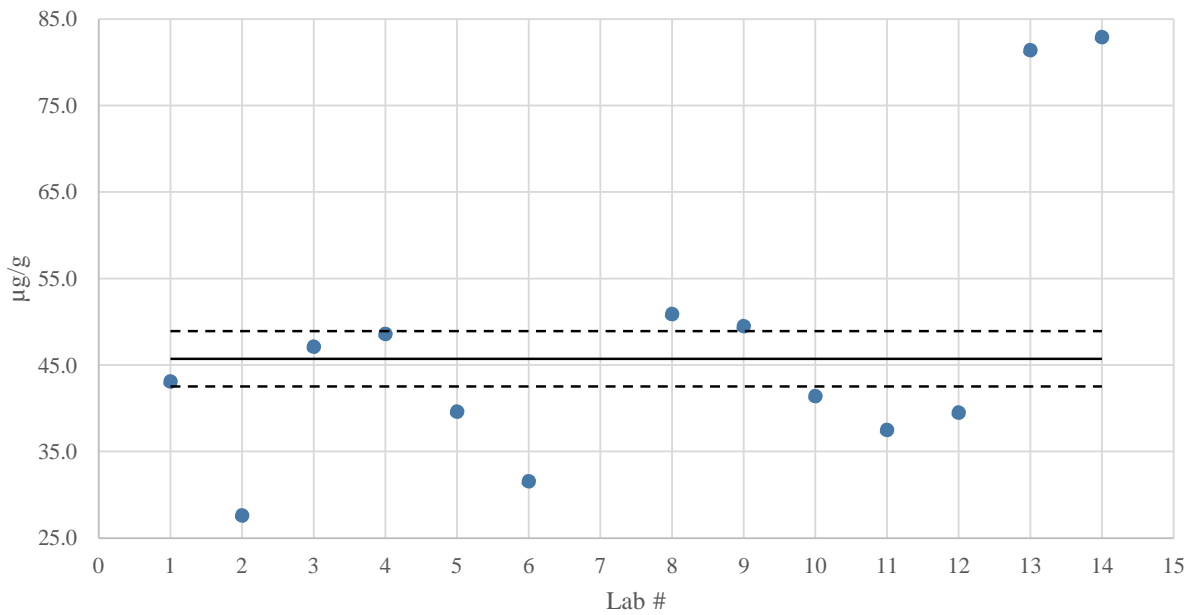




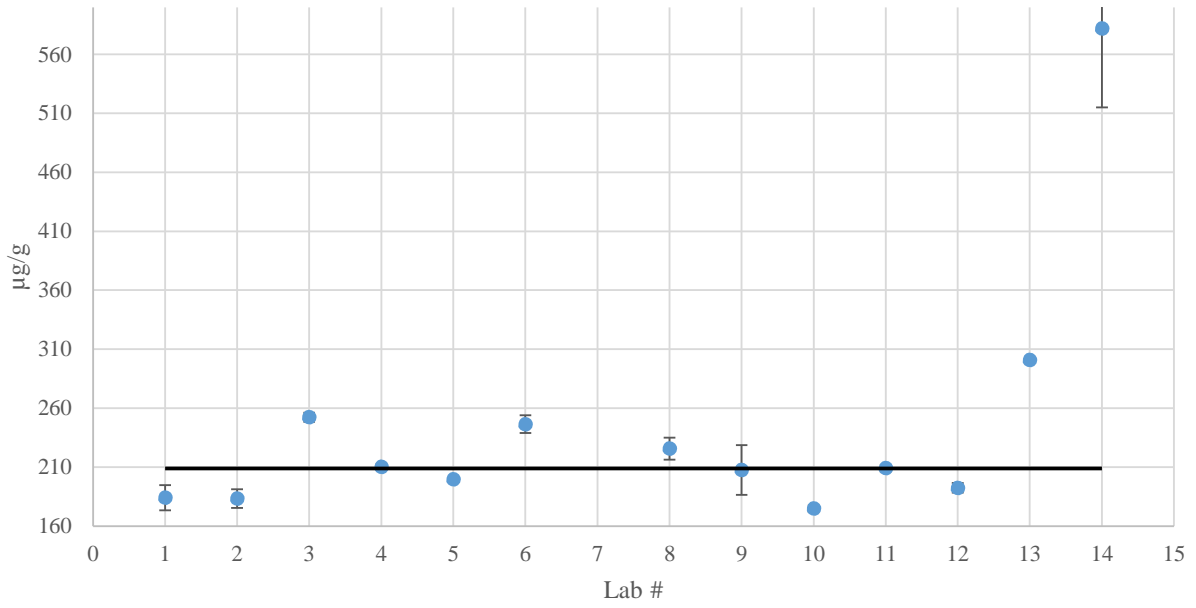
SRM 2378-2 - C16:1n7
Cert value (69.1 ± 6.9) µg/g



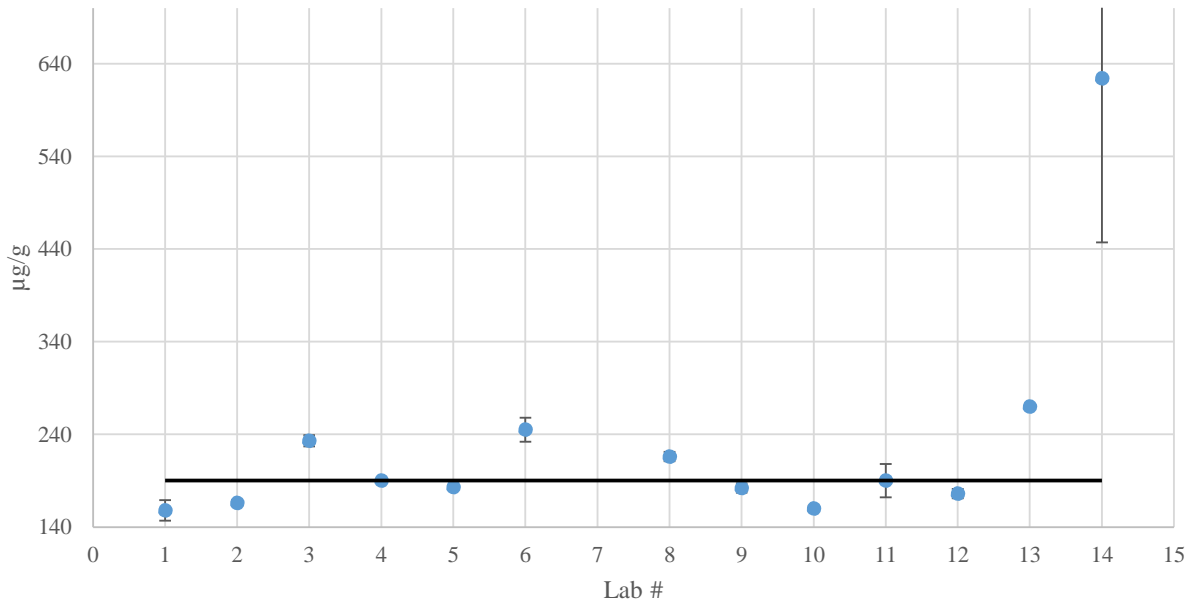
SRM 2378-3 - C16:1n7
Cert value (45.7 ± 3.2) µg/g

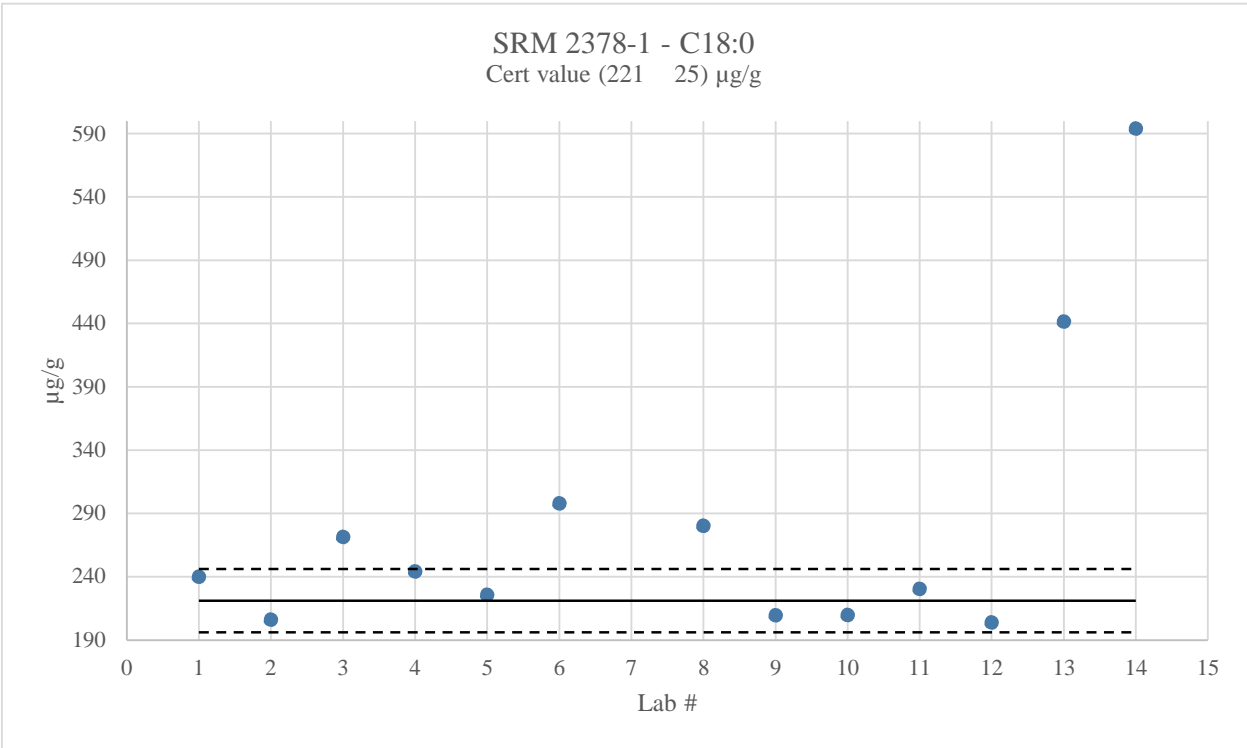
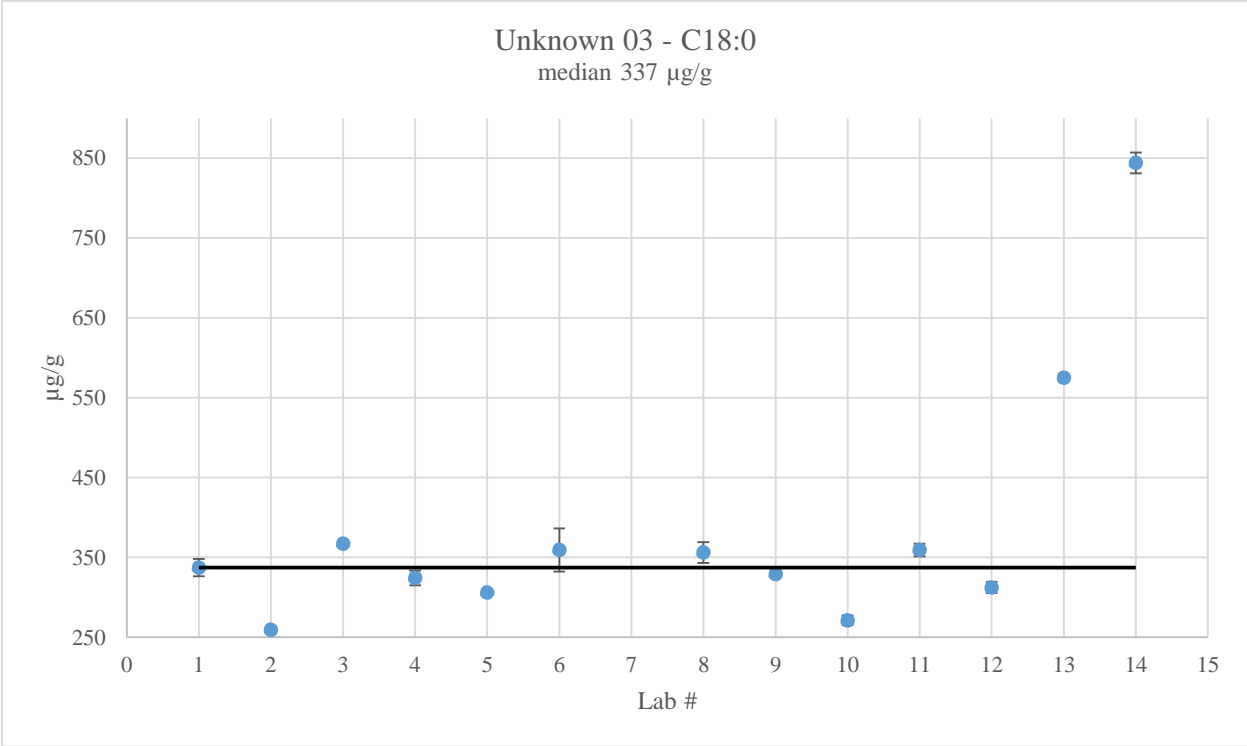


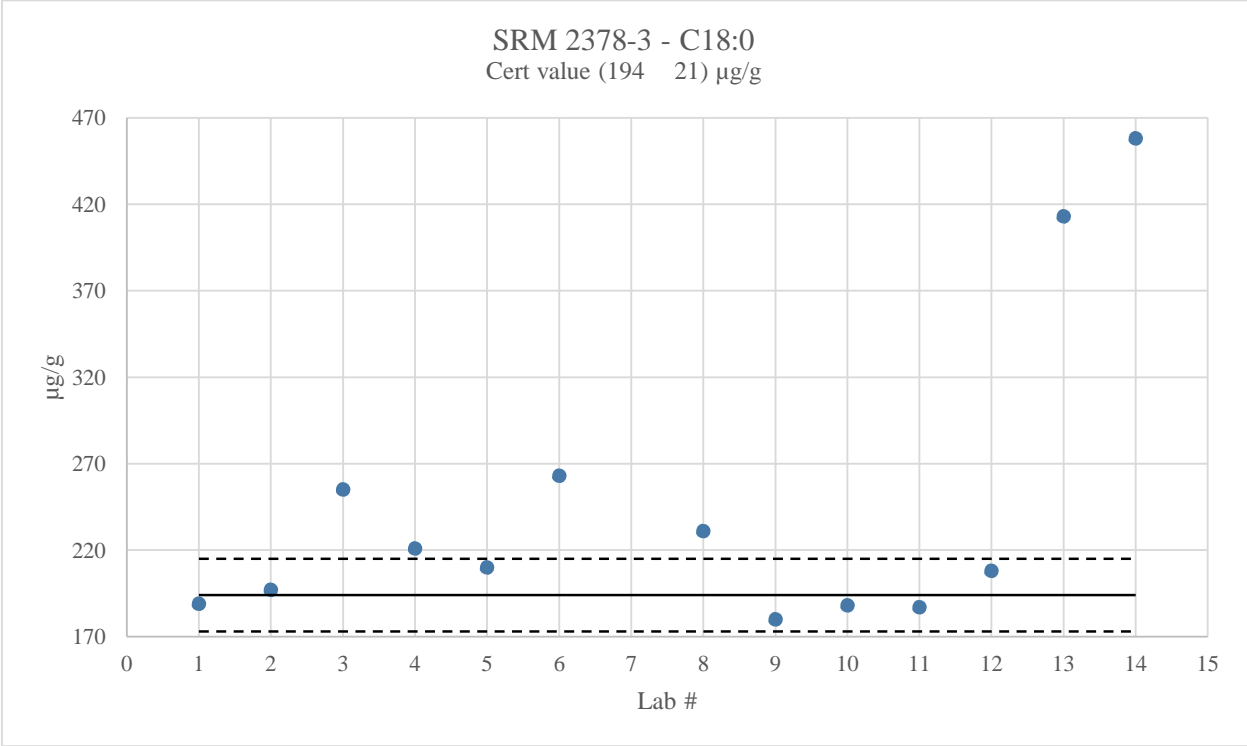
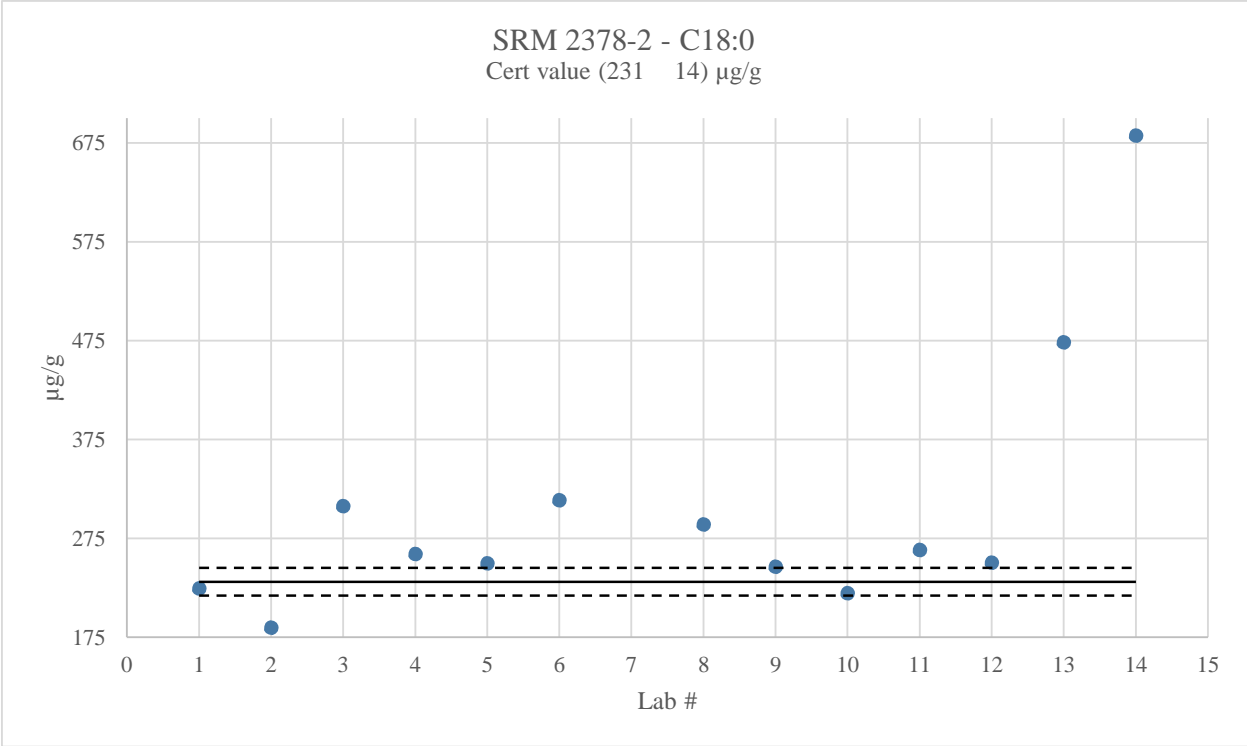
Unknown 01 - C18:0
median 209 $\mu\text{g/g}$

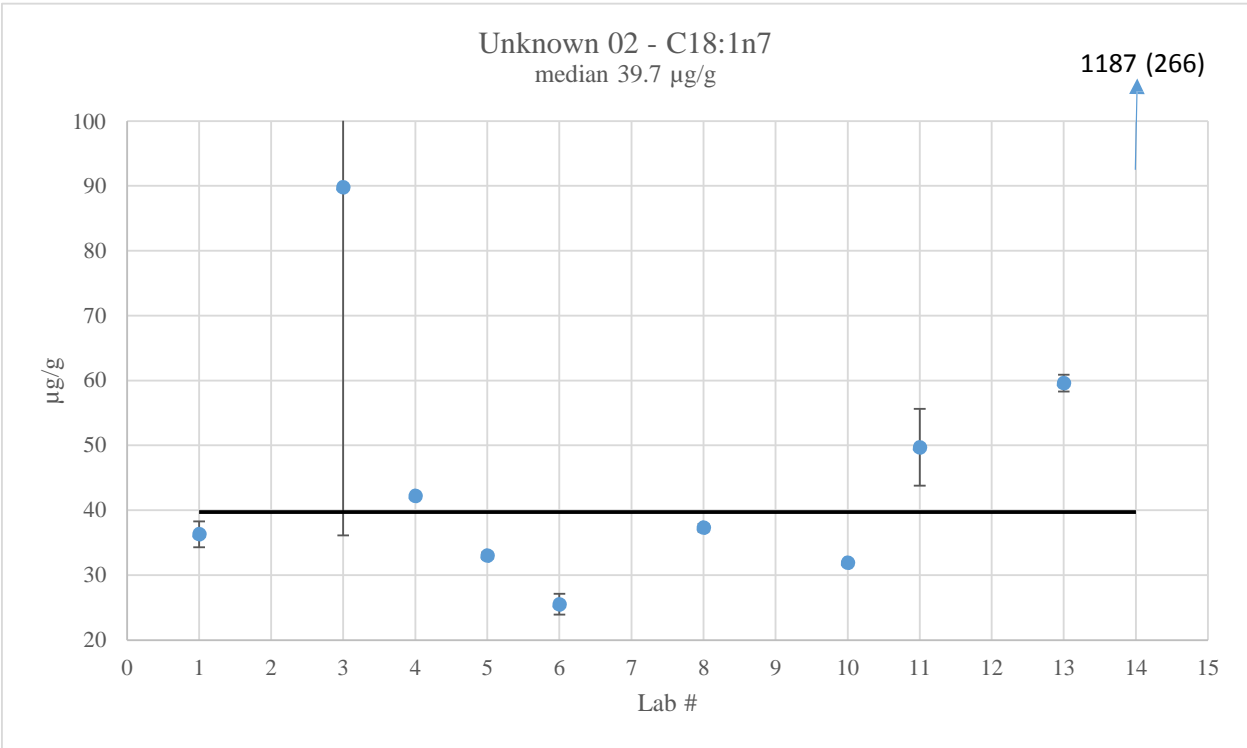
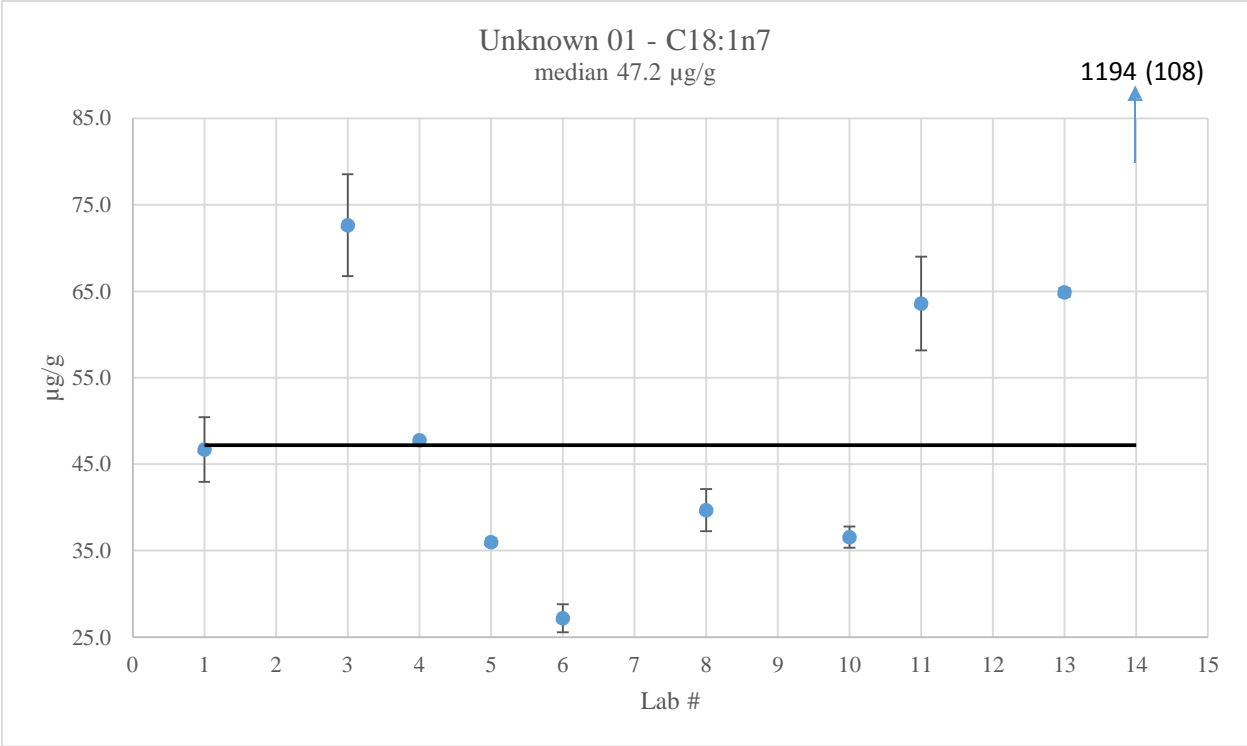


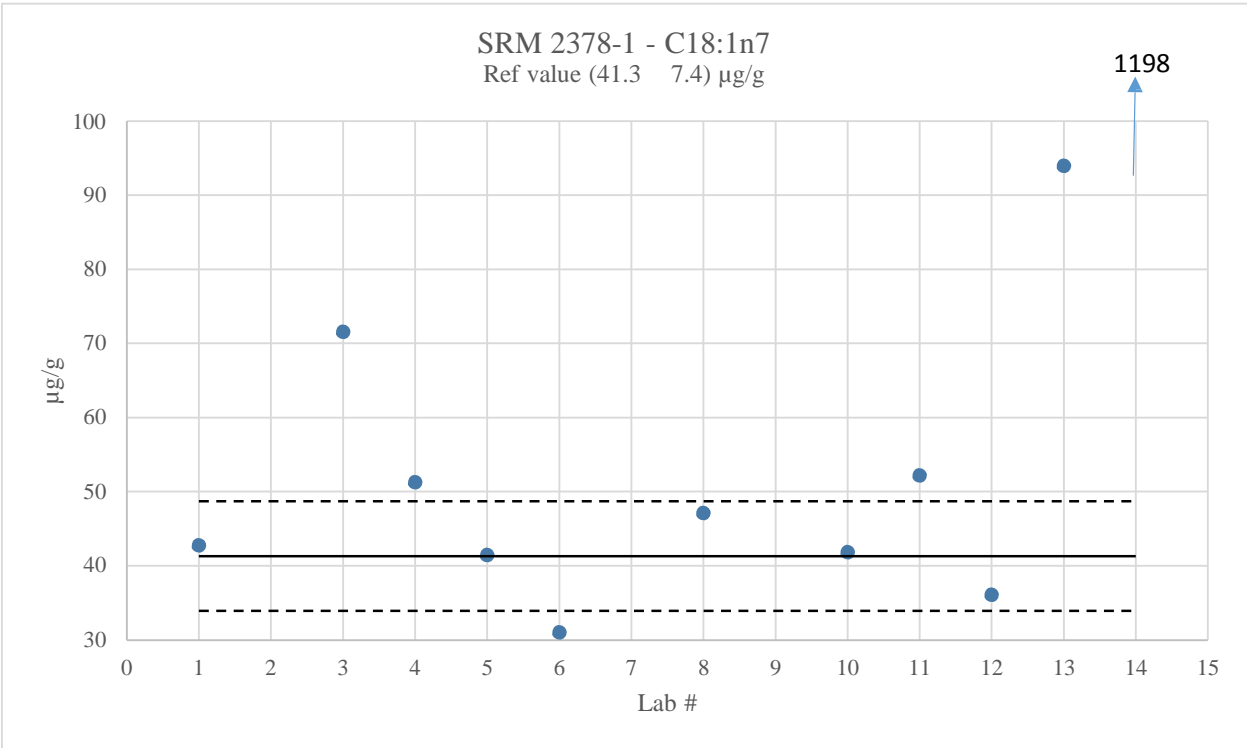
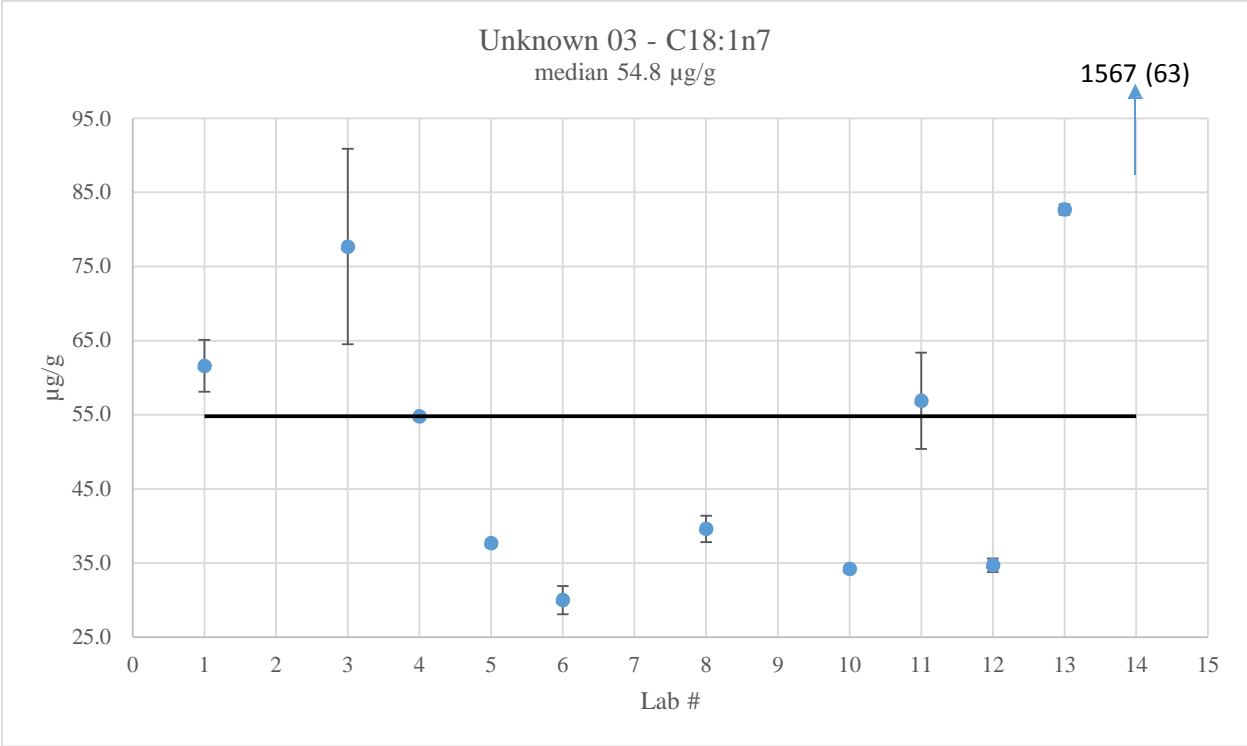
Unknown 02 - C18:0
median 190 $\mu\text{g/g}$

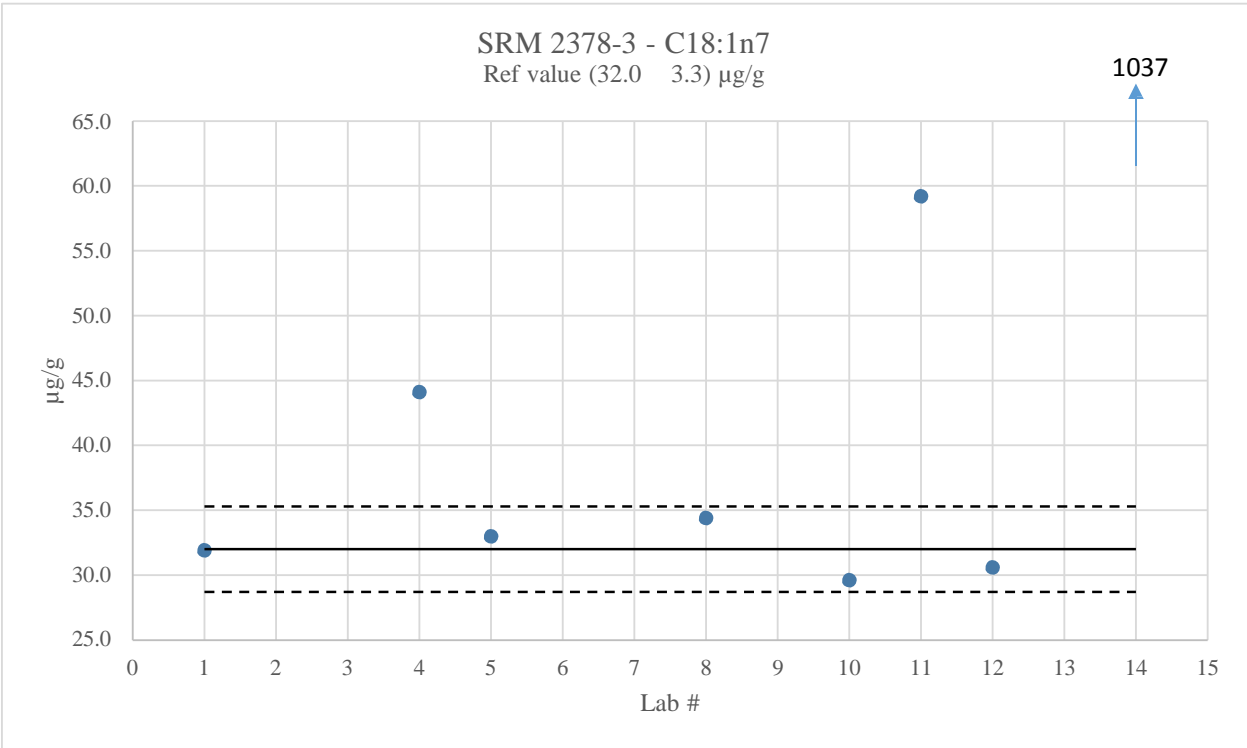
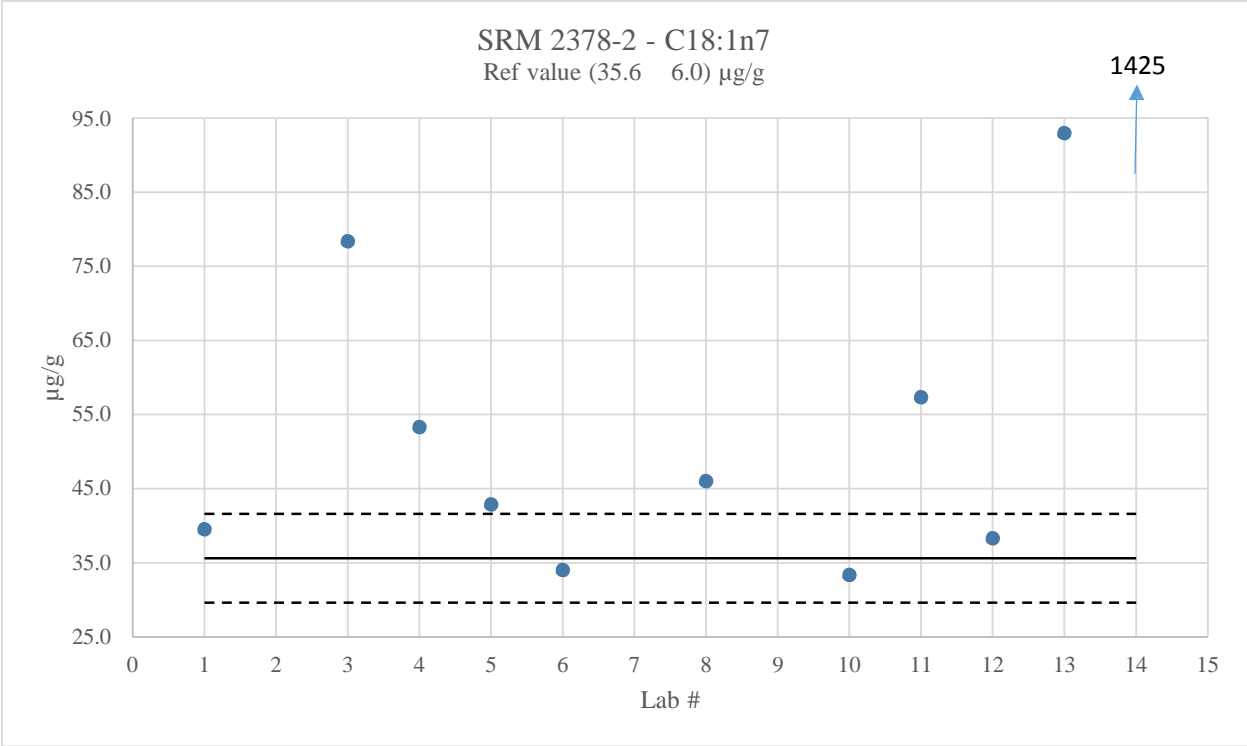


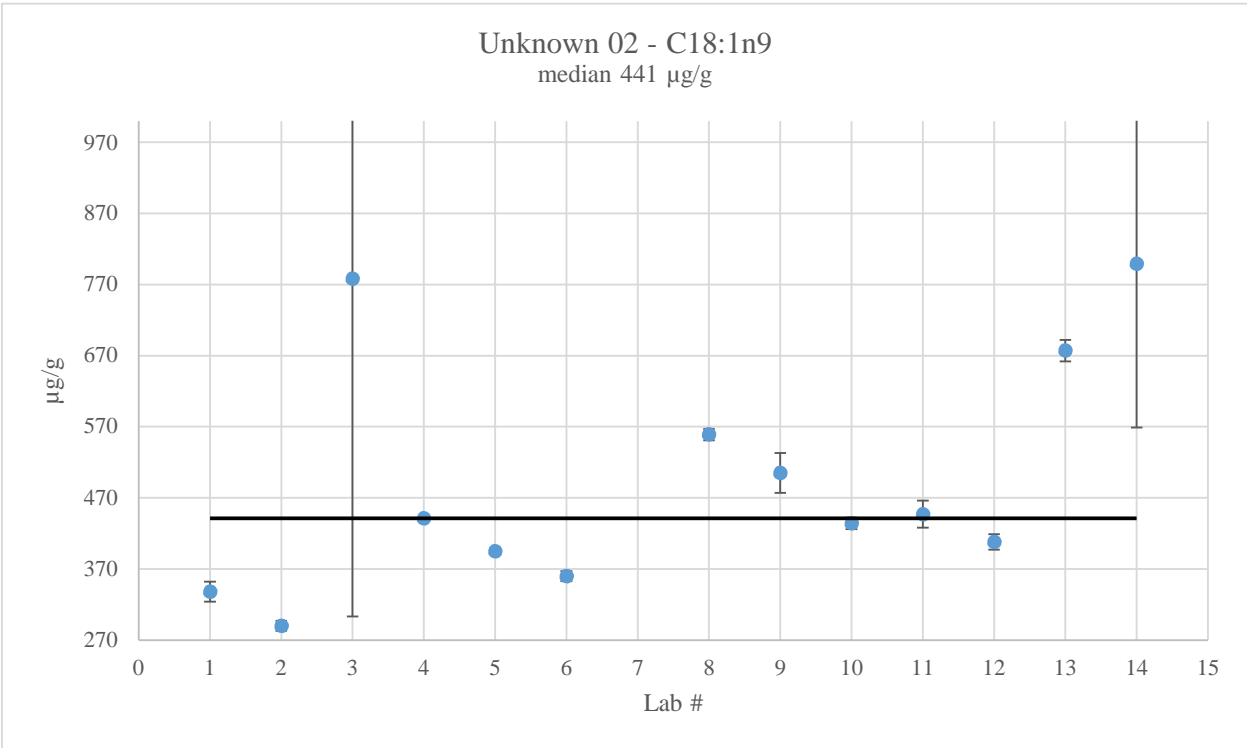
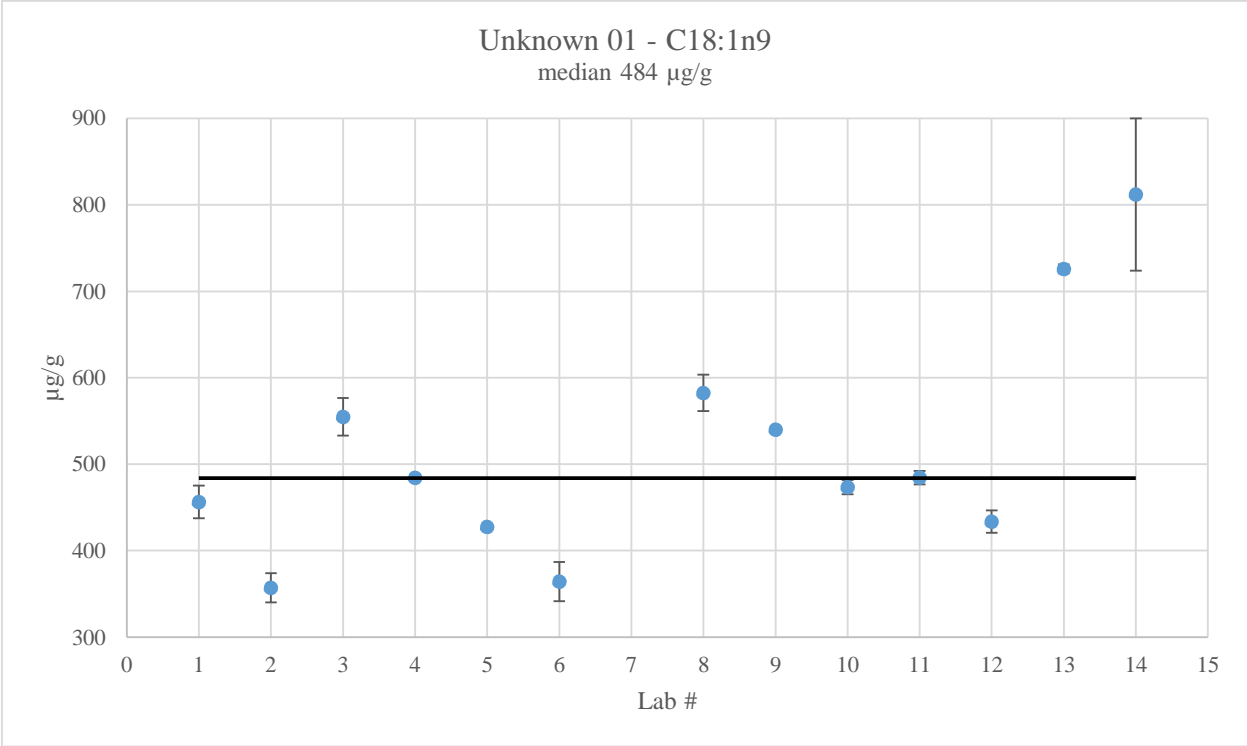


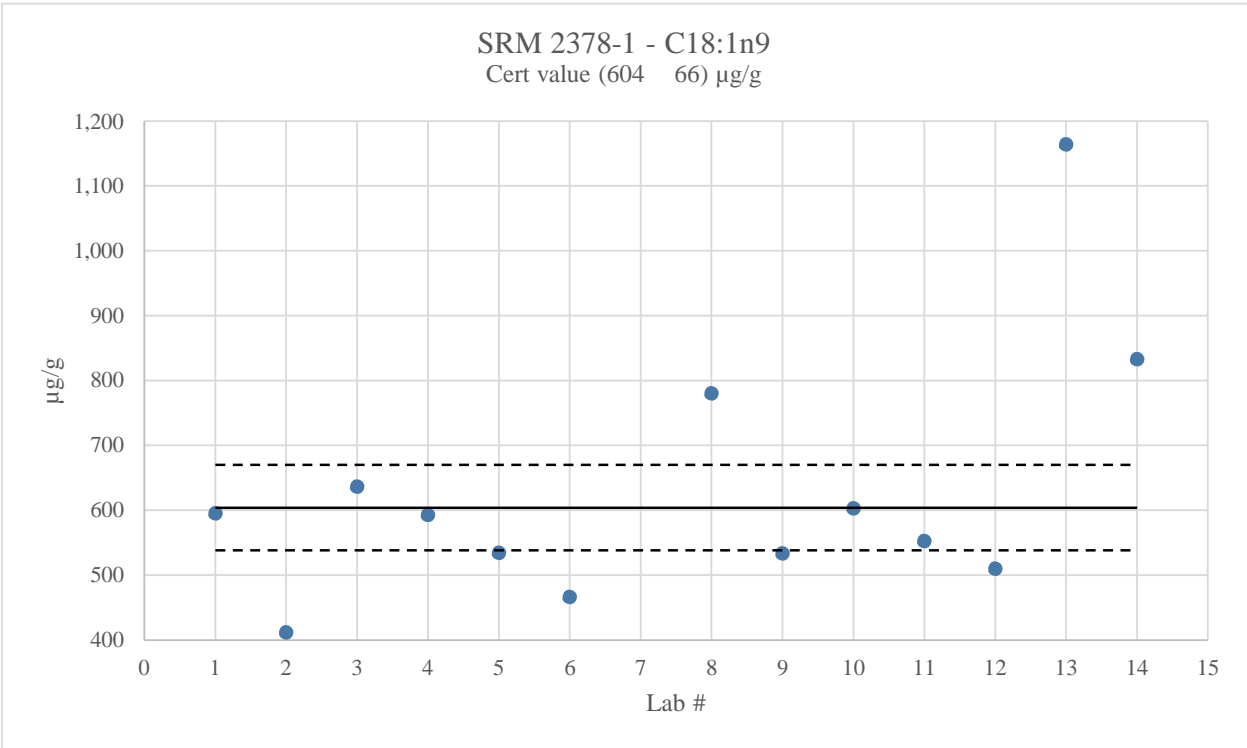
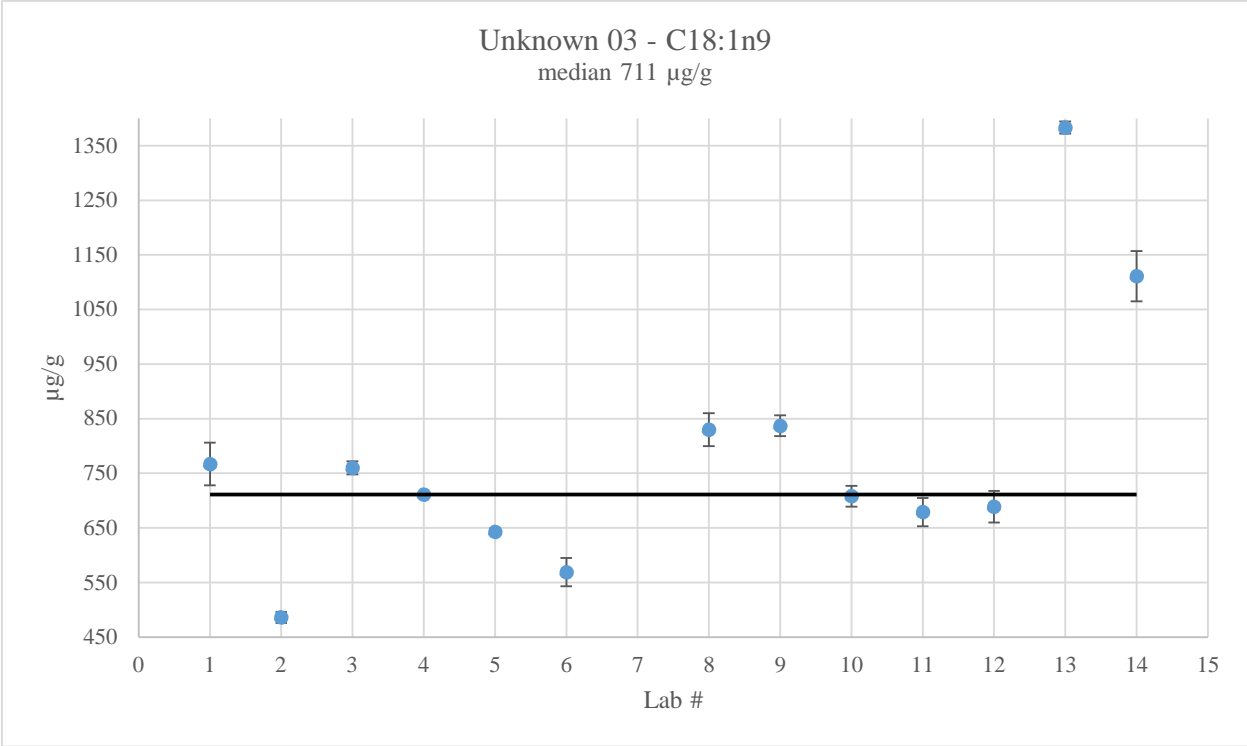




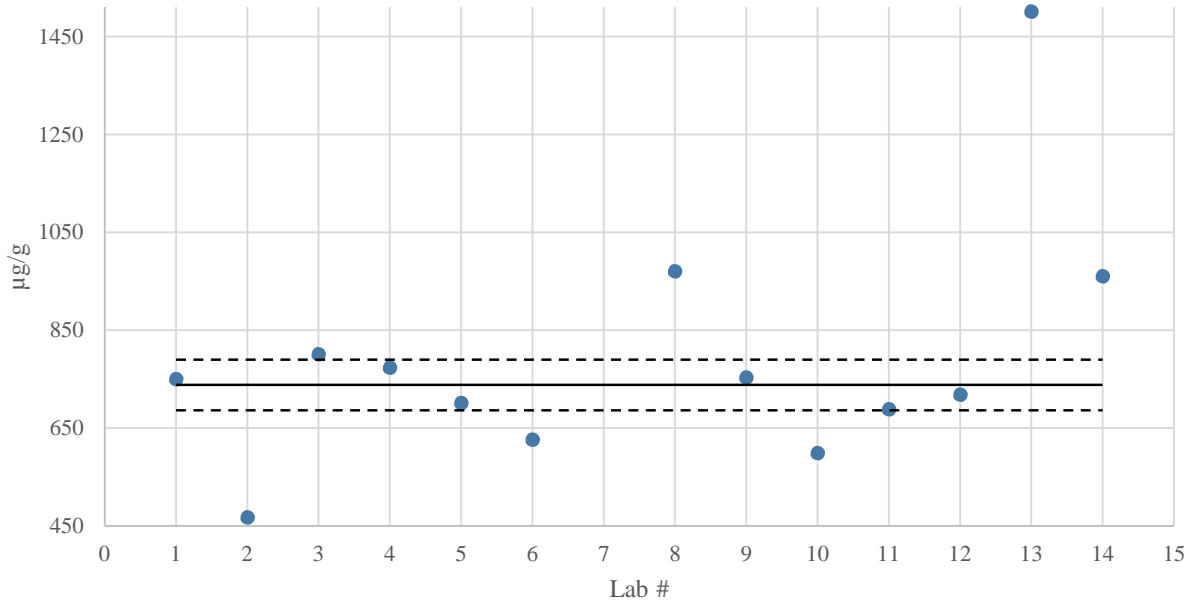




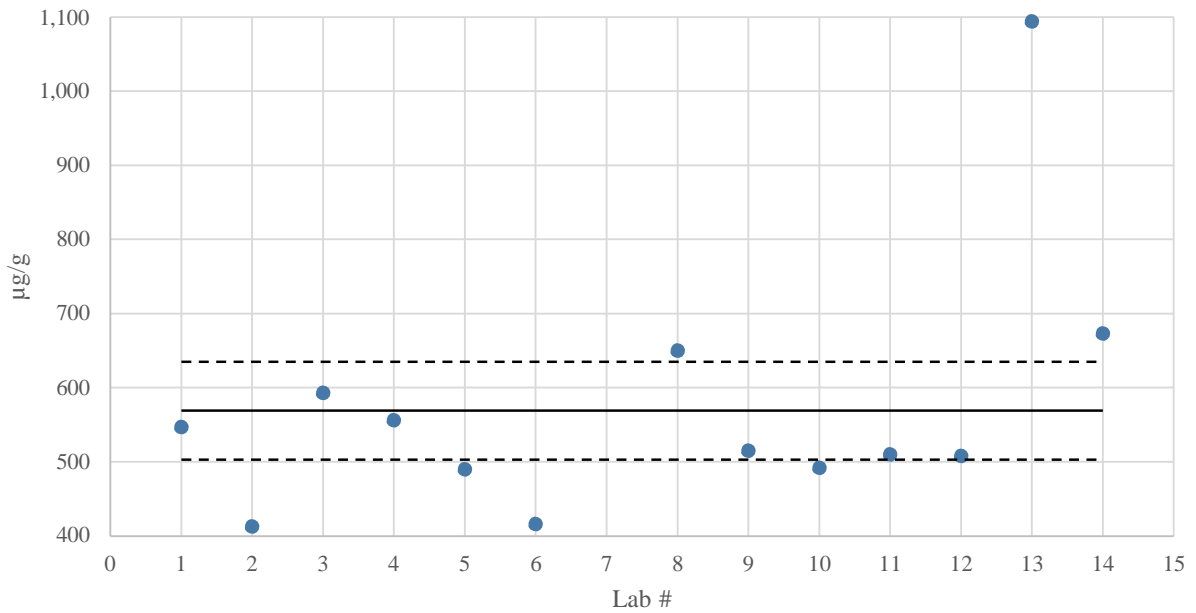




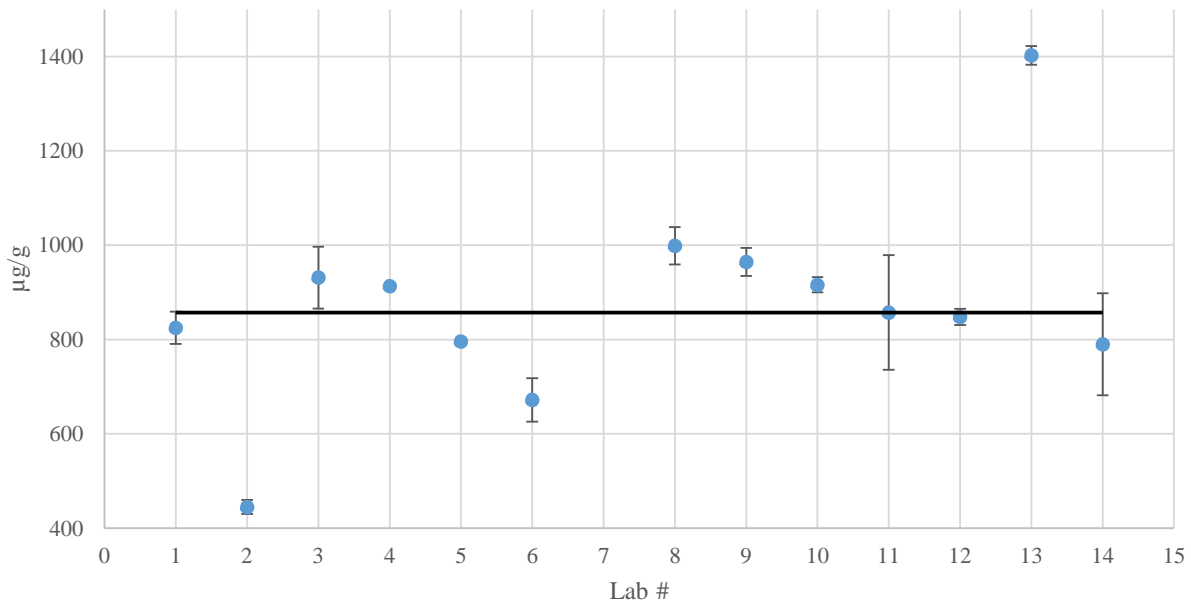
SRM 2378-2 - C18:1n9
Cert value (738 ± 52) µg/g



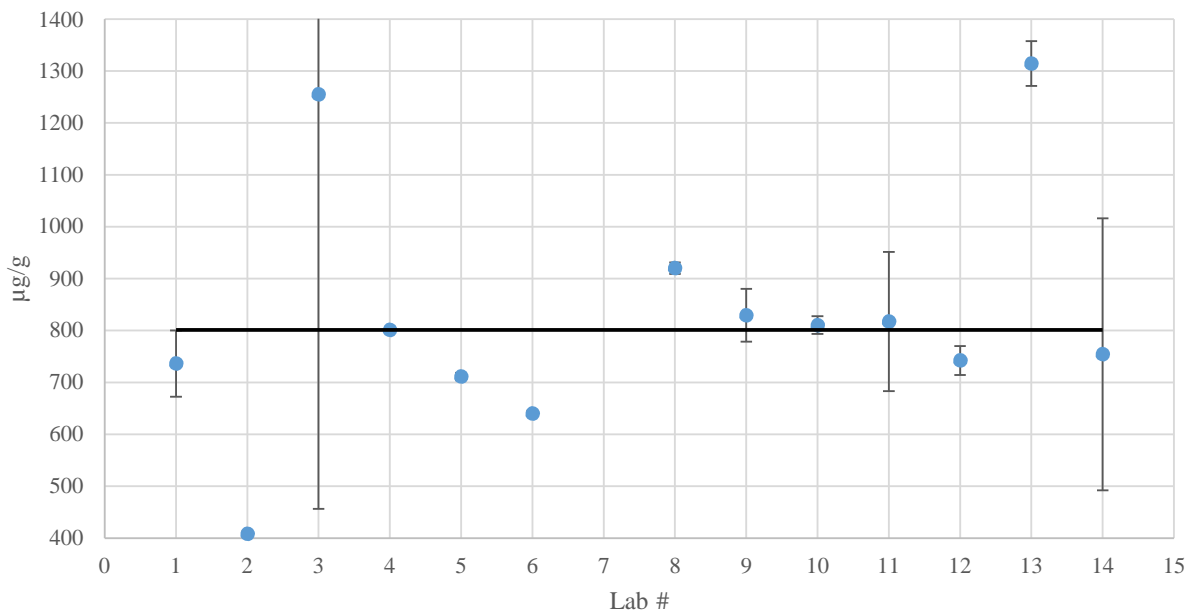
SRM 2378-3 - C18:1n9
Cert value (569 ± 66) µg/g

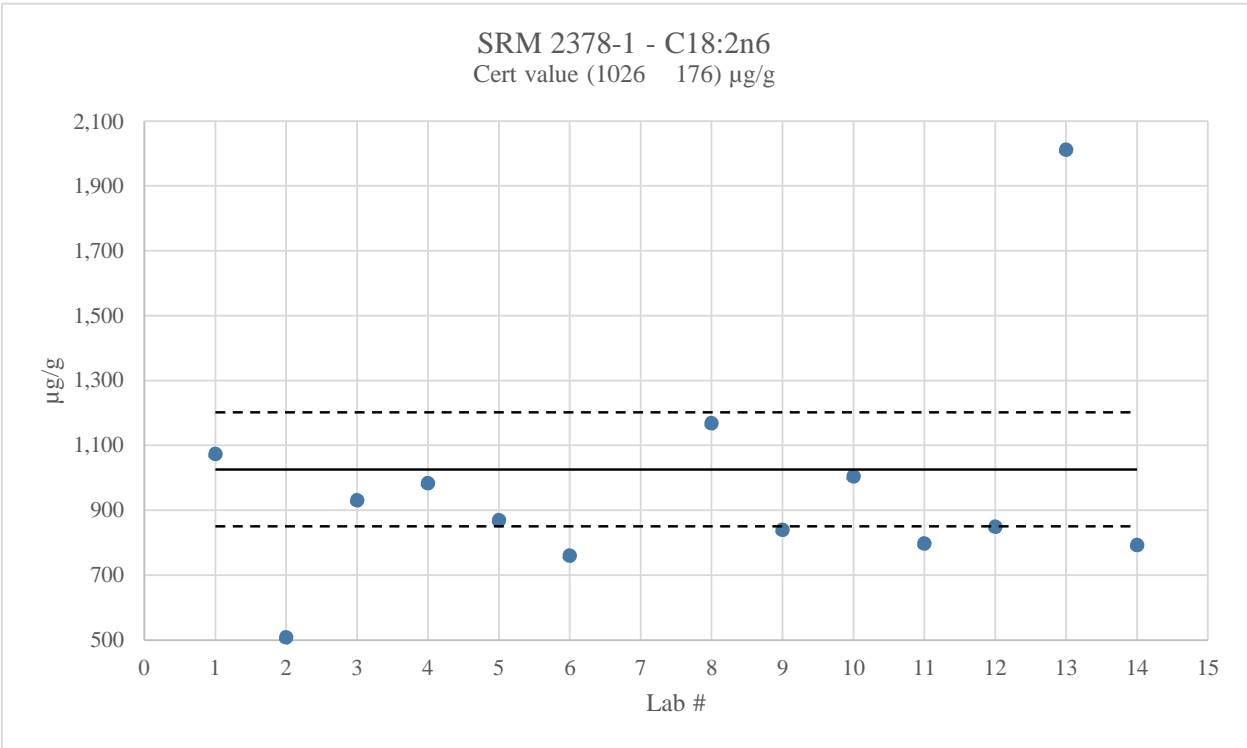
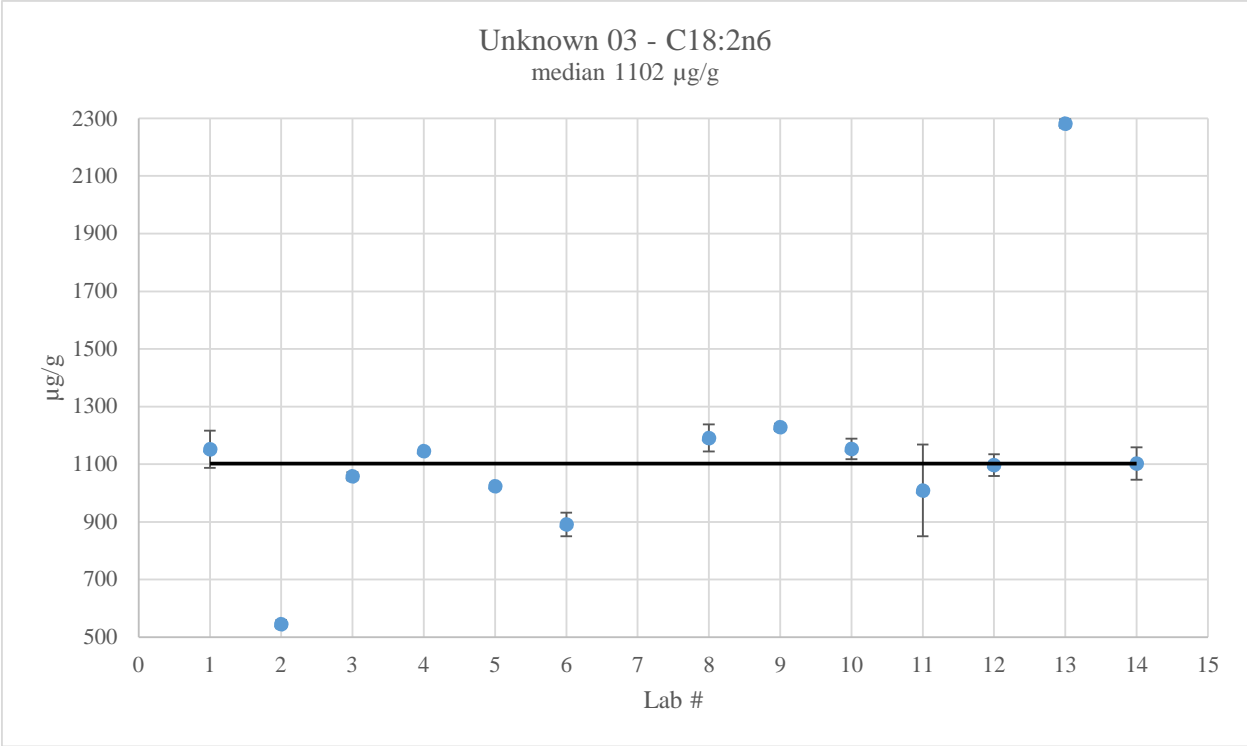


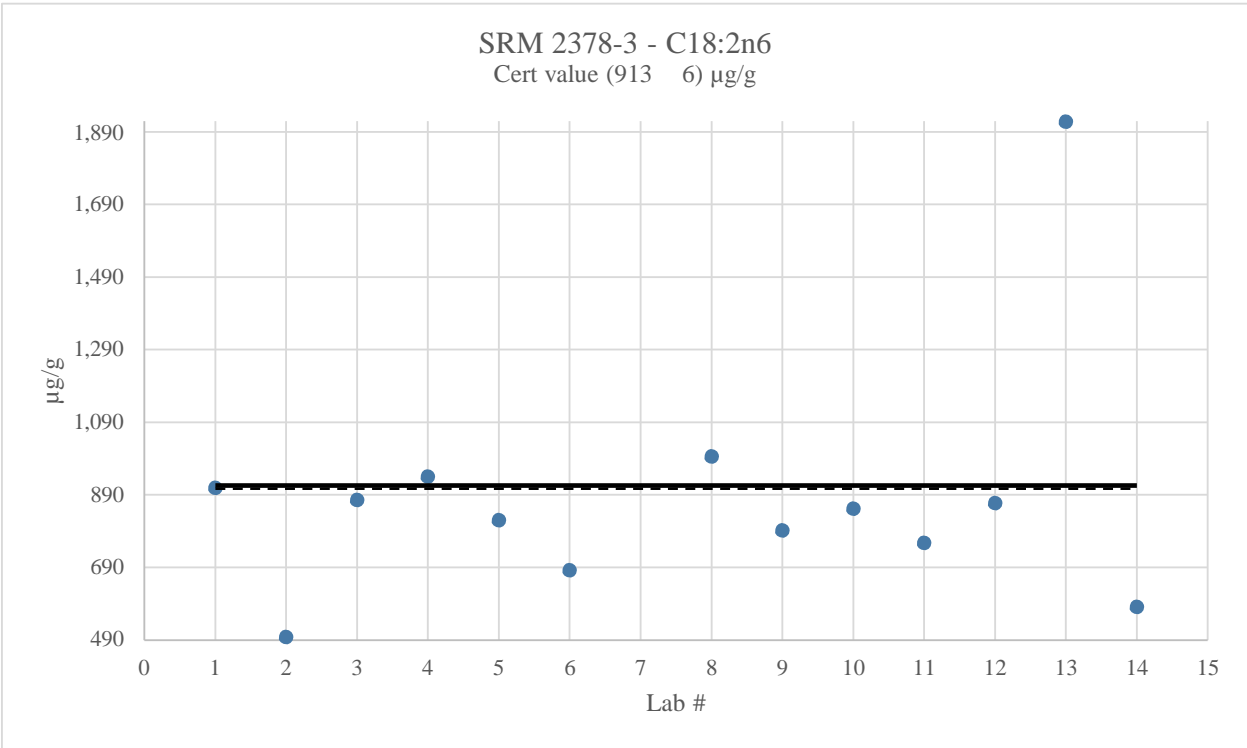
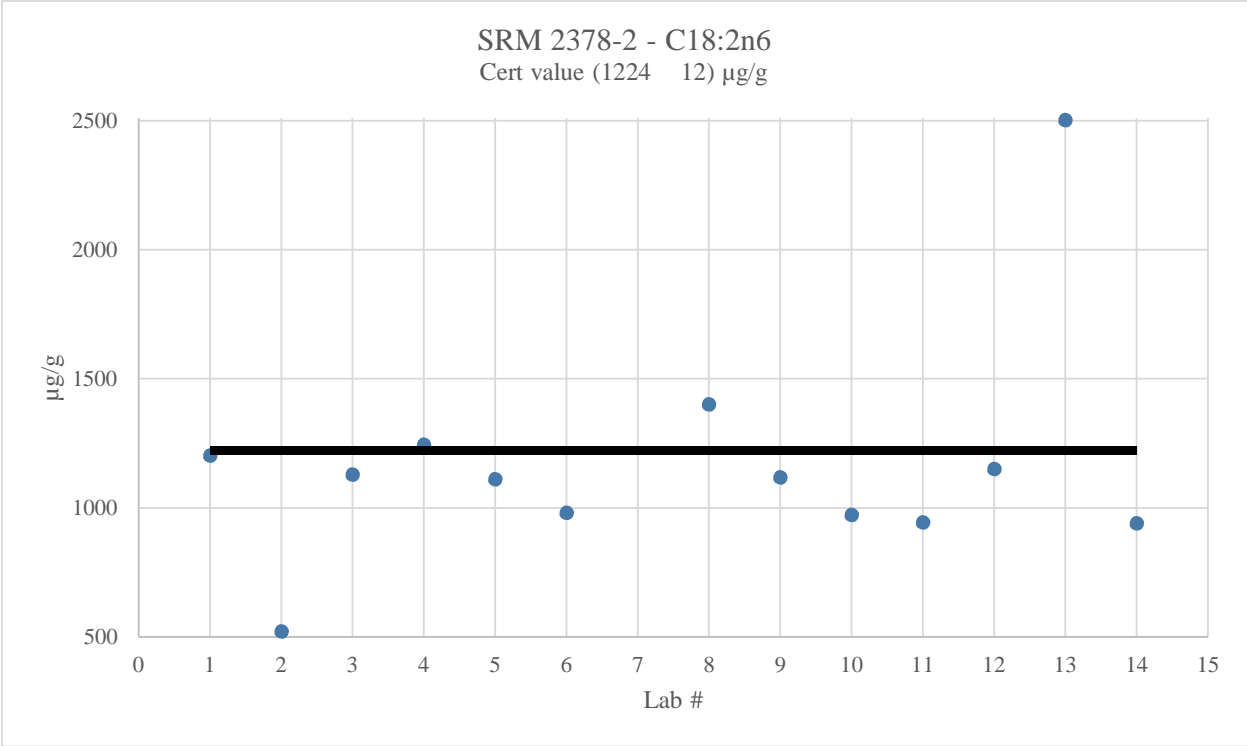
Unknown 01 - C18:2n6
median 857 $\mu\text{g/g}$



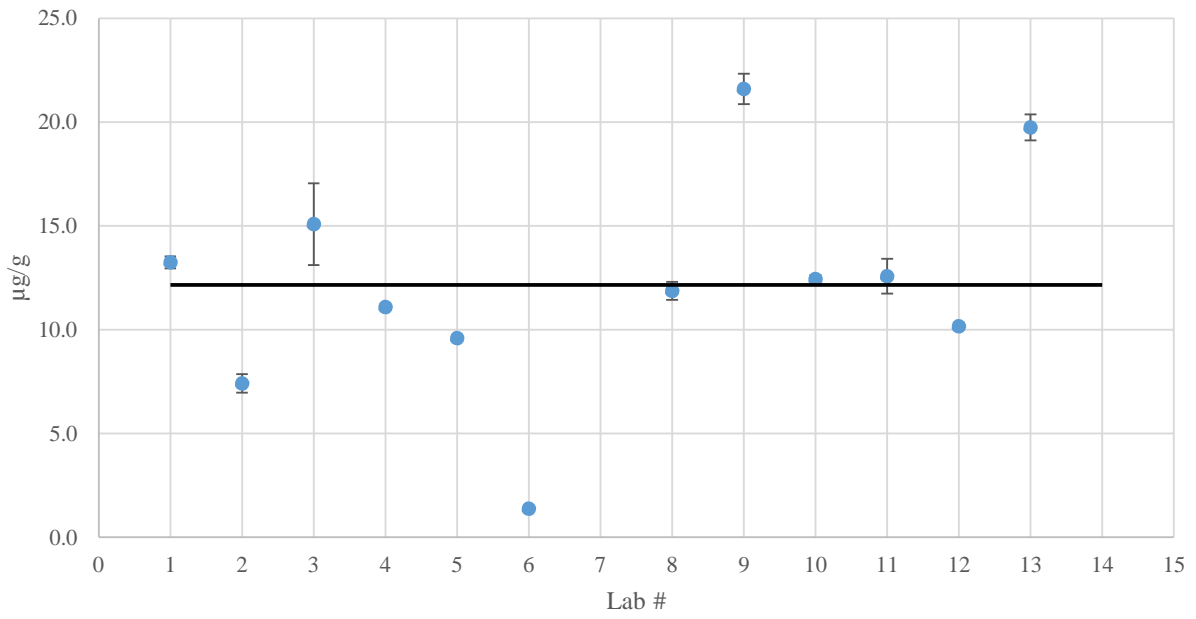
Unknown 02 - C18:2n6
median 801 $\mu\text{g/g}$



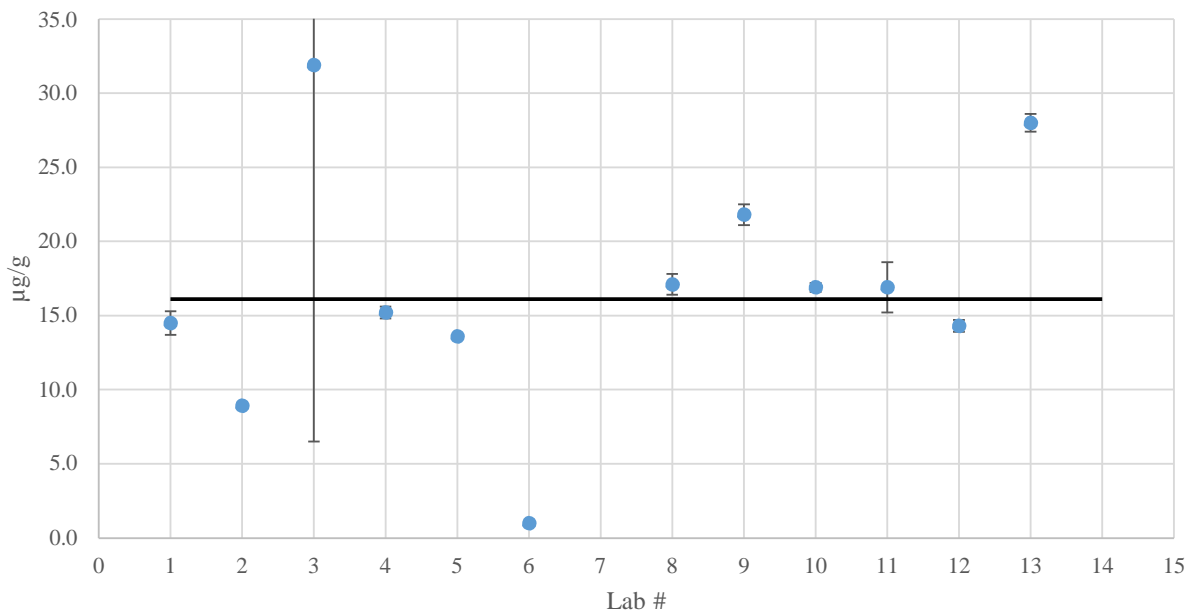




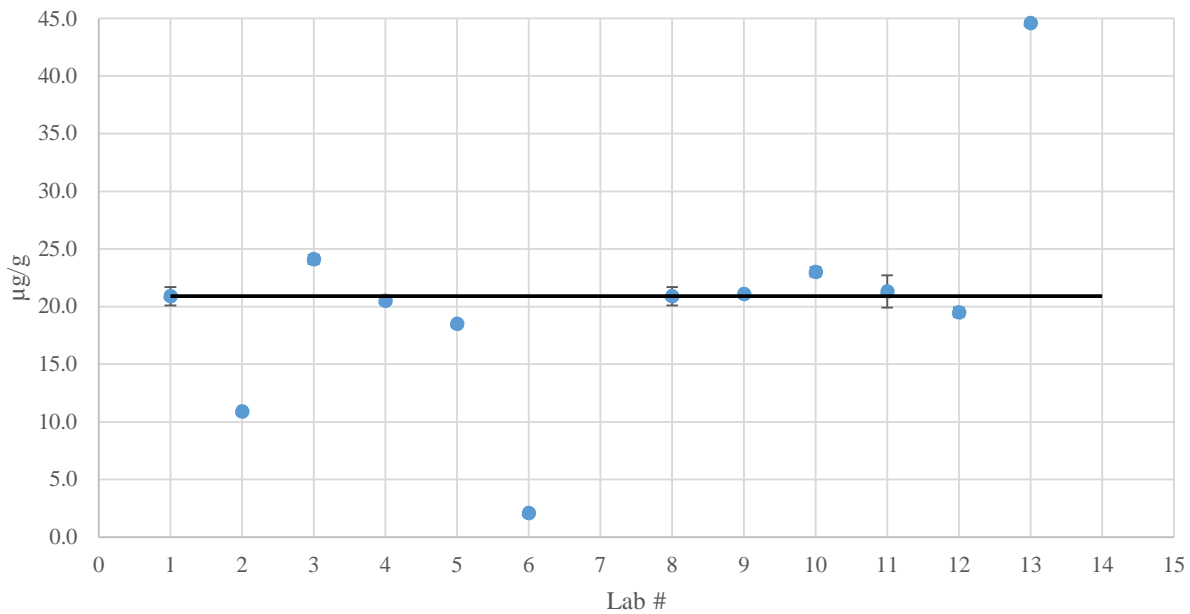
Unknown 01 - C18:3n3
median 12.2 $\mu\text{g/g}$



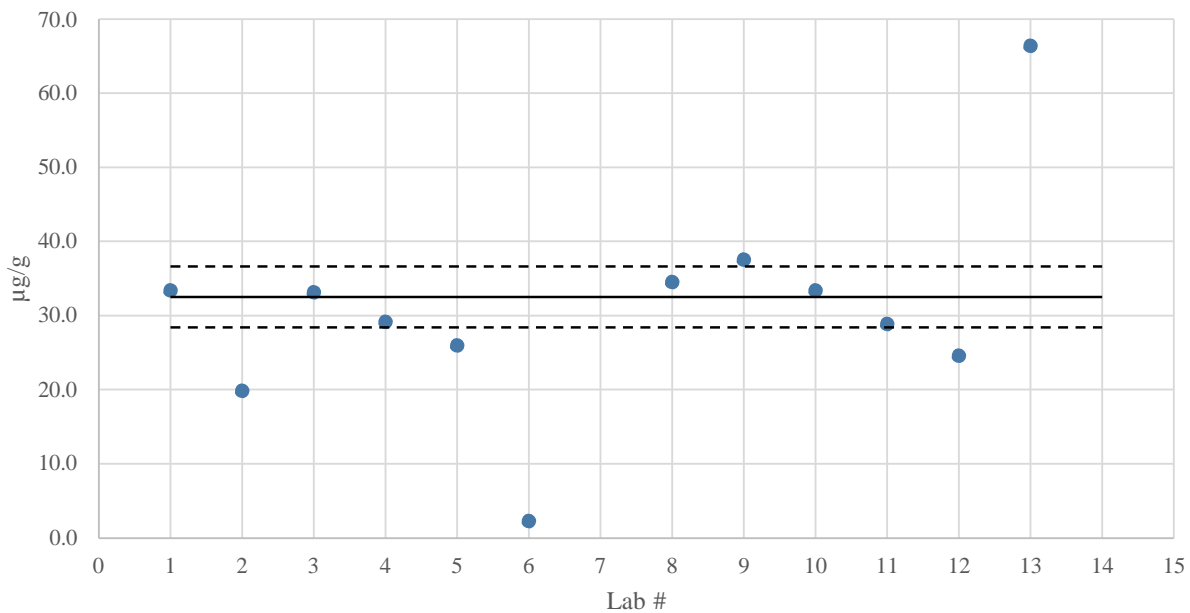
Unknown 02 - C18:3n3
median 16.1 $\mu\text{g/g}$



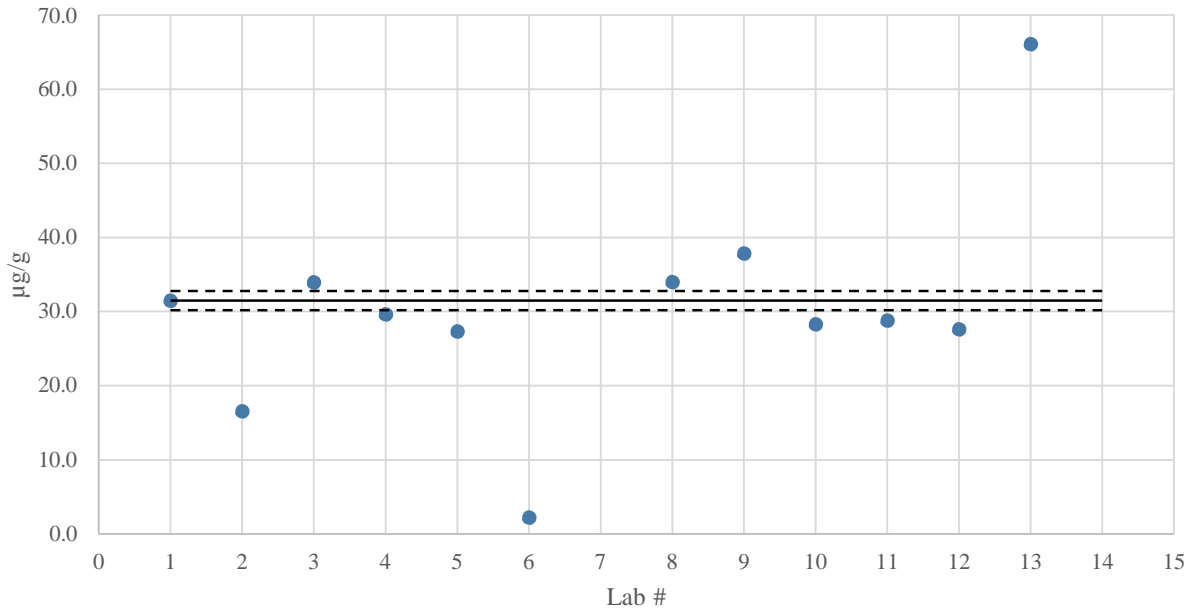
Unknown 03 - C18:3n3
median 20.9 $\mu\text{g/g}$



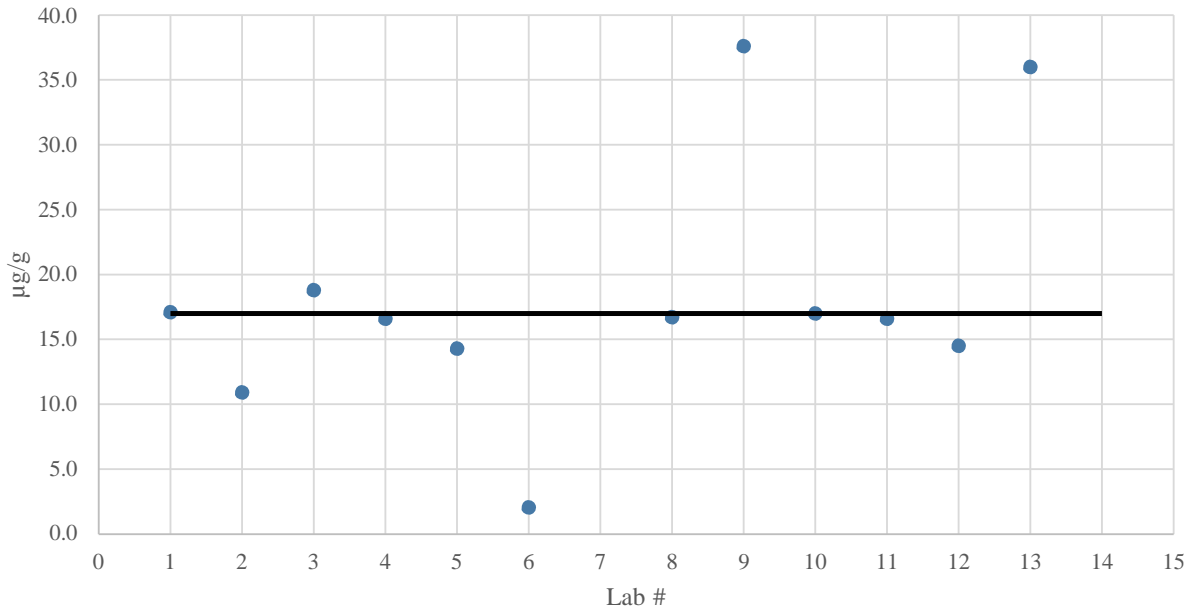
SRM 2378-1 - C18:3n3
Cert value (32.5 4.1) $\mu\text{g/g}$



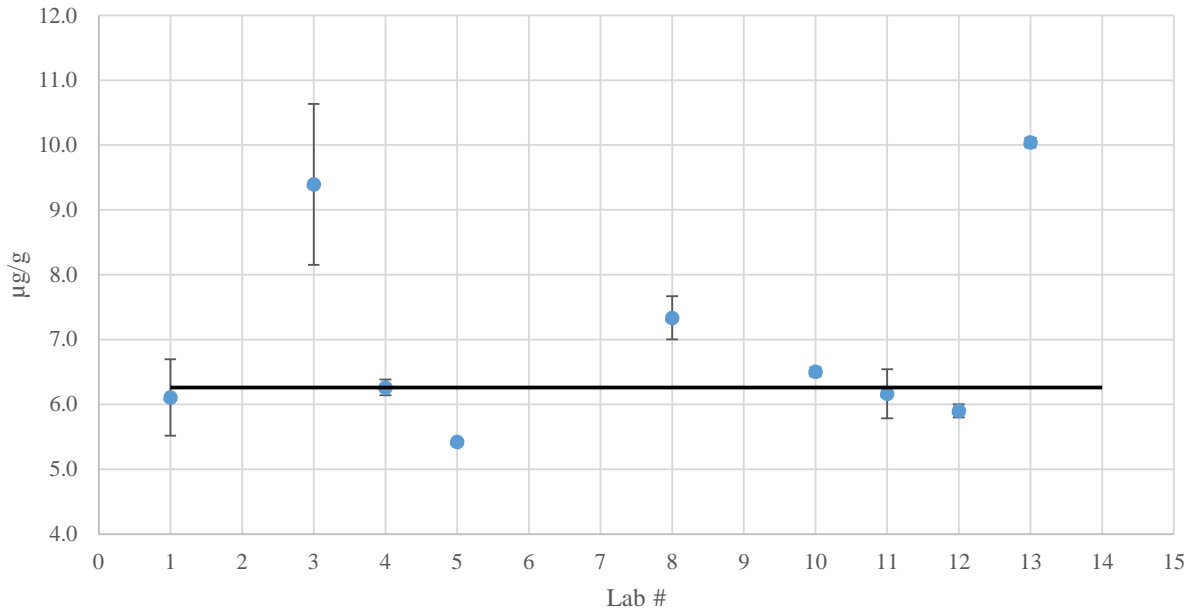
SRM 2378-2 - C18:3n3
Cert value (31.5 ± 1.3) µg/g



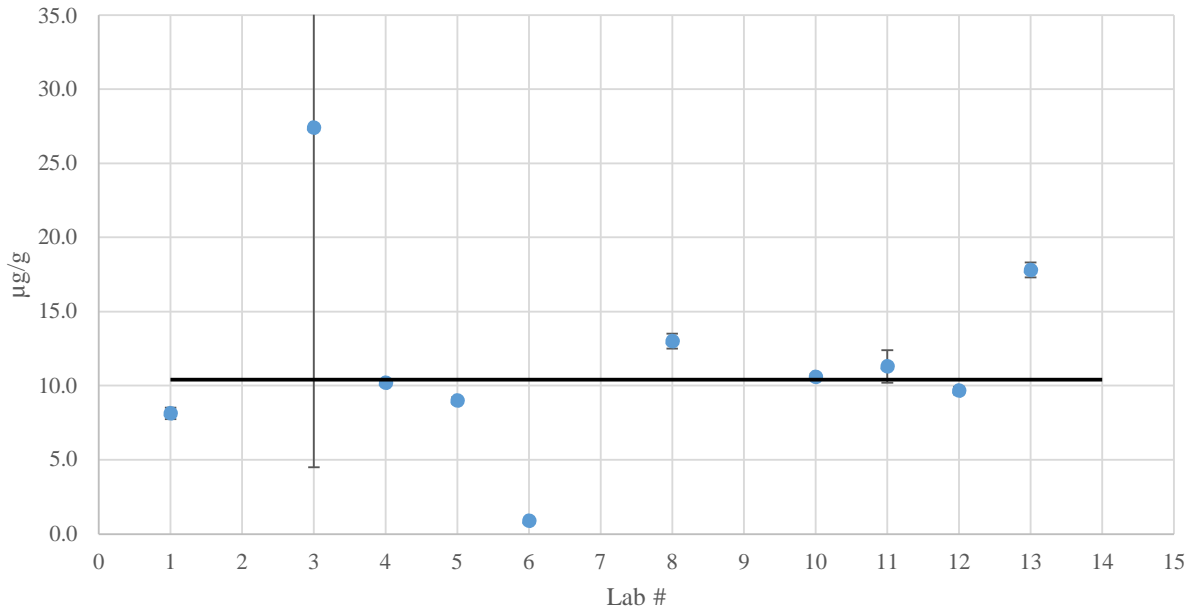
SRM 2378-3 - C18:3n3
Cert value (17.0 ± 0.1) µg/g



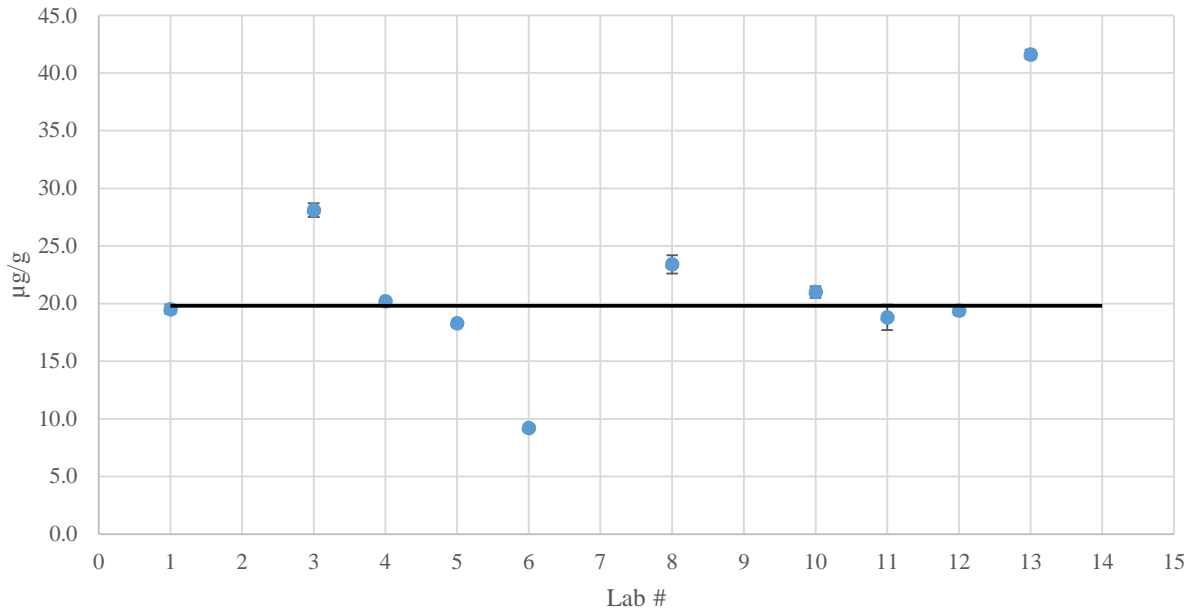
Unknown 01 - C18:3n6
median 6.26 $\mu\text{g/g}$



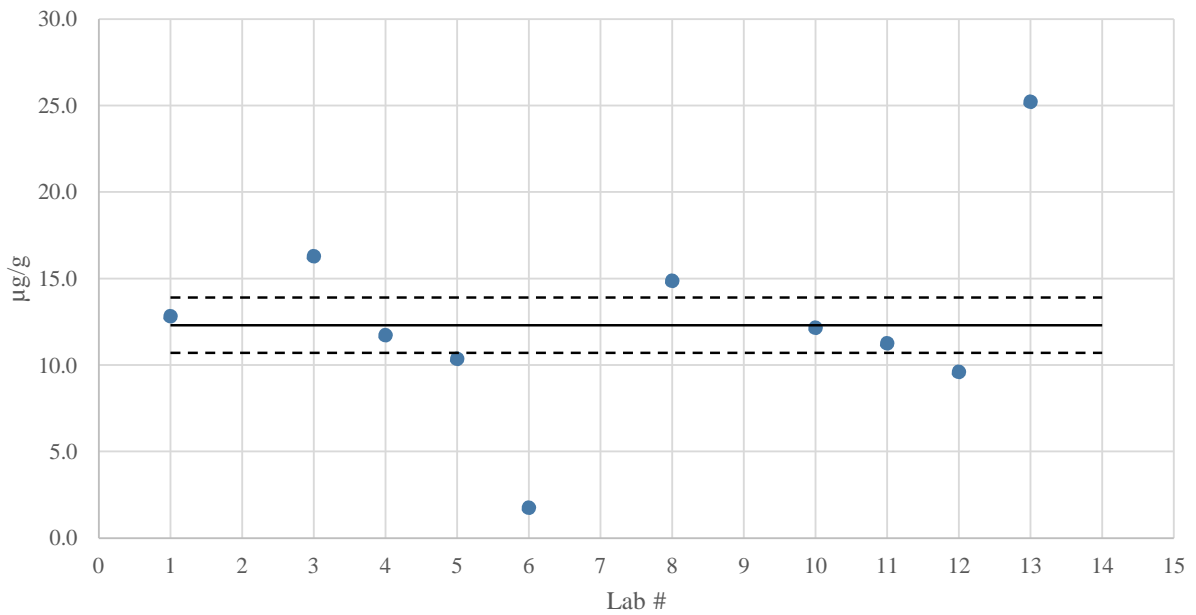
Unknown 02 - C18:3n6
median 10.4 $\mu\text{g/g}$



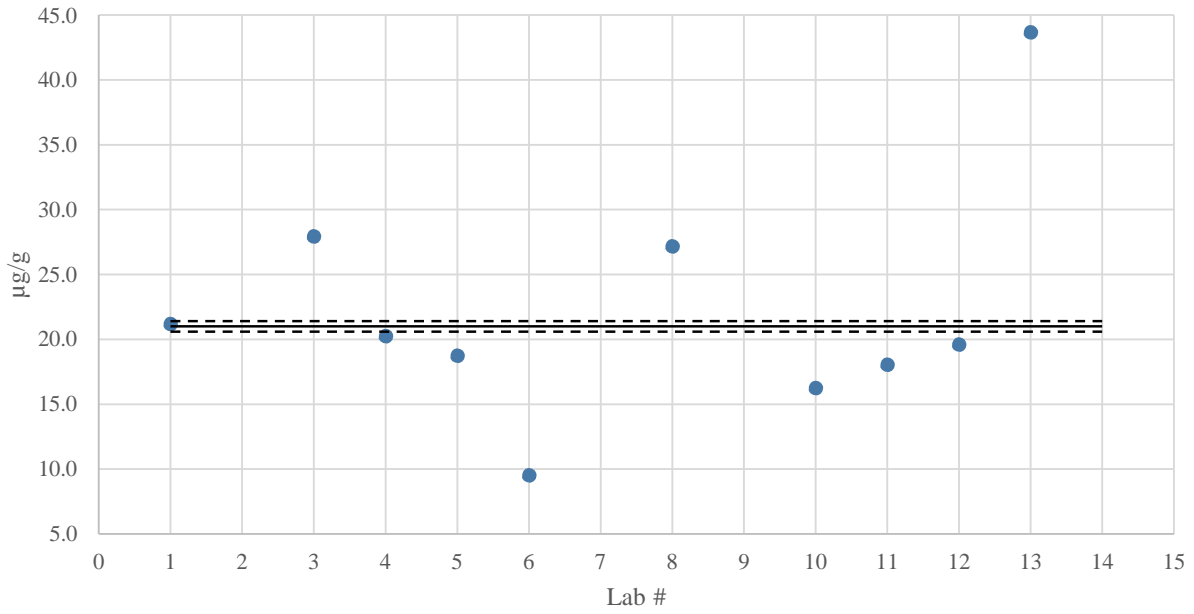
Unknown 03 - C18:3n6
median 19.8 $\mu\text{g/g}$



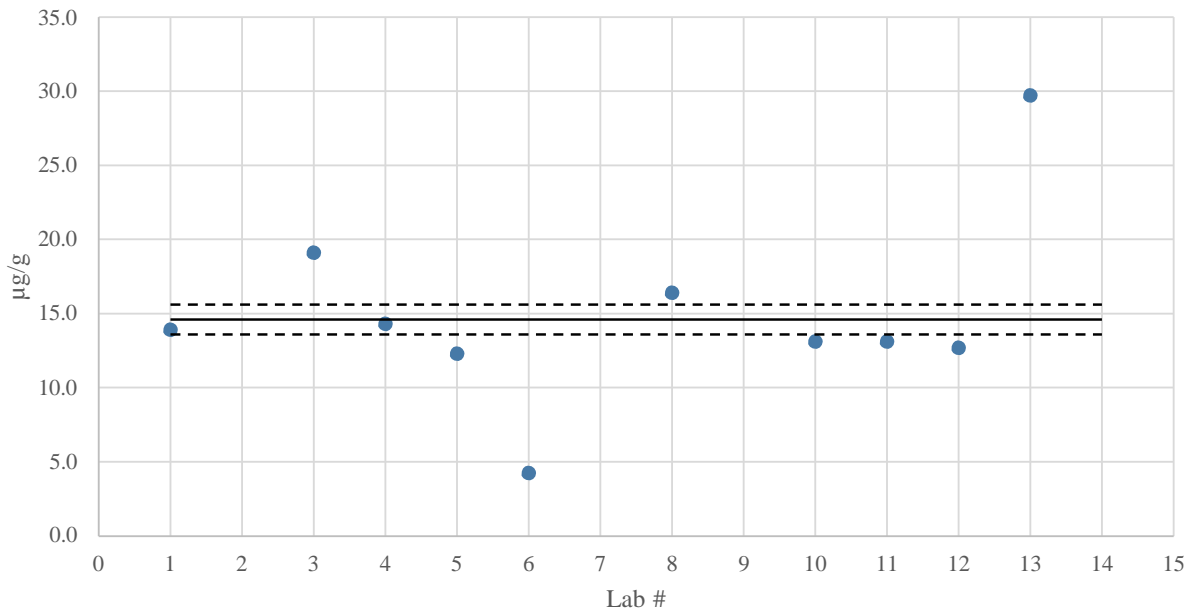
SRM 2378-1 - C18:3n6
Cert value (12.3 1.6) $\mu\text{g/g}$



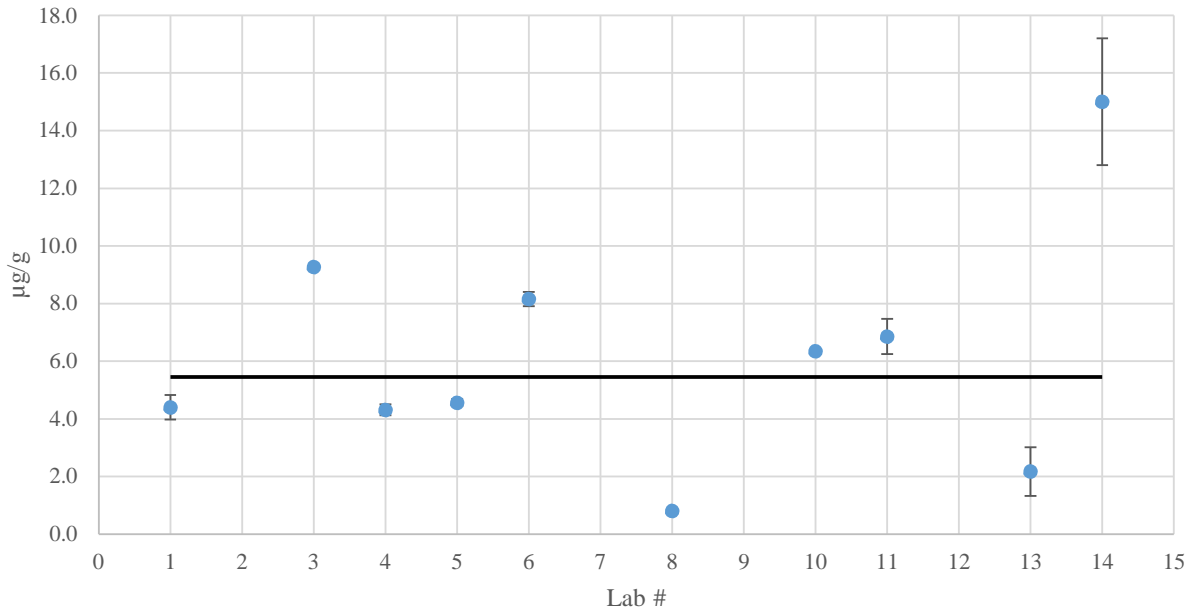
SRM 2378-2 - C18:3n6
Cert value (21.0 ± 0.4) µg/g



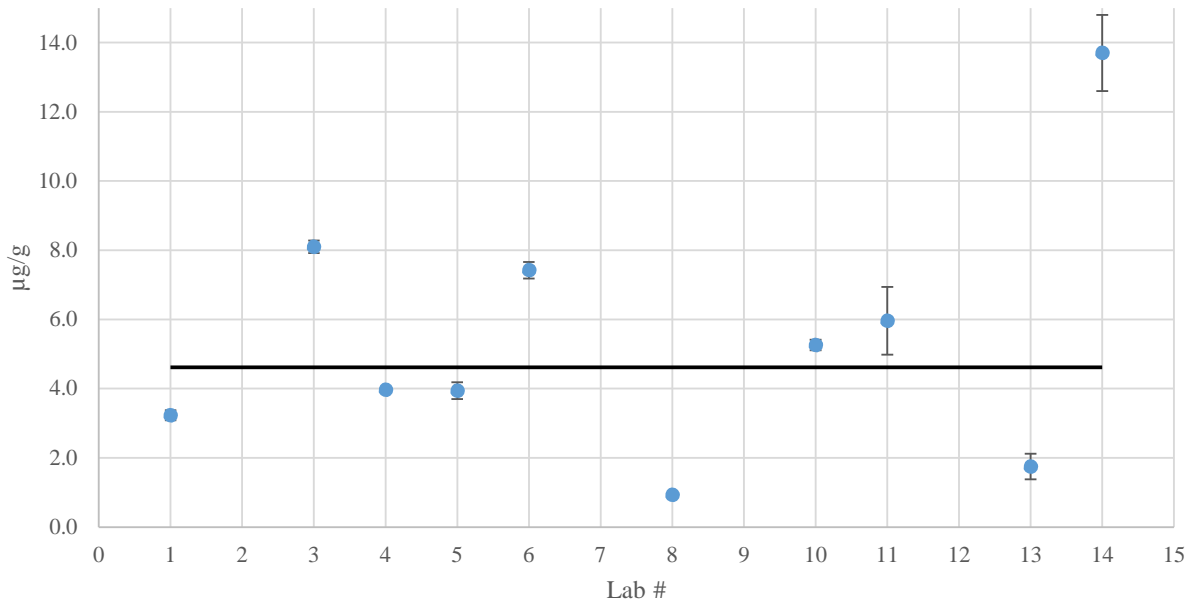
SRM 2378-3 - C18:3n6
Cert value (14.6 ± 1.0) µg/g

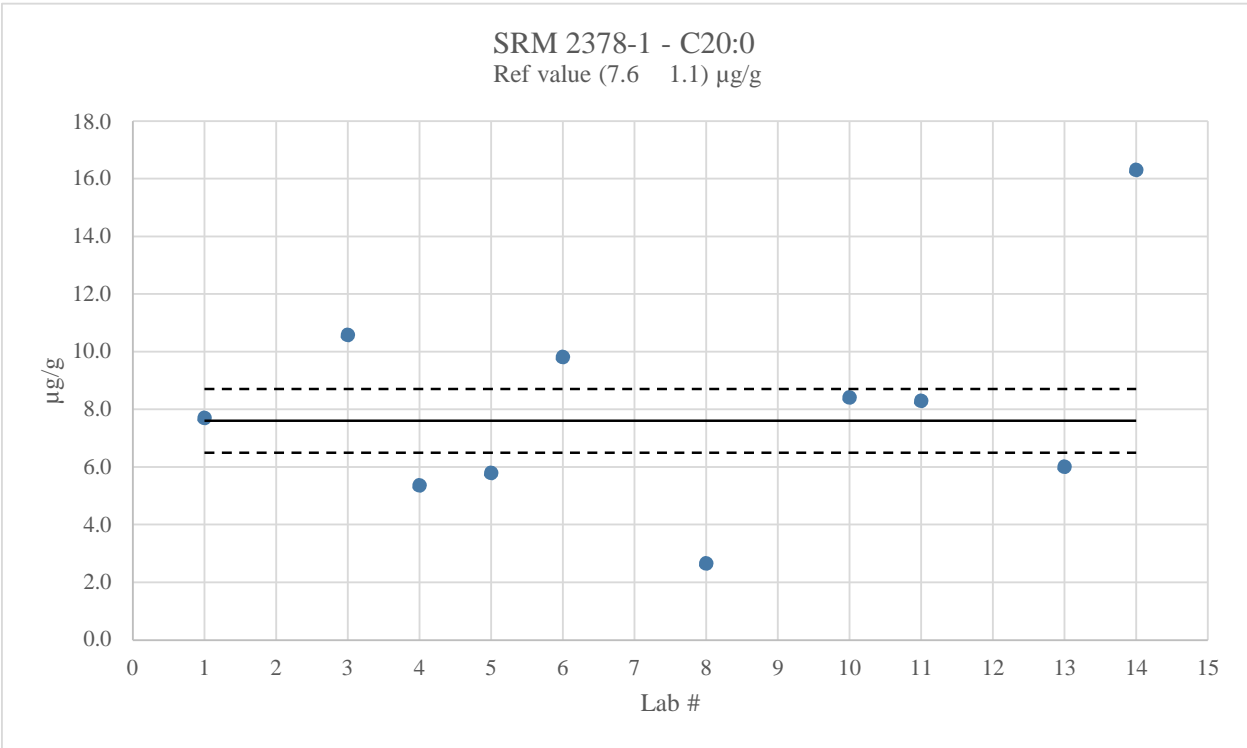
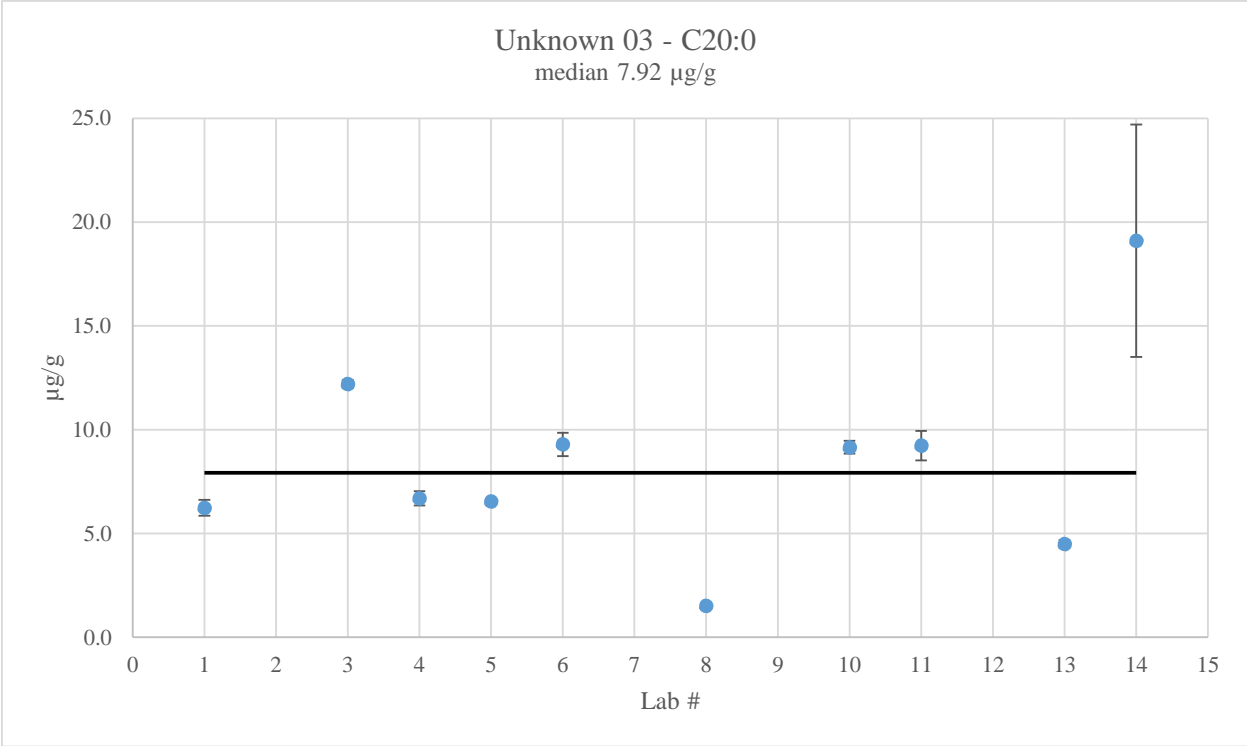


Unknown 01 - C20:0
median 5.45 $\mu\text{g/g}$

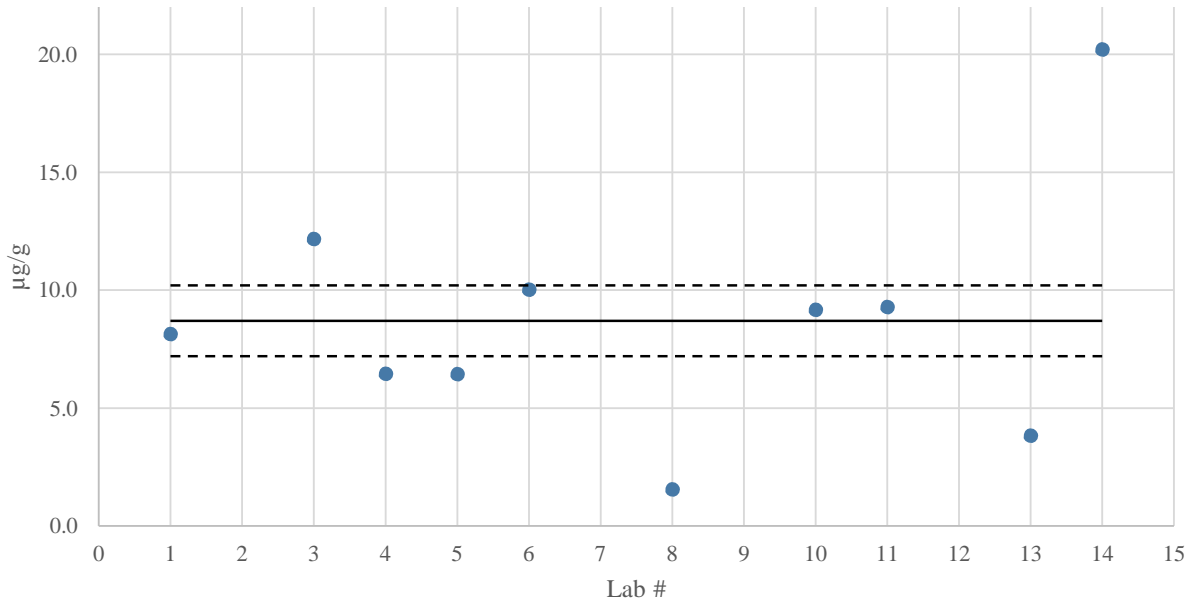


Unknown 02 - C20:0
median 4.61 $\mu\text{g/g}$

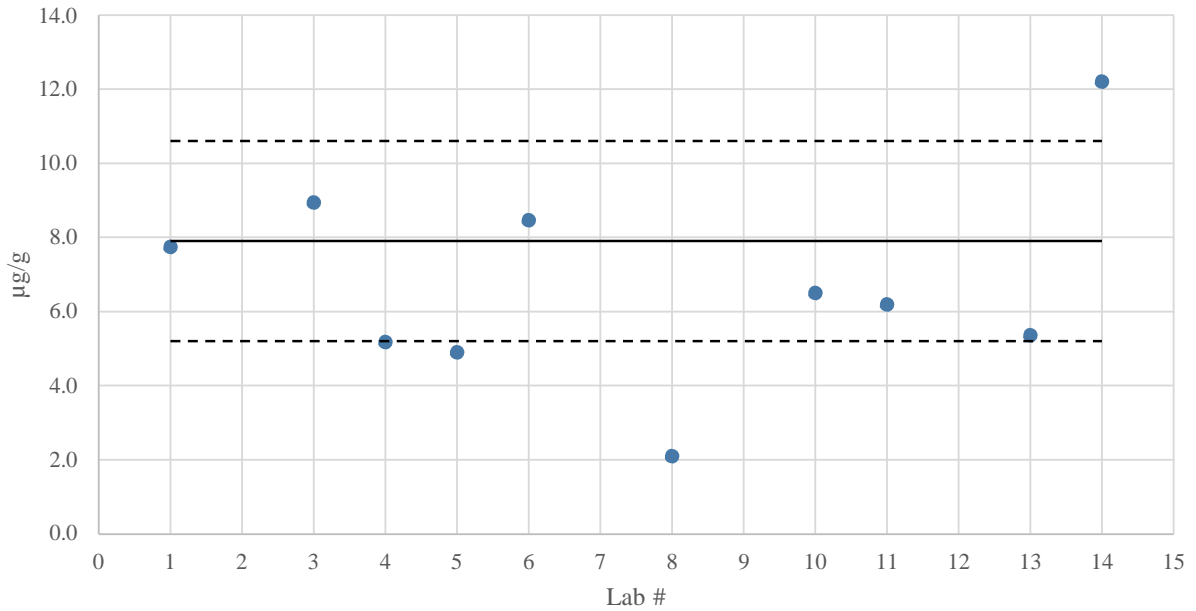


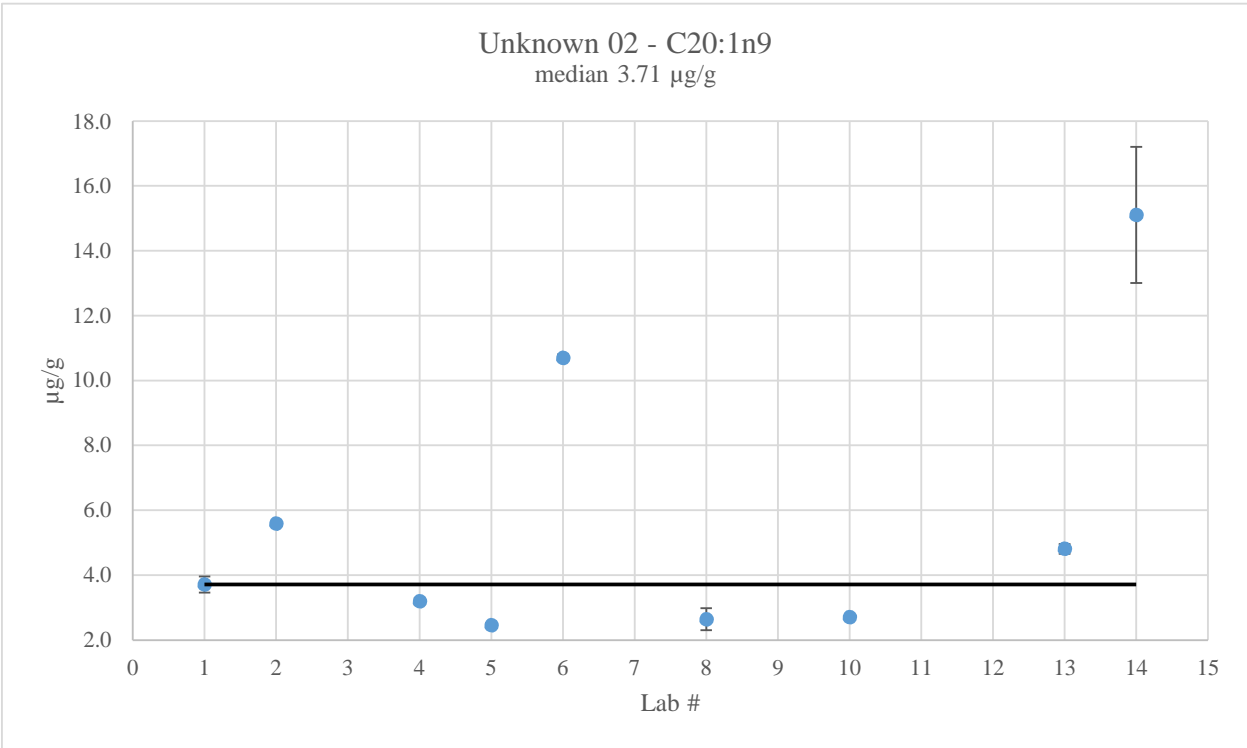
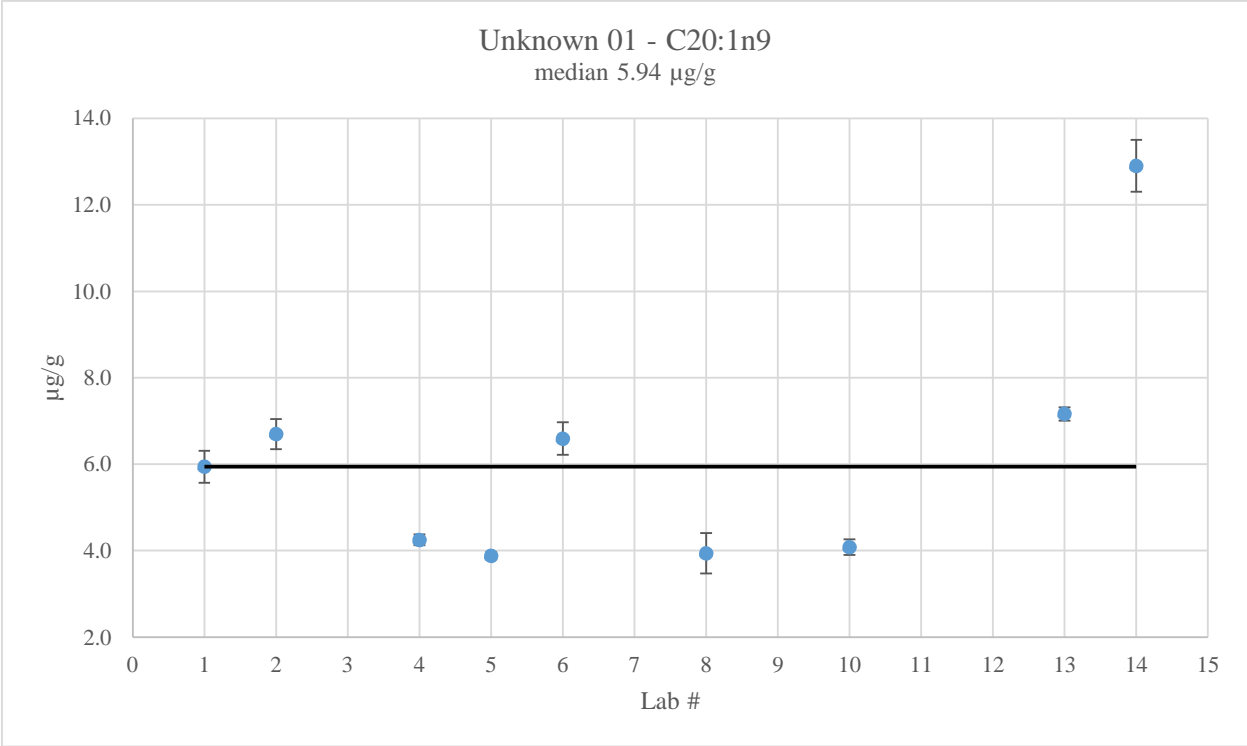


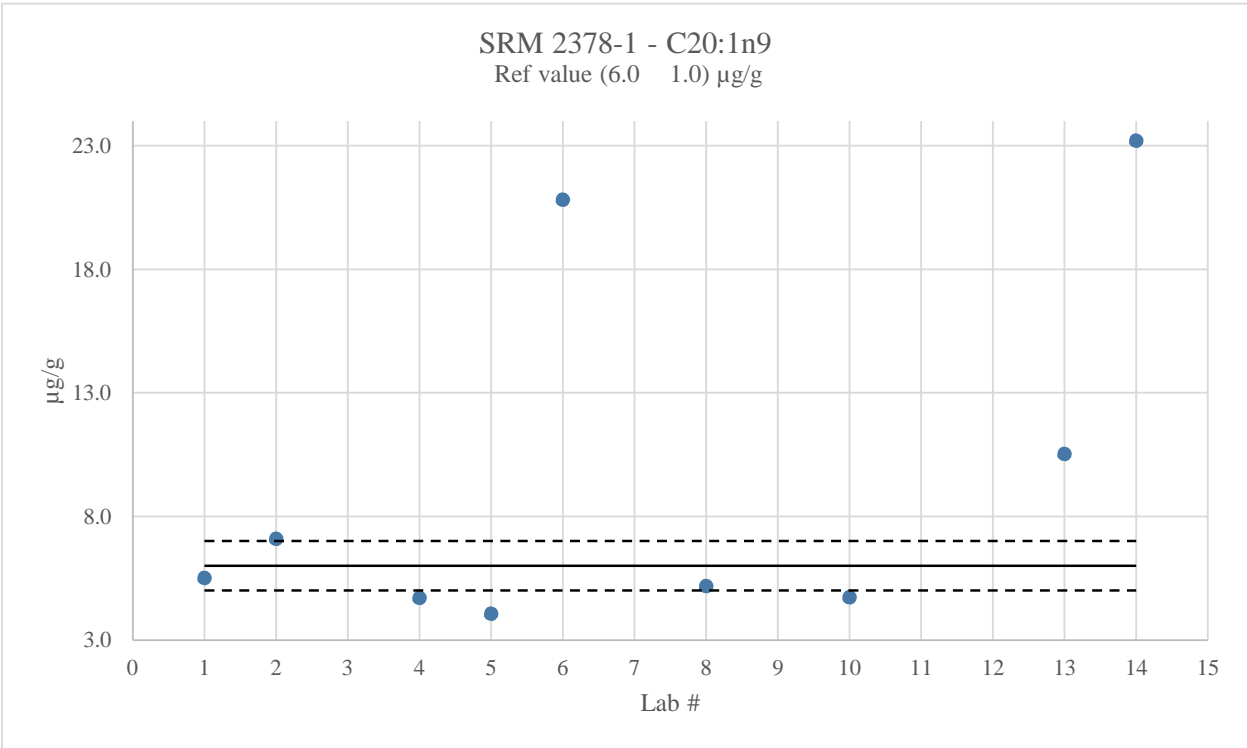
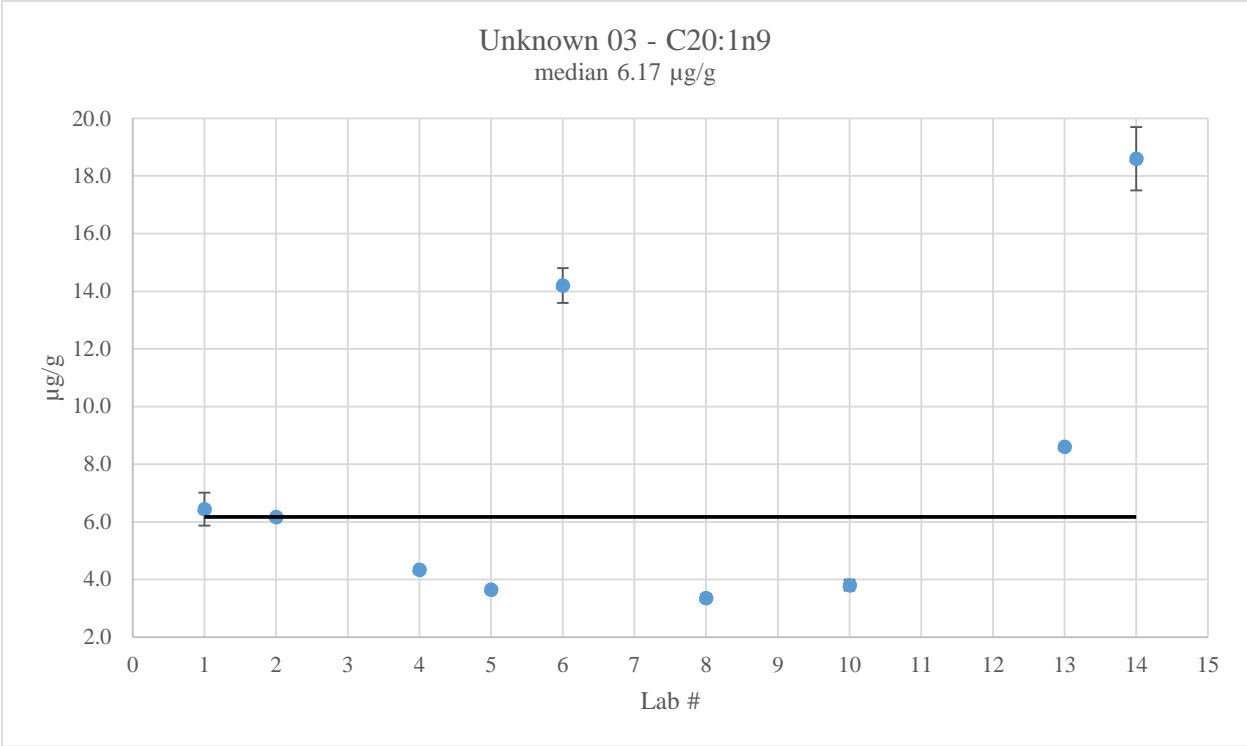
SRM 2378-2 - C20:0
Ref value (8.7 1.5) $\mu\text{g/g}$

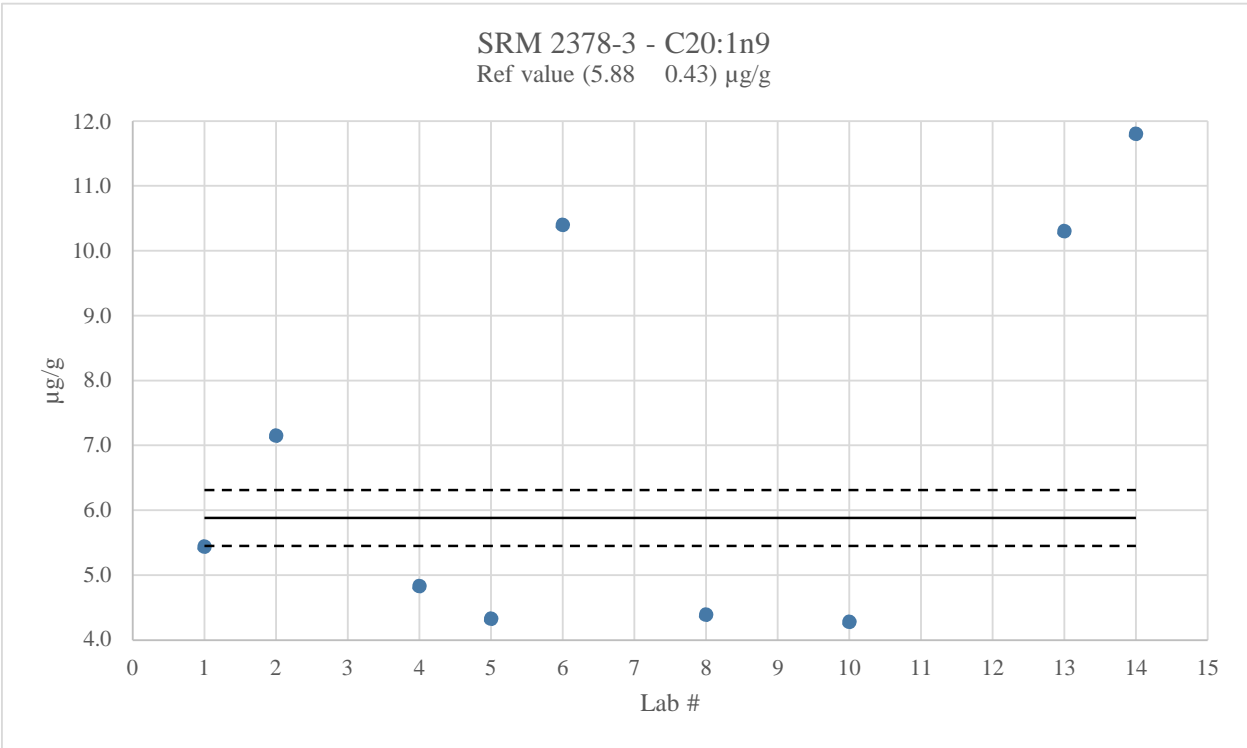
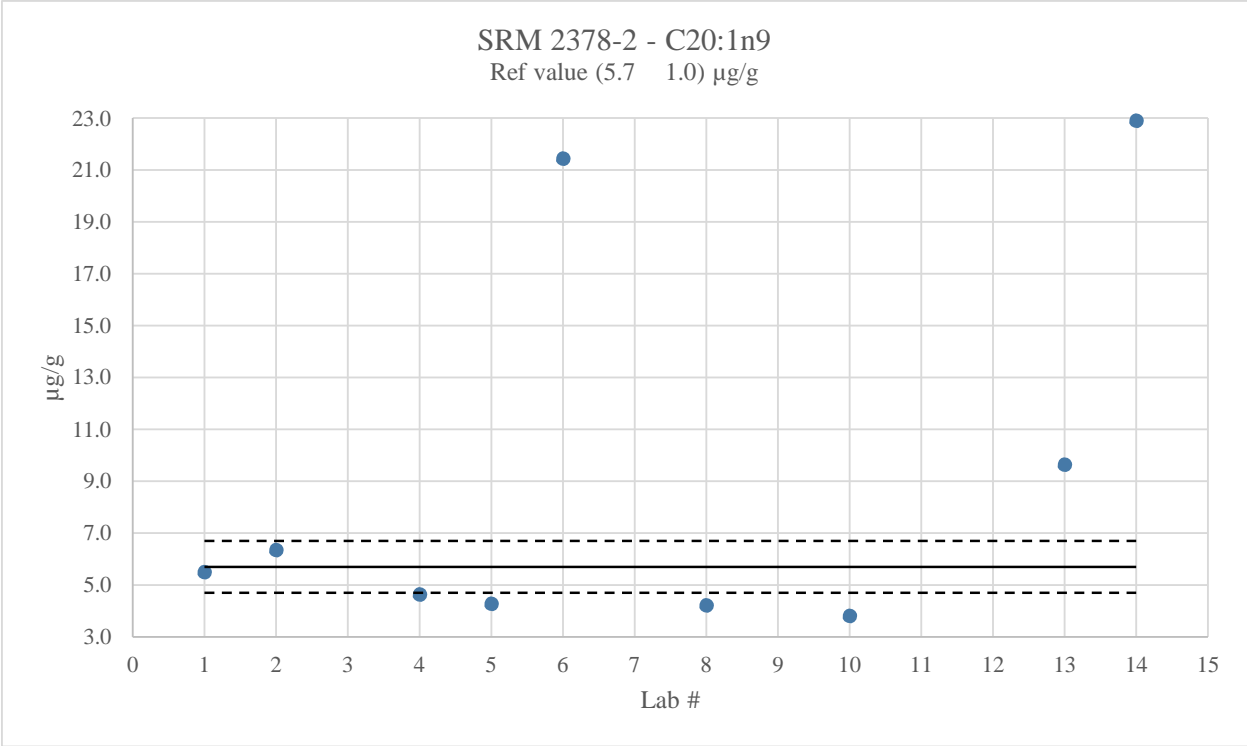


SRM 2378-3 - C20:0
Ref value (7.9 2.7) $\mu\text{g/g}$

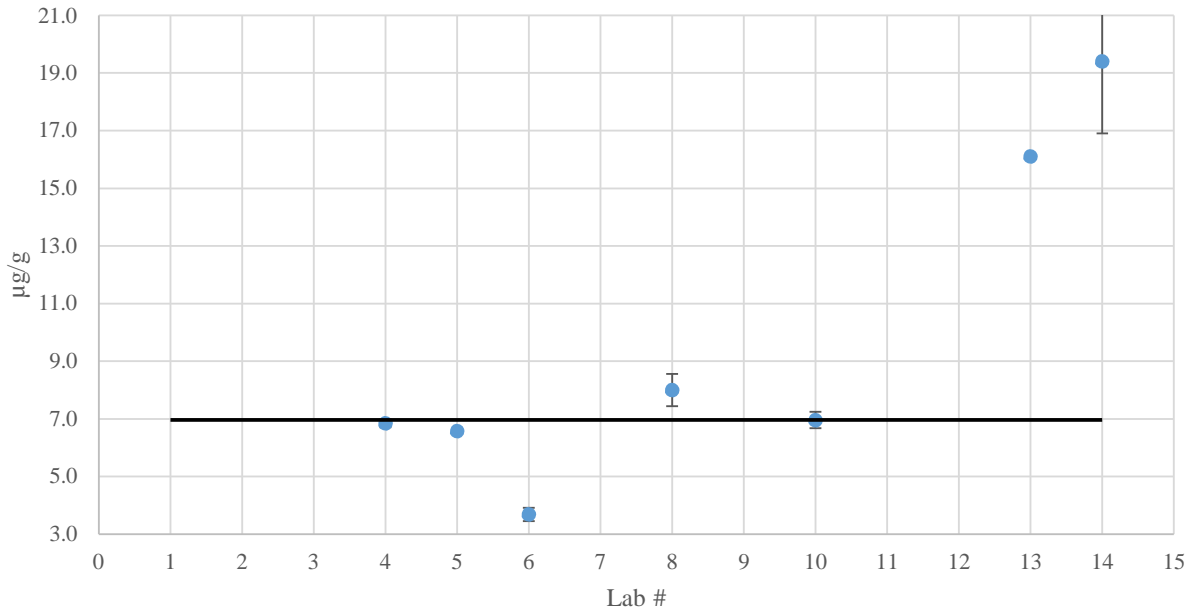




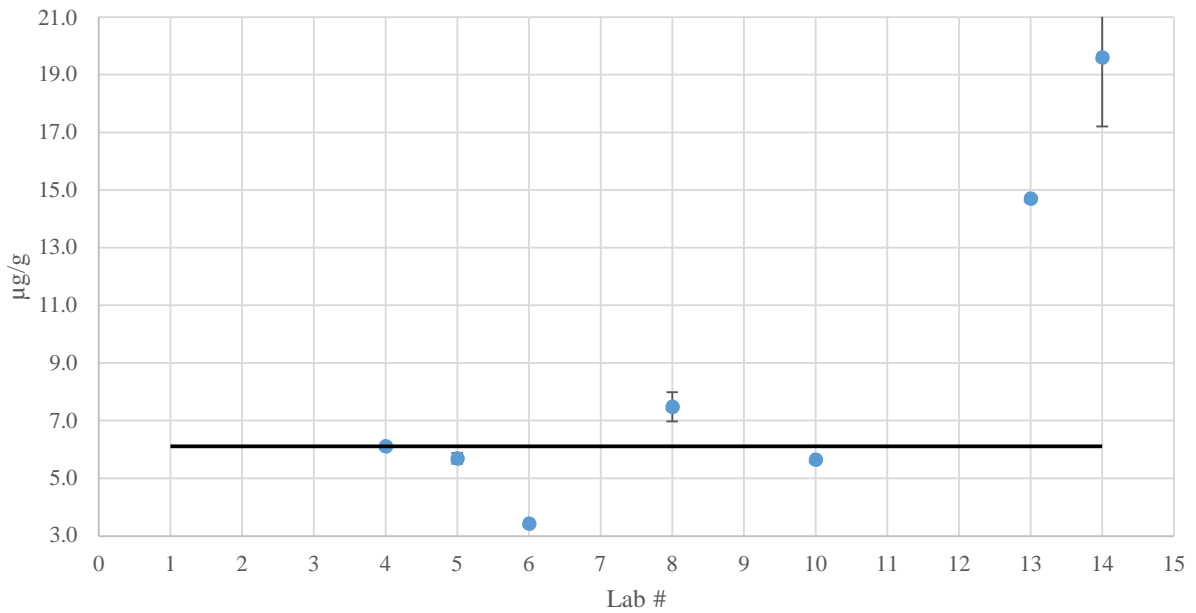




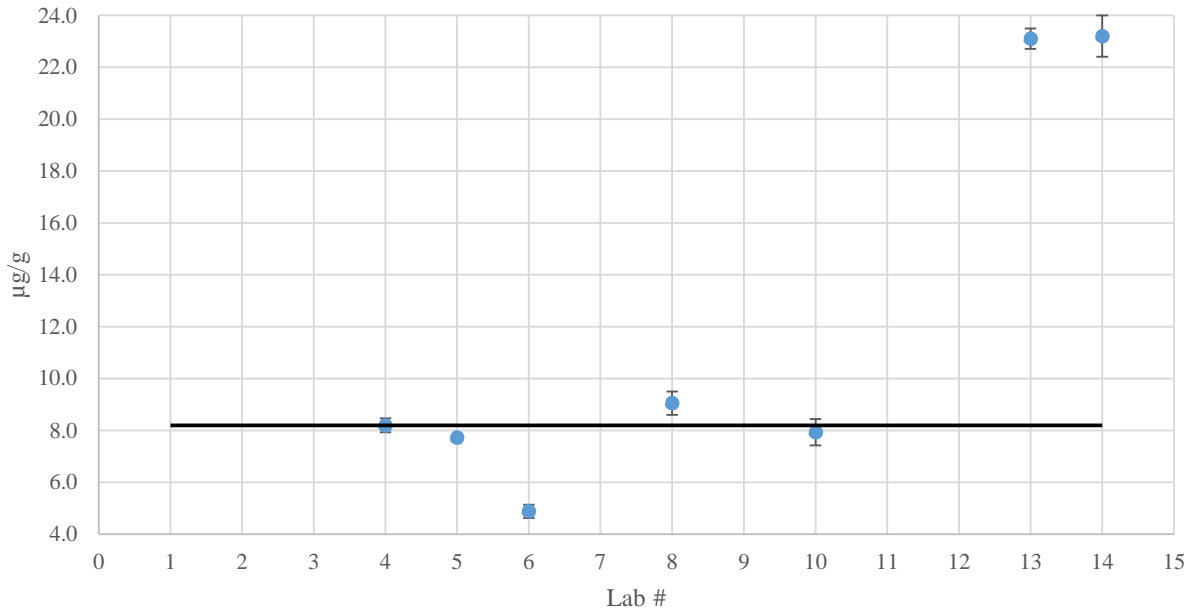
Unknown 01 - C20:2n6
median 6.96 $\mu\text{g/g}$



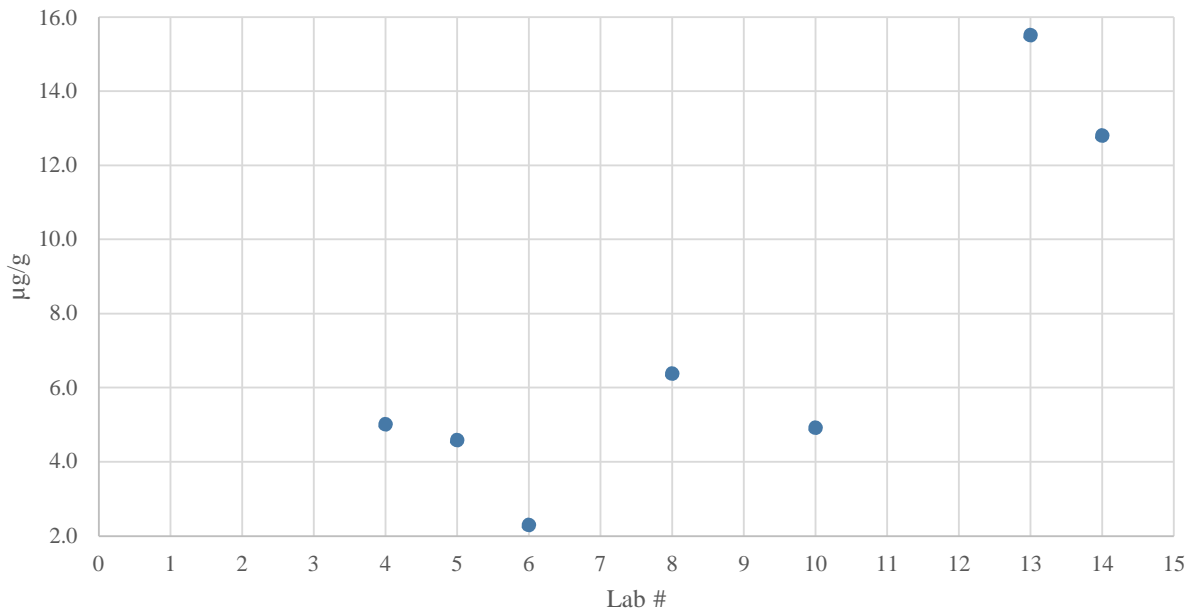
Unknown 02 - C20:2n6
median 6.11 $\mu\text{g/g}$



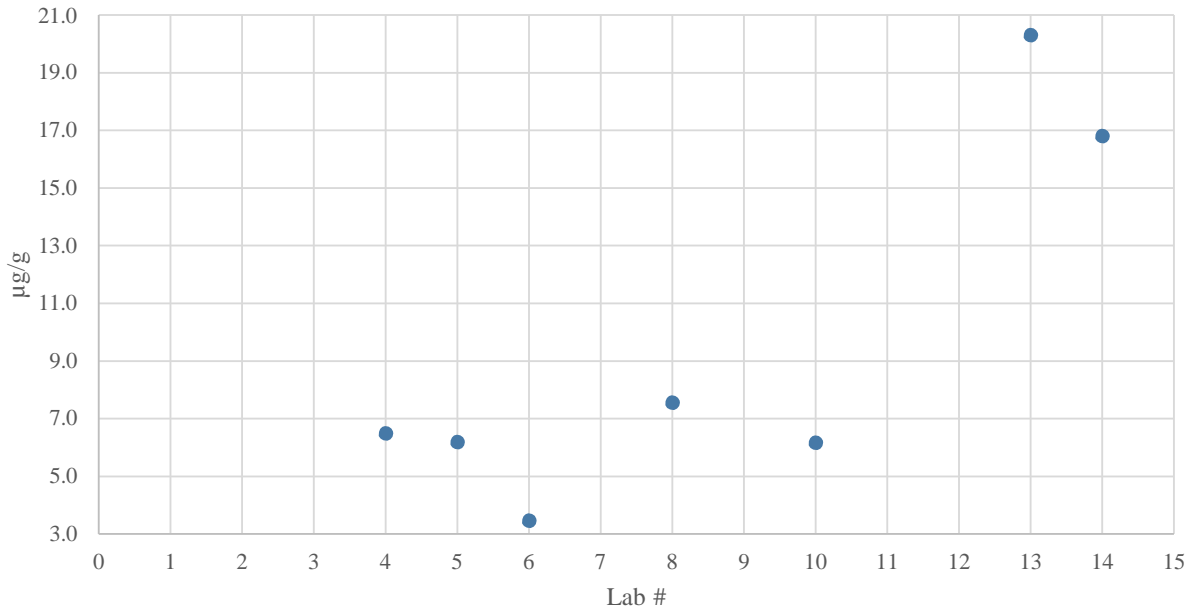
Unknown 03 - C20:2n6
median 8.19 $\mu\text{g/g}$



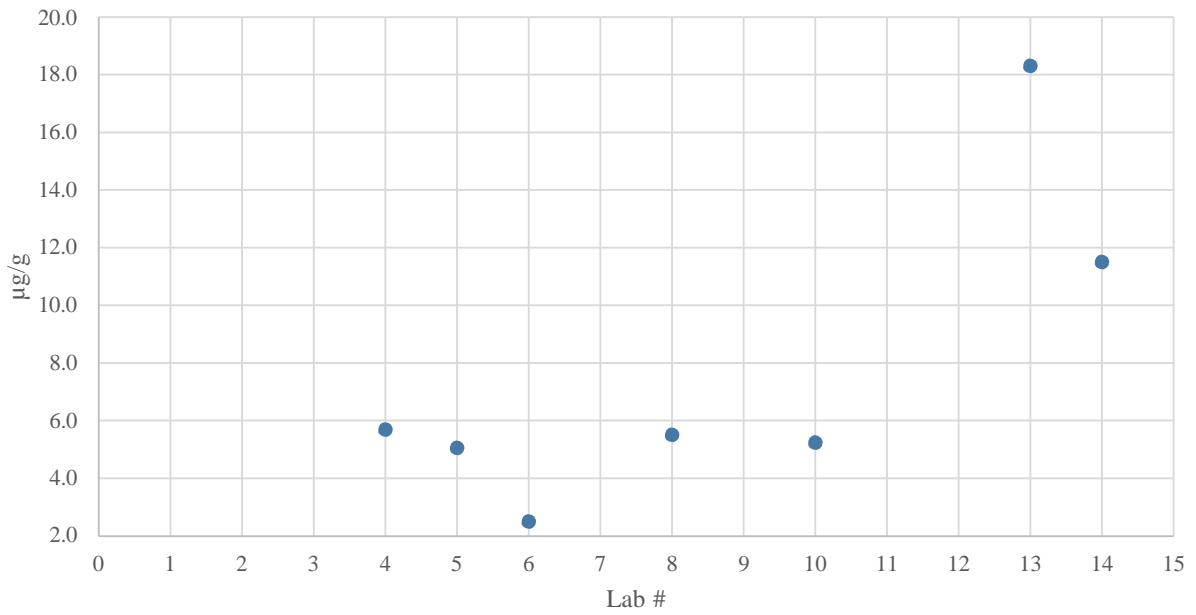
SRM 2378-1 - C20:2n6
No ref value

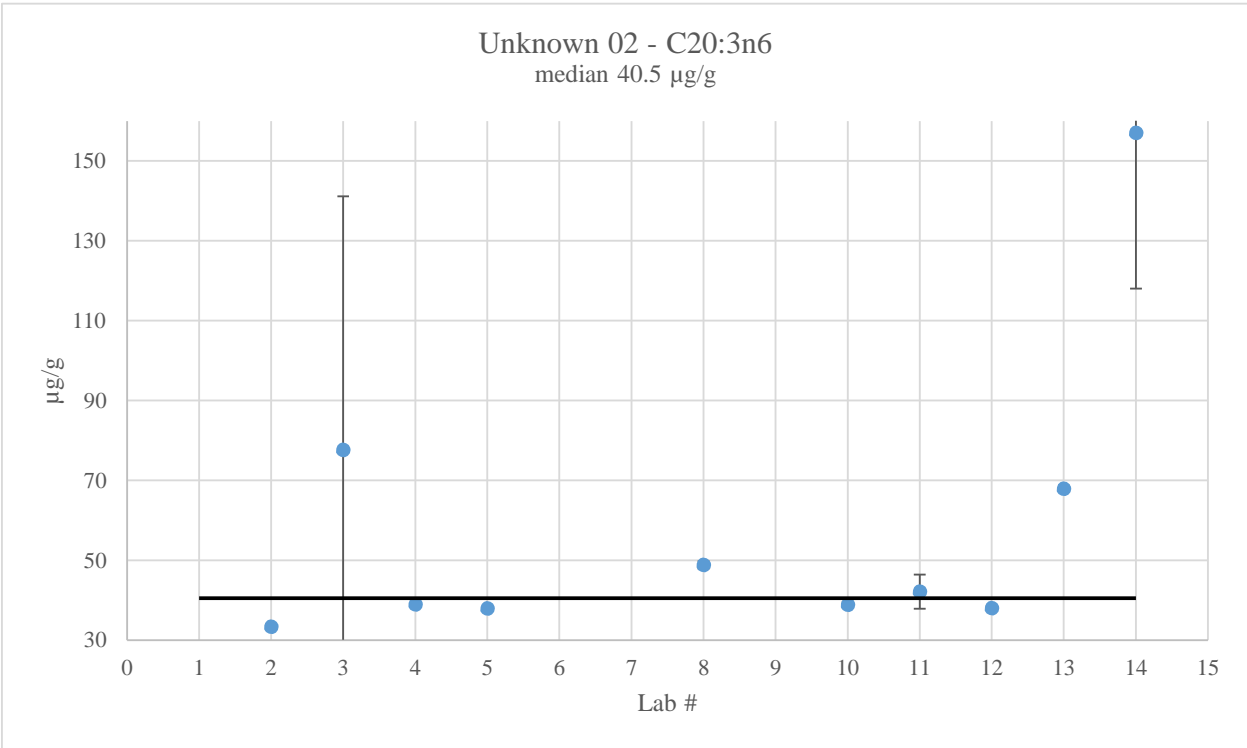
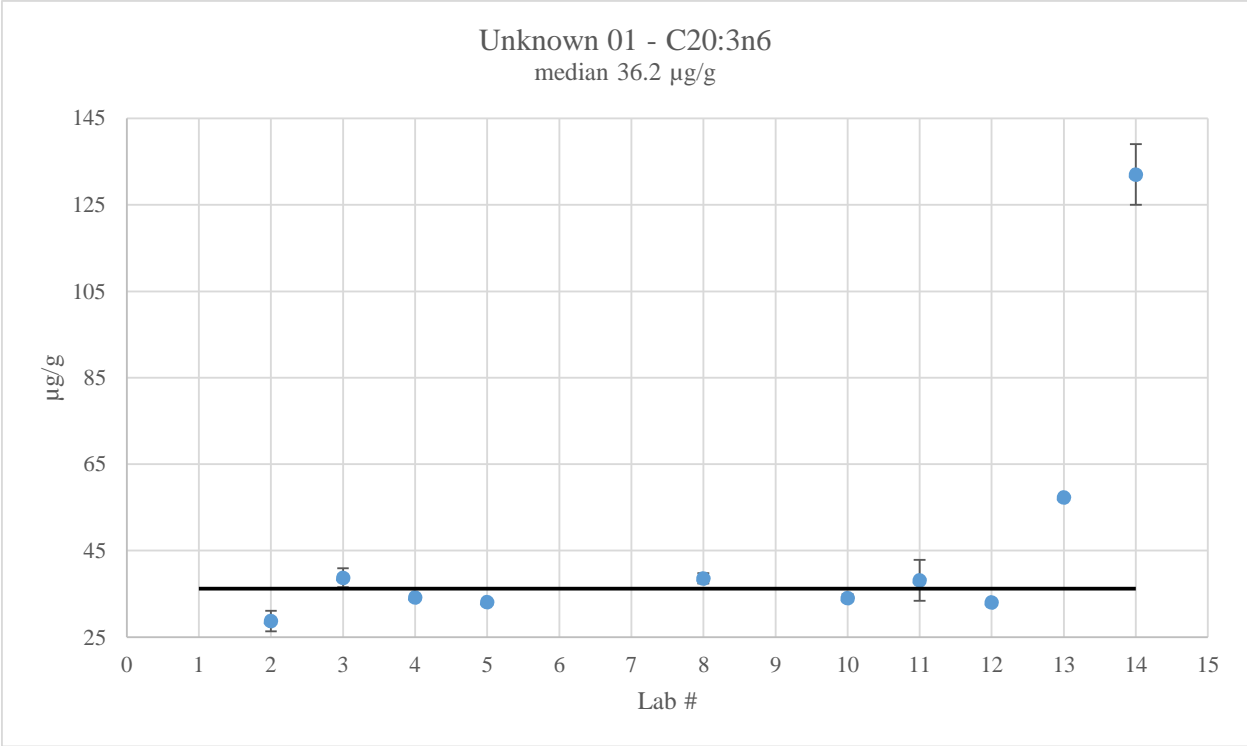


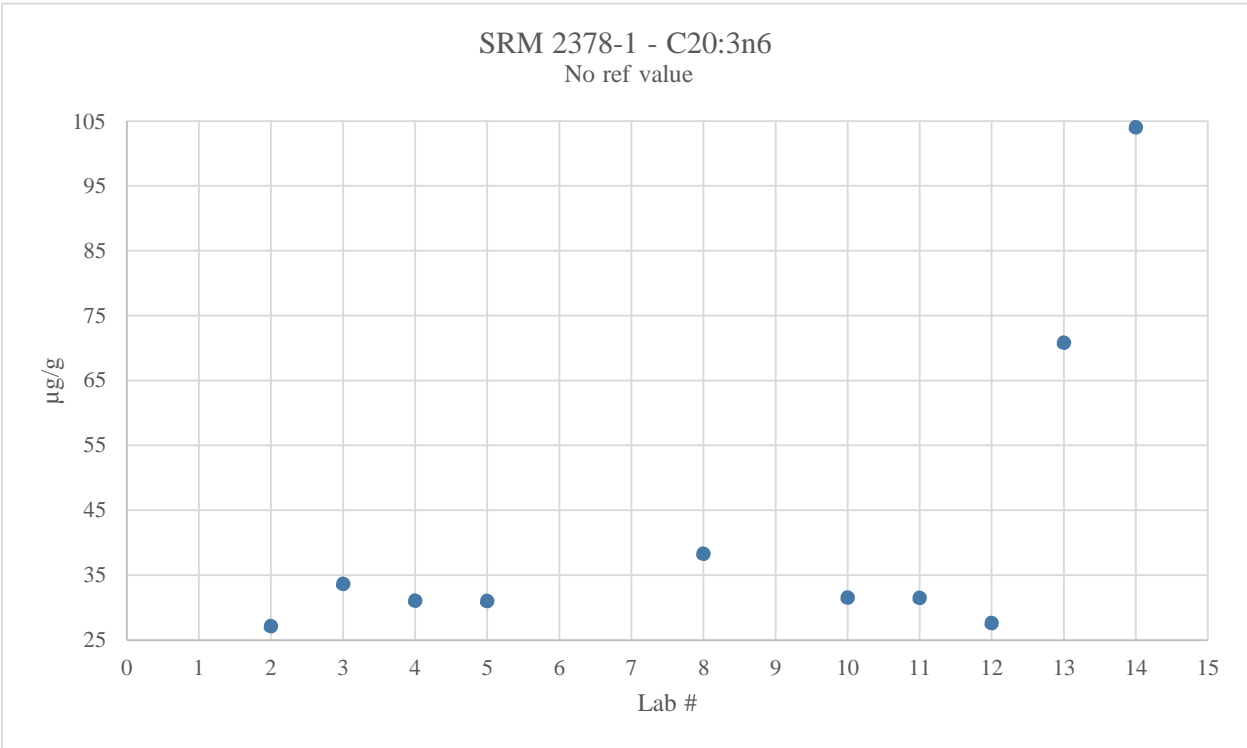
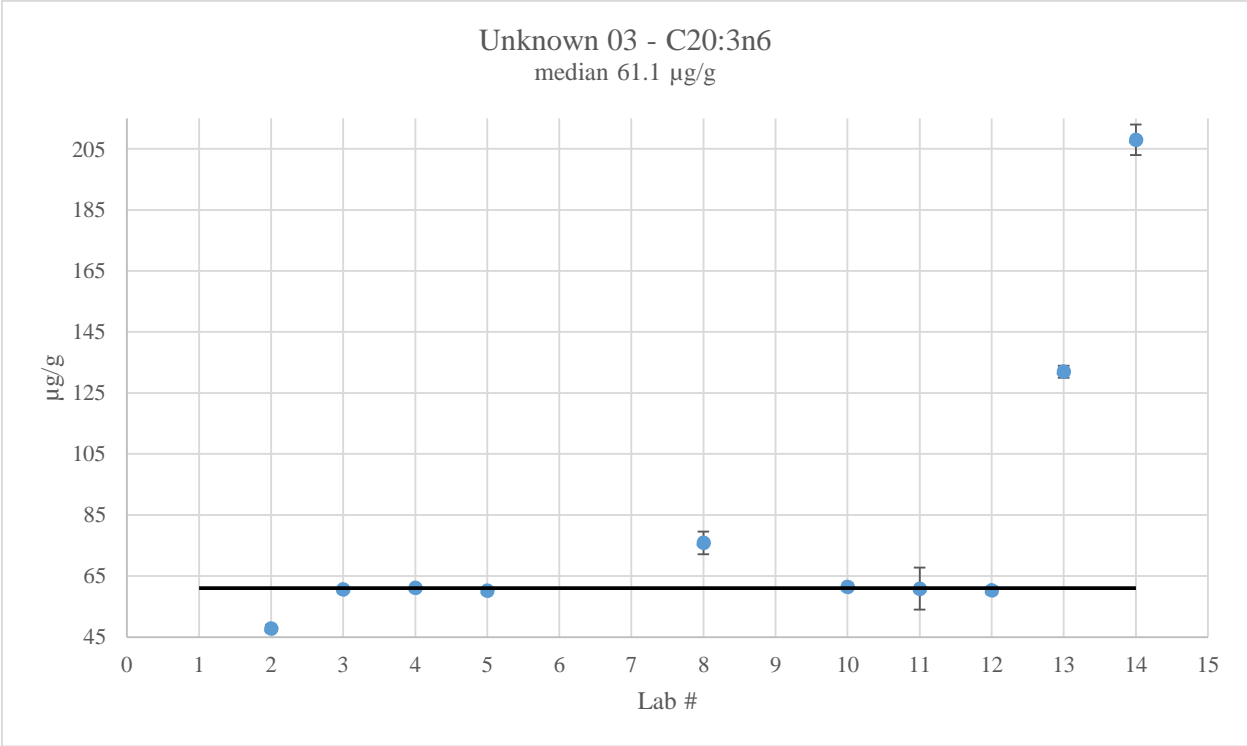
SRM 2378-2 - C20:2n6
No ref value

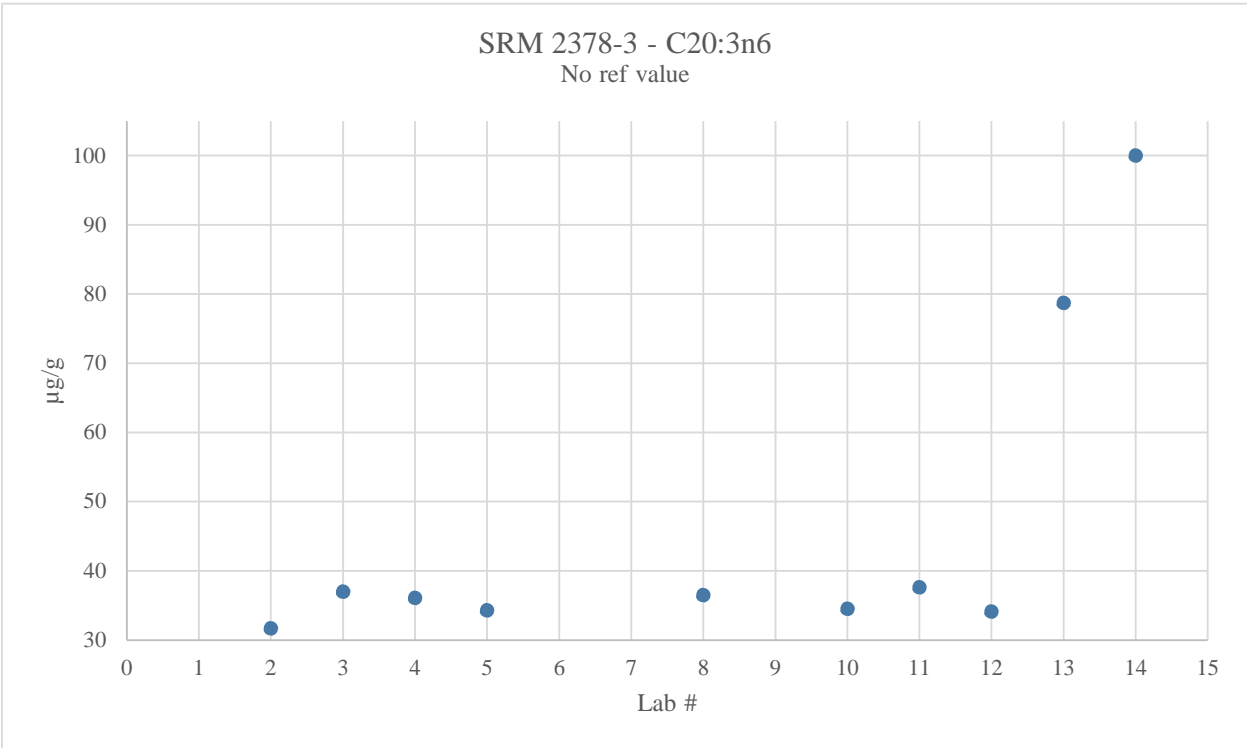
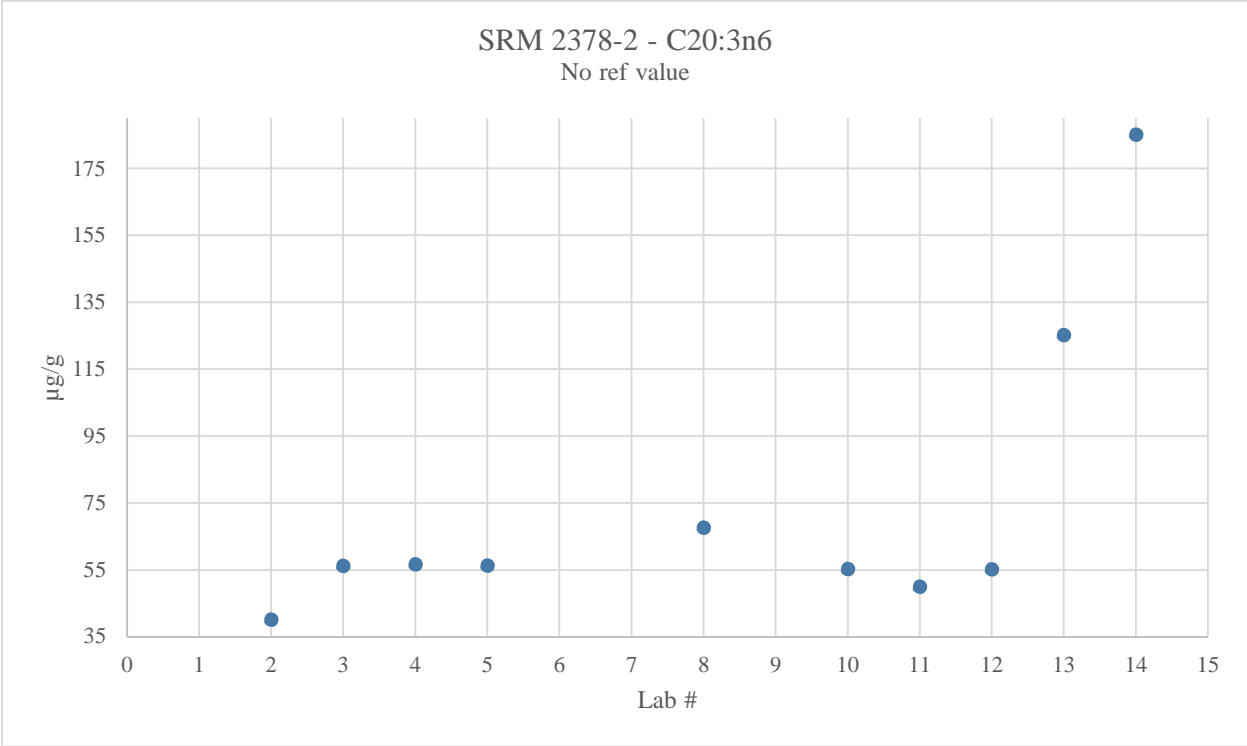


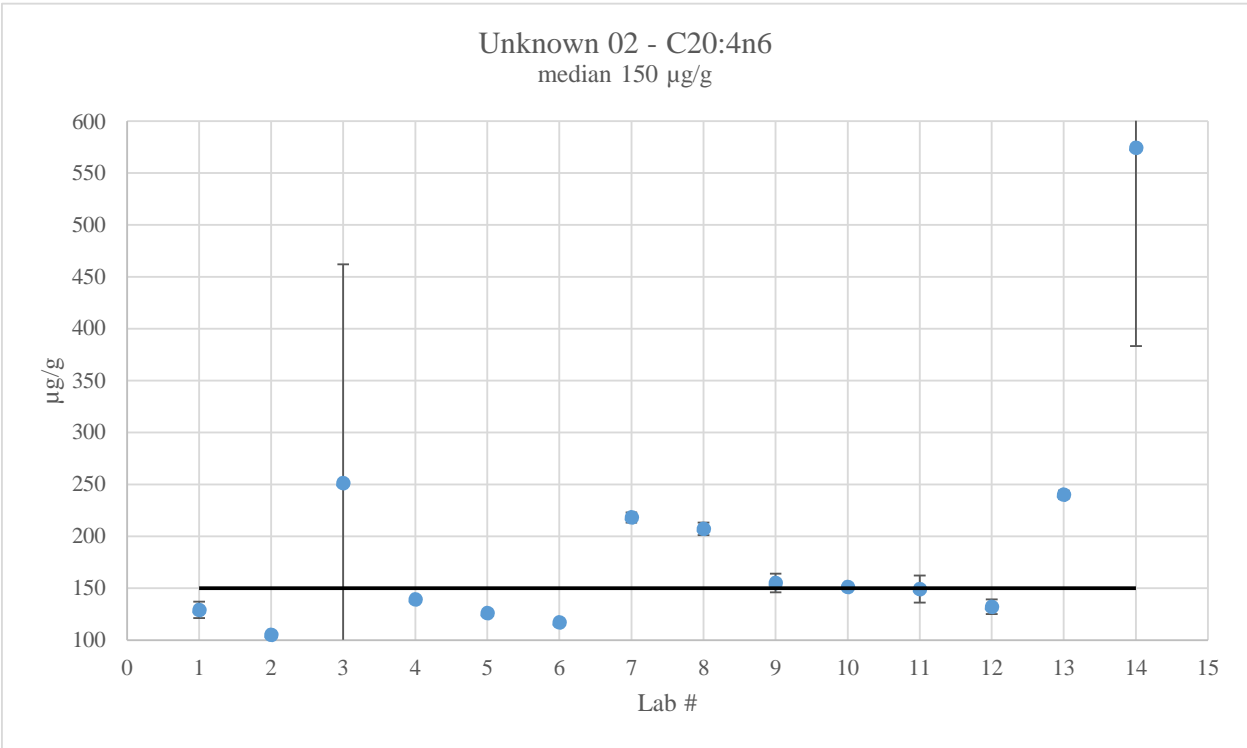
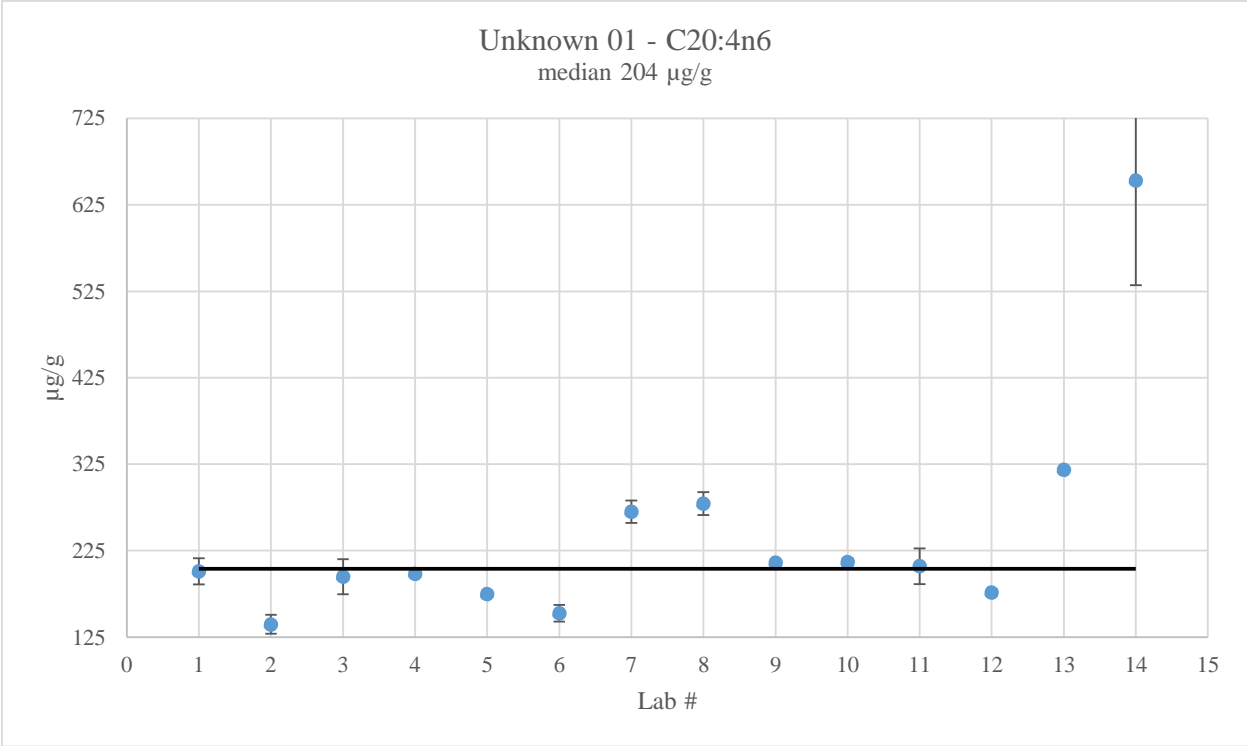
SRM 2378-3 - C20:2n6
No ref value

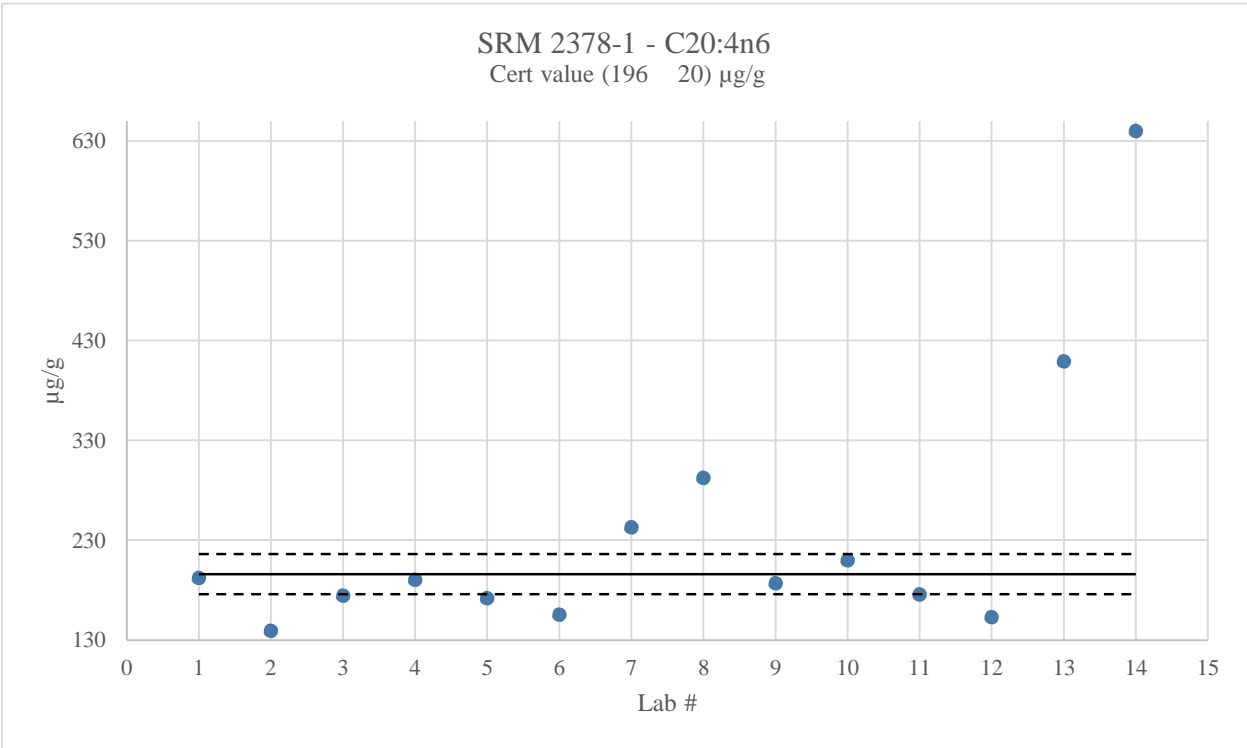
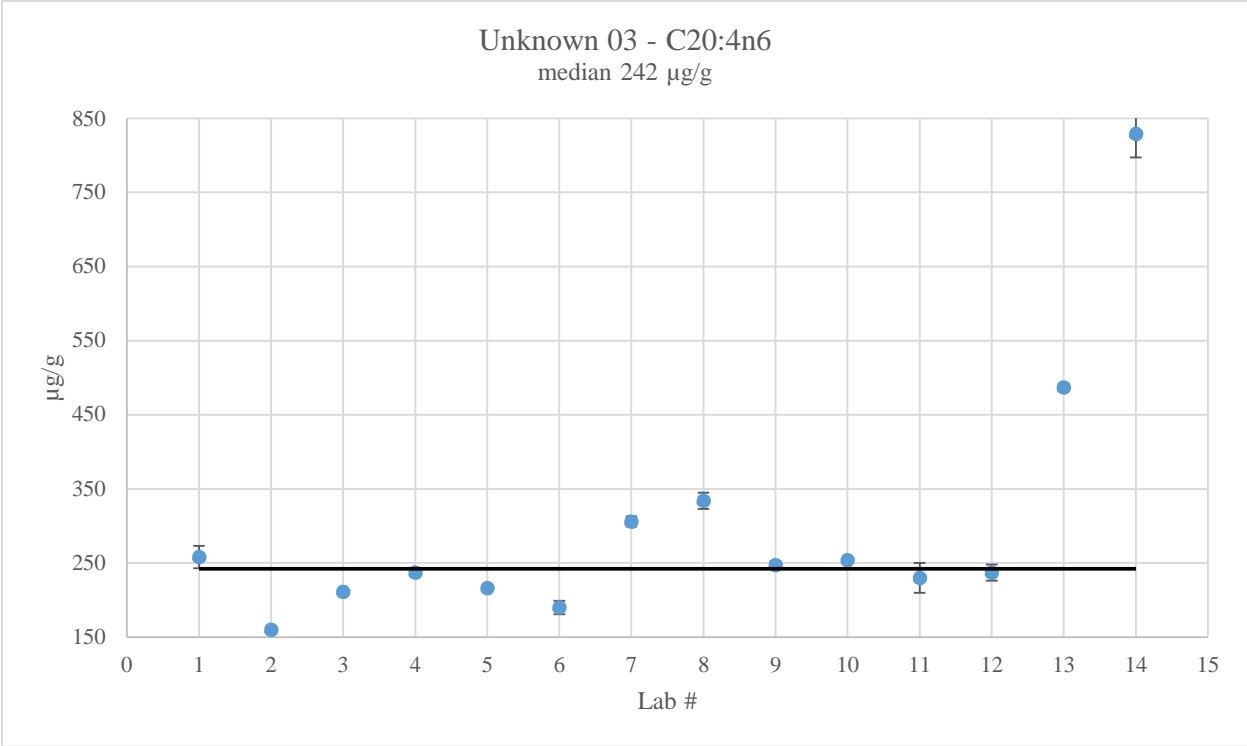


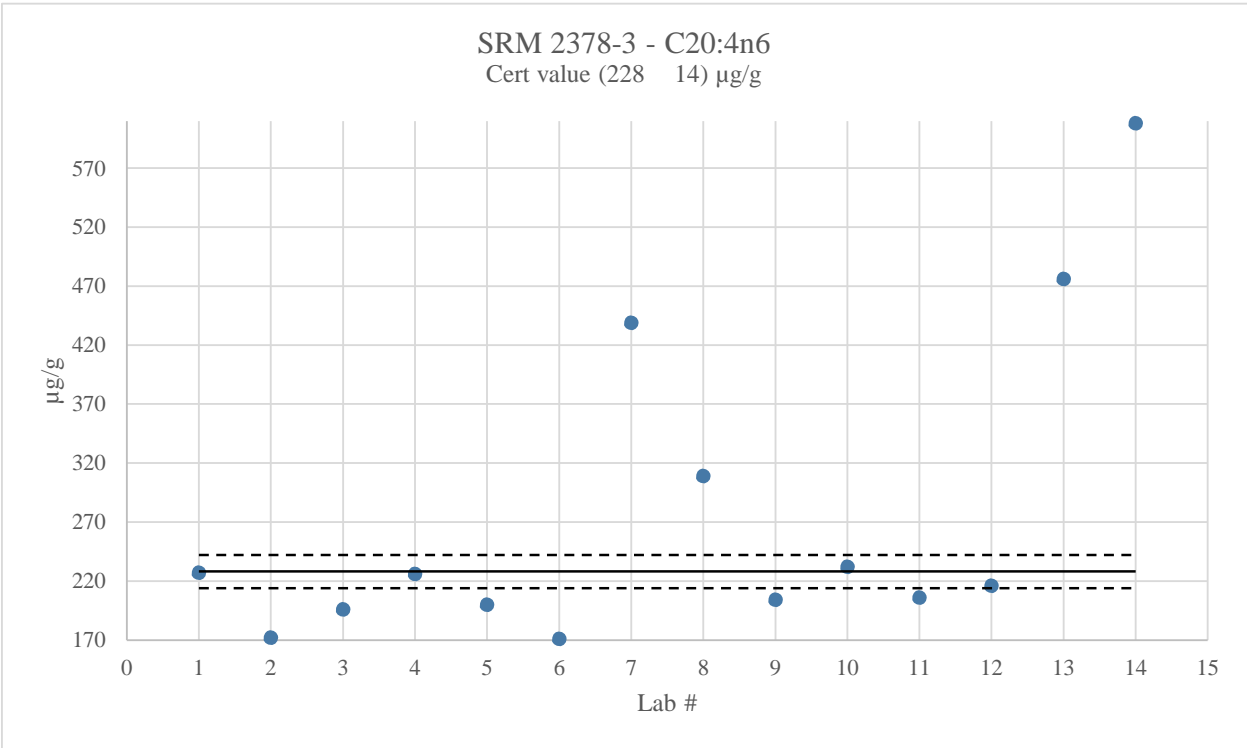
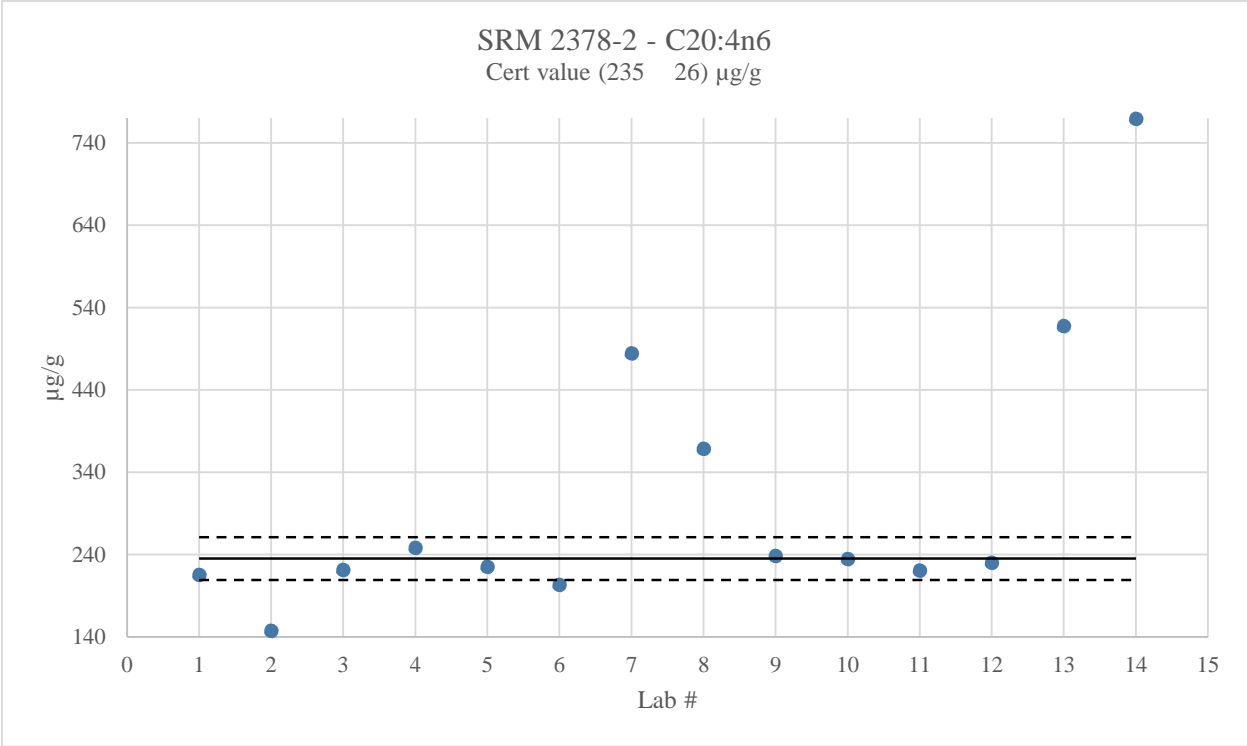


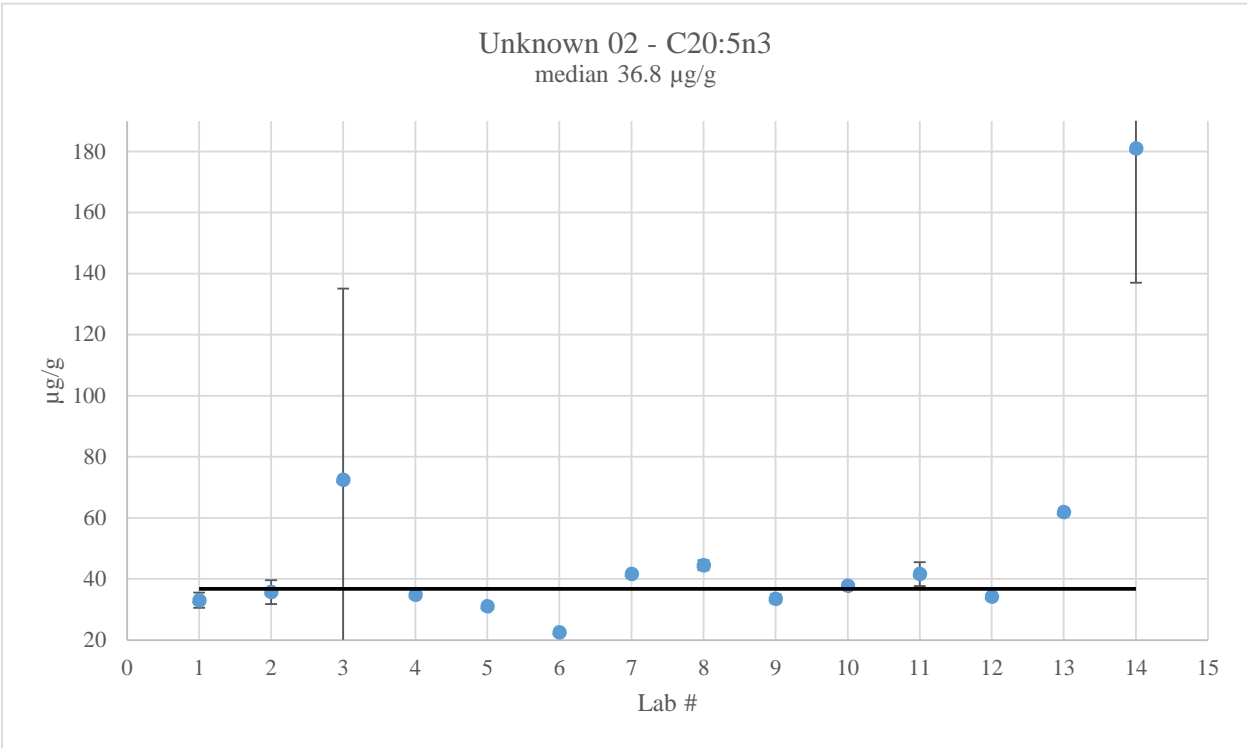
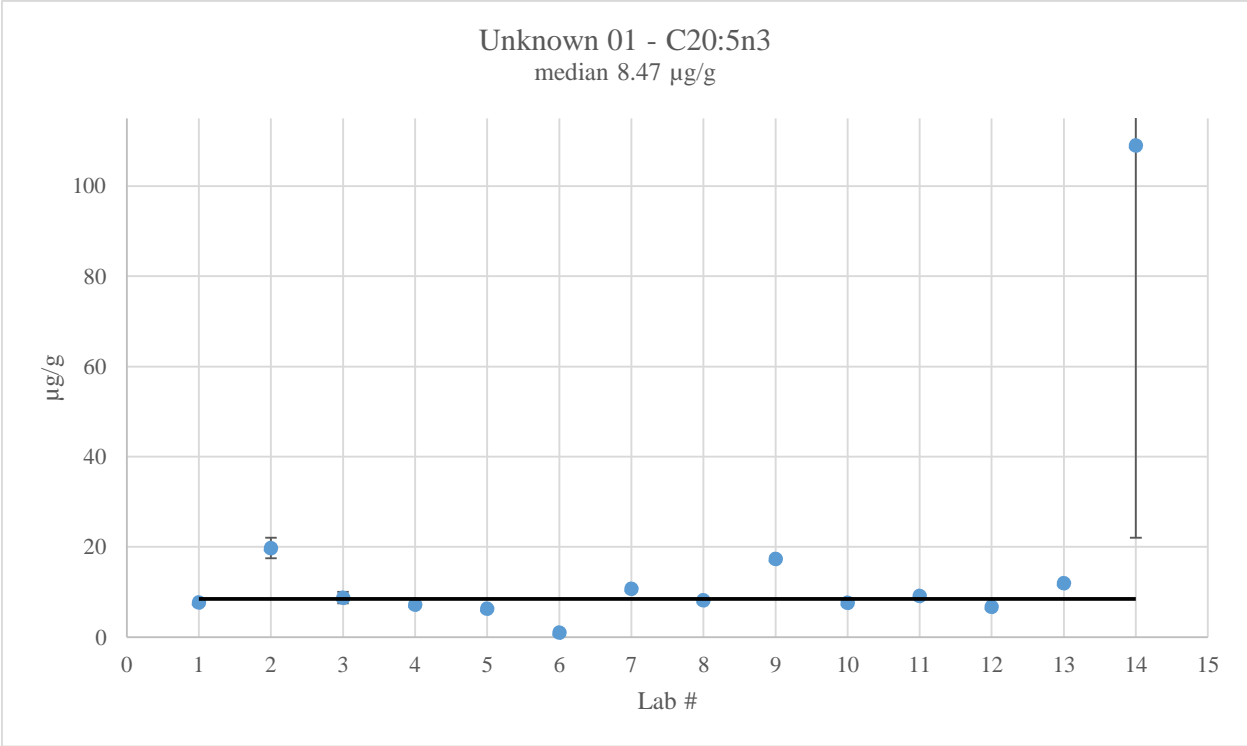


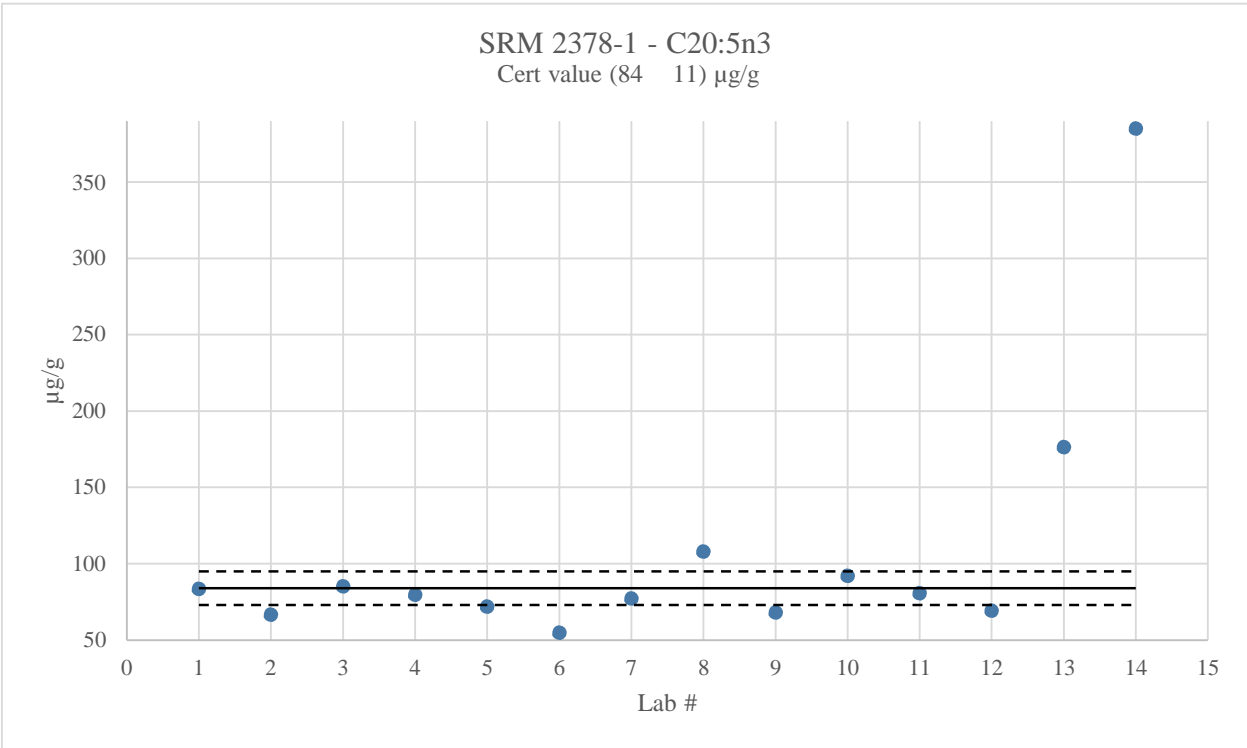
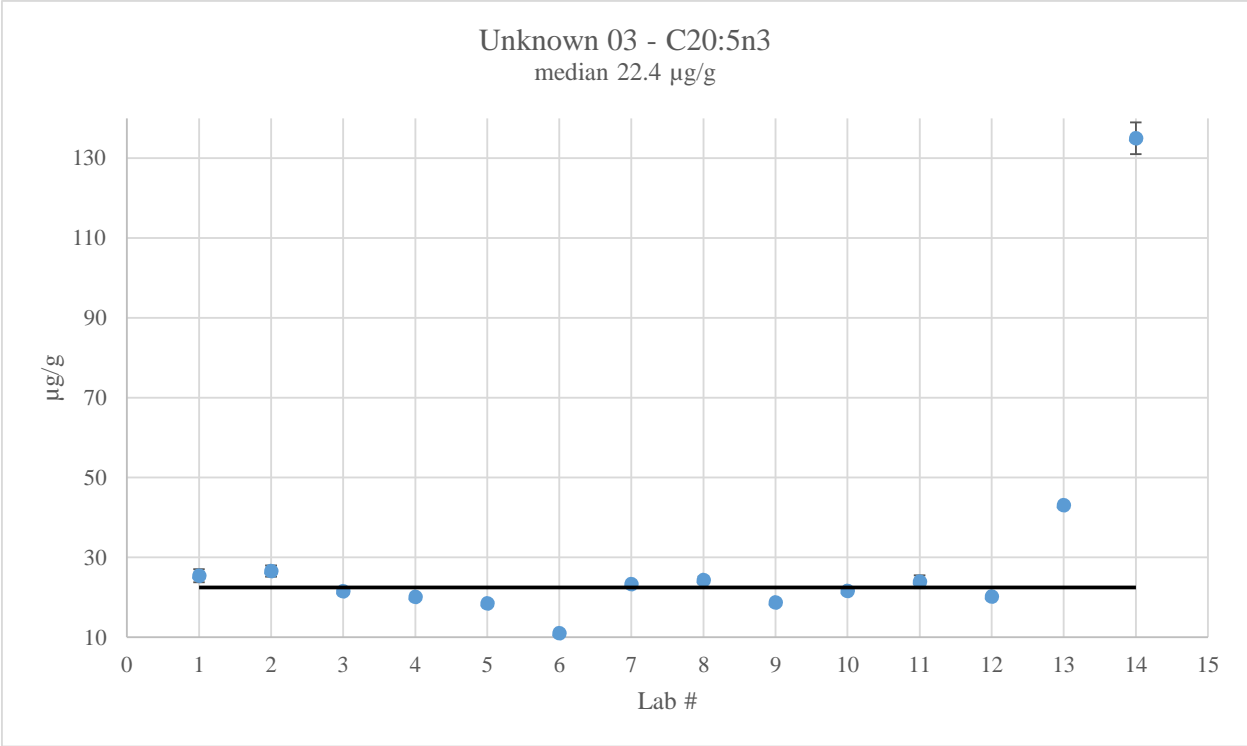


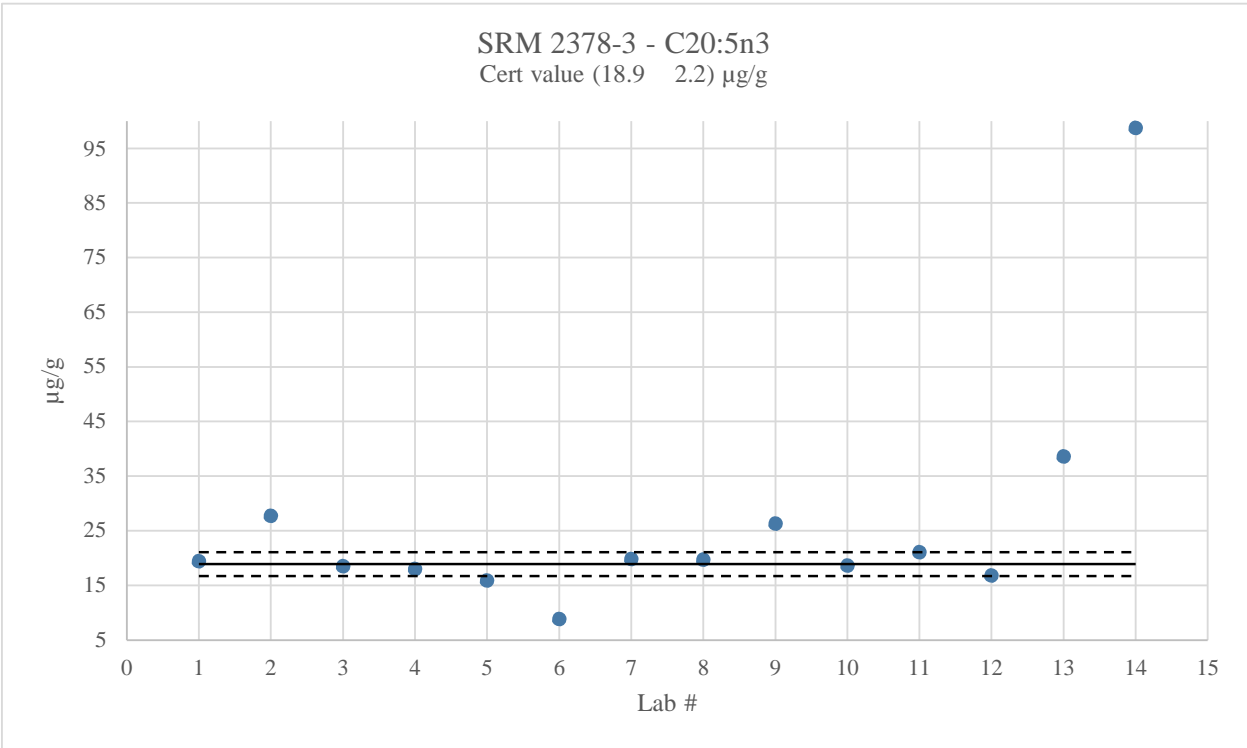
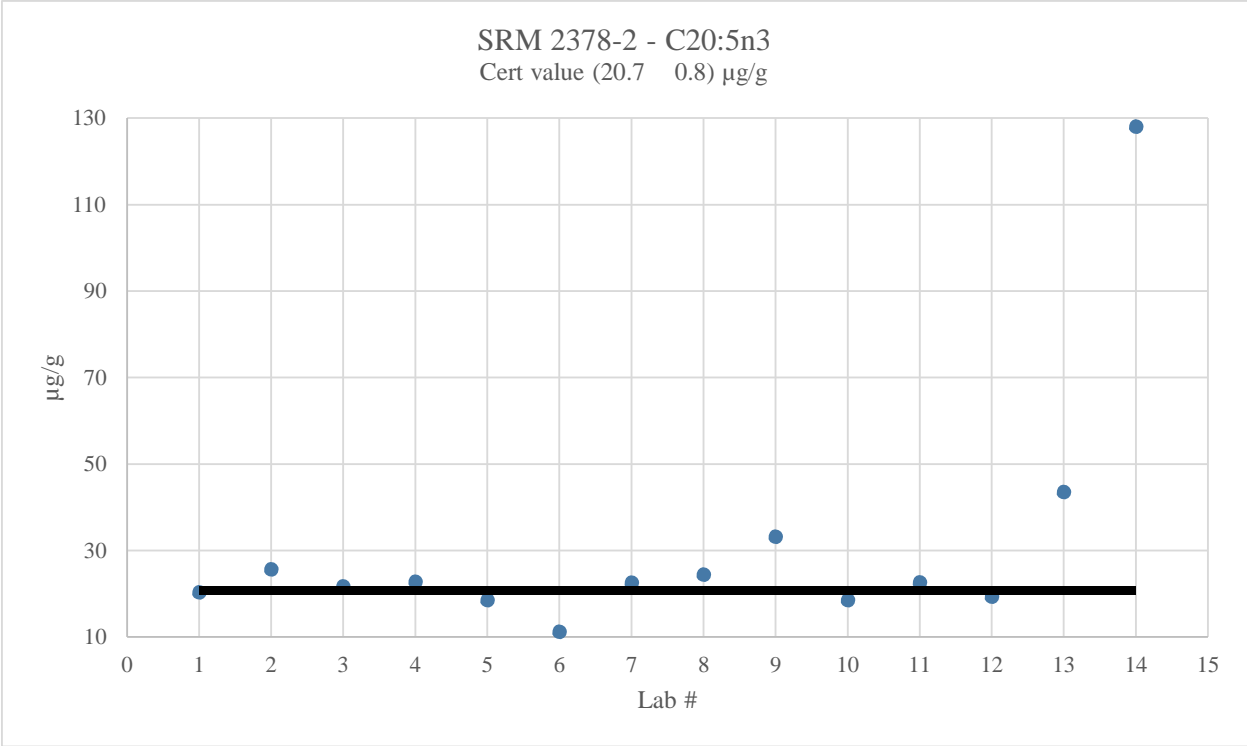




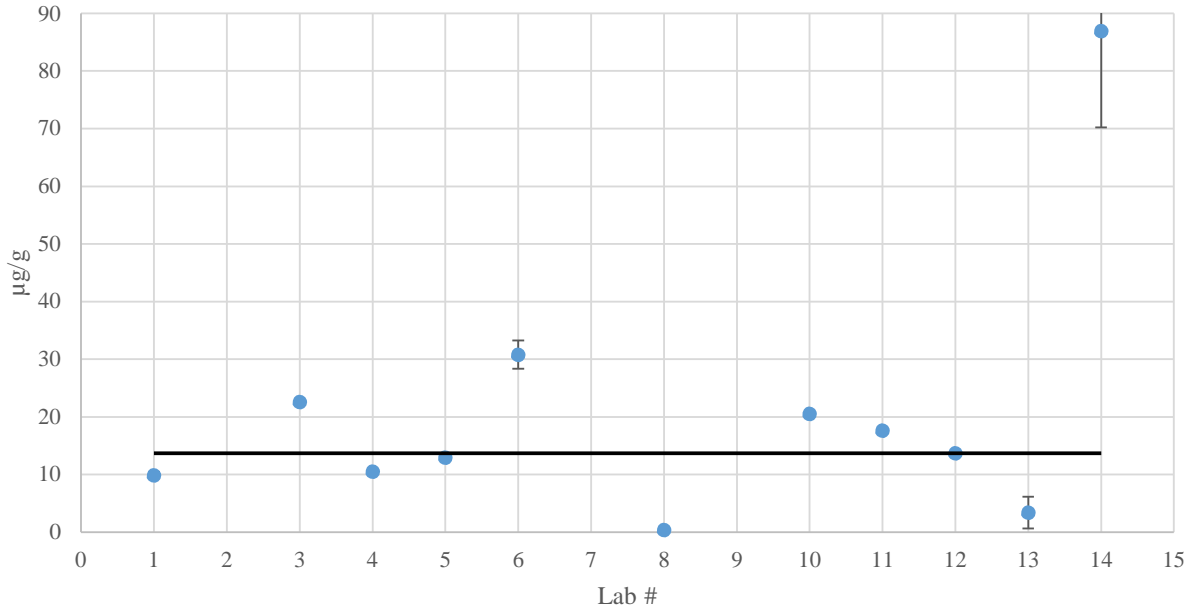




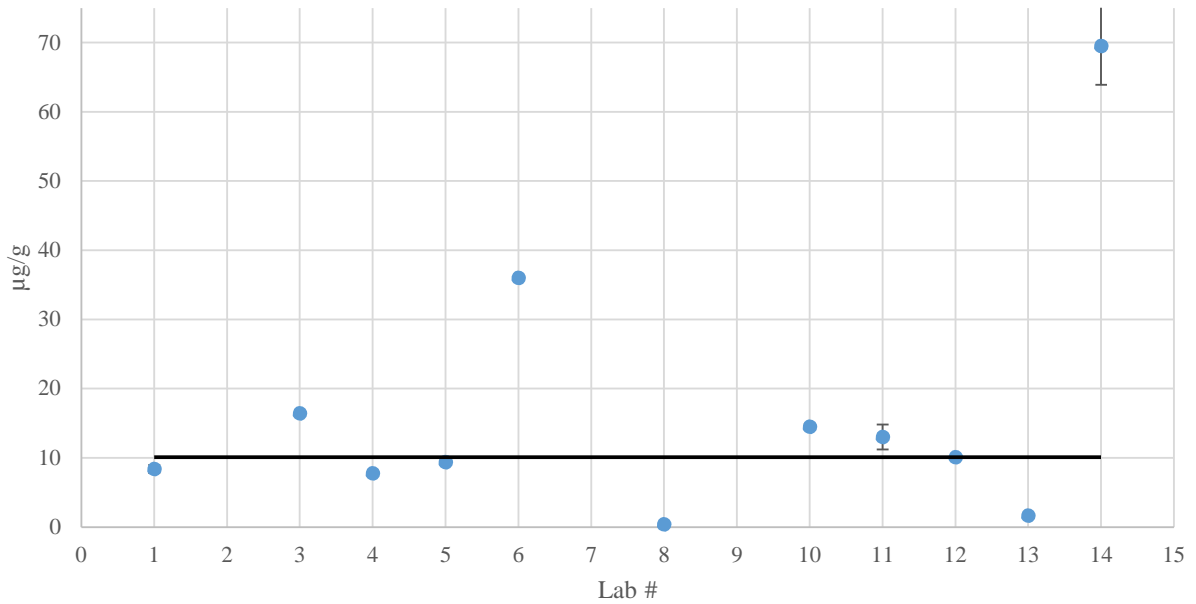




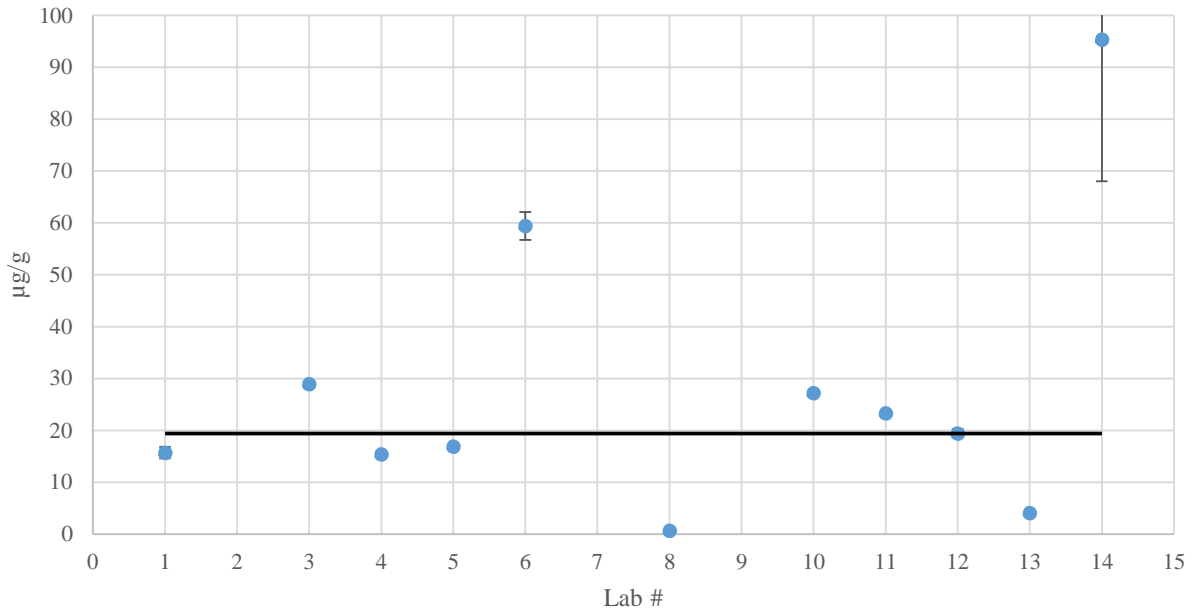
Unknown 01 - C22:0
median 13.7 $\mu\text{g/g}$



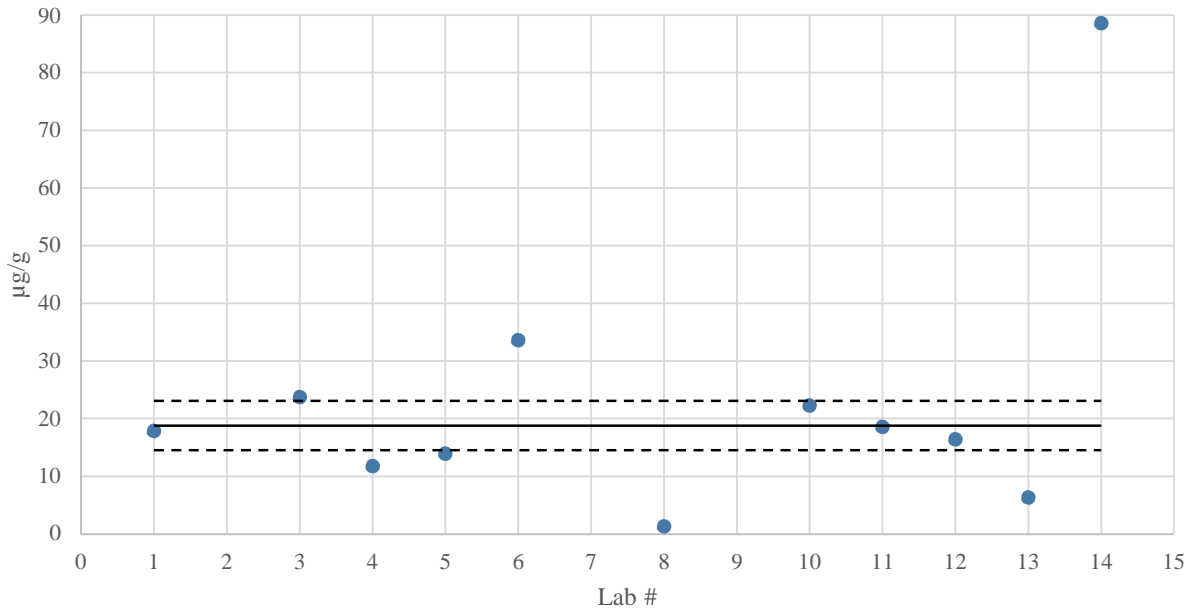
Unknown 02 - C22:0
median 10.1 $\mu\text{g/g}$

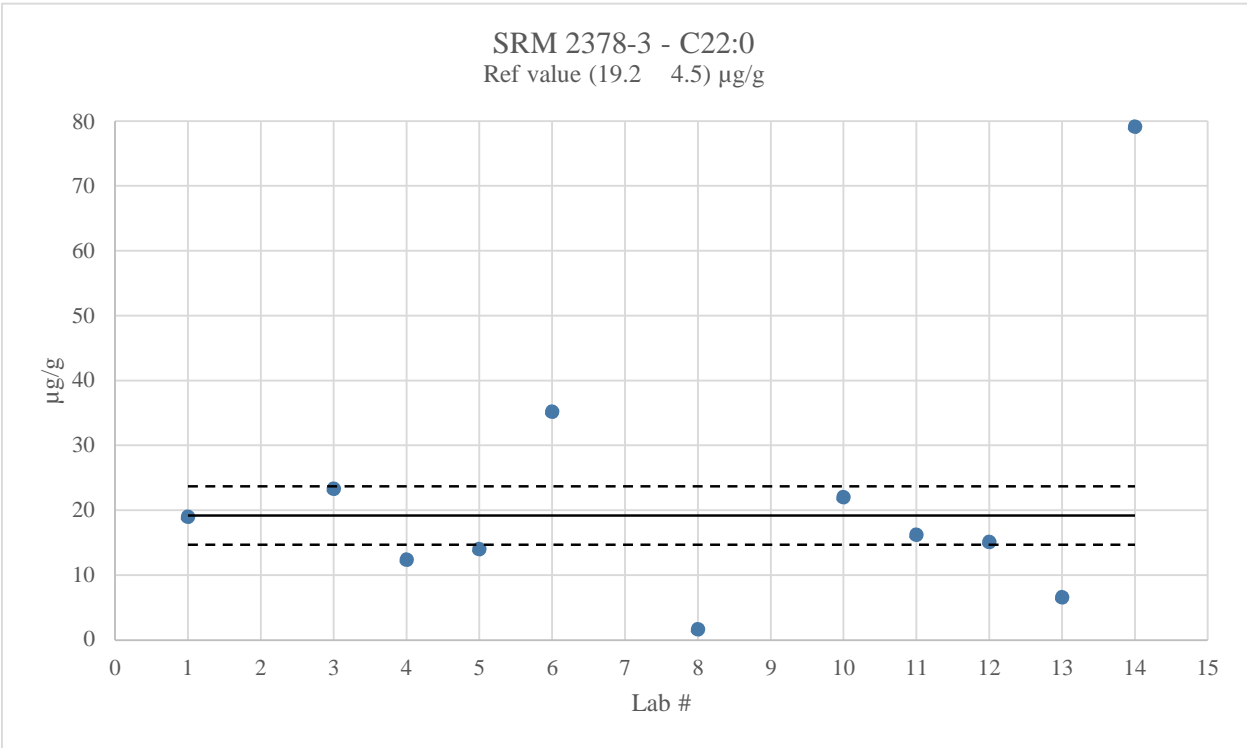
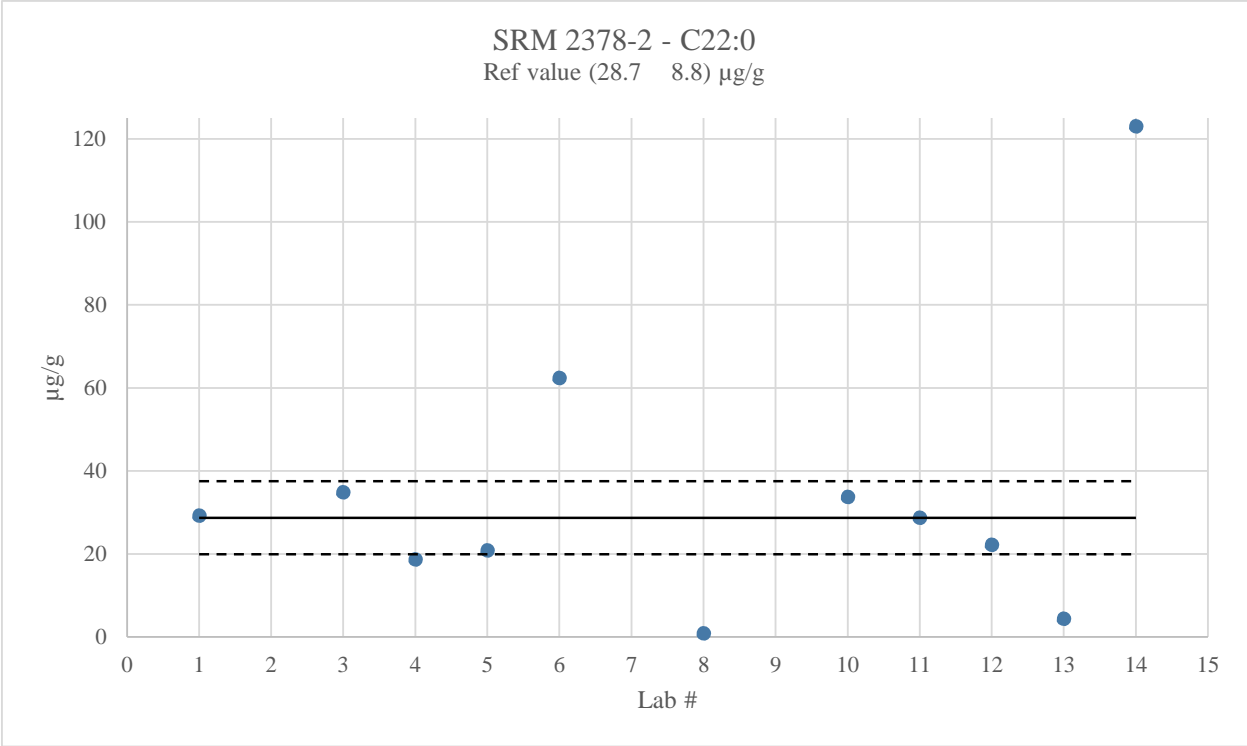


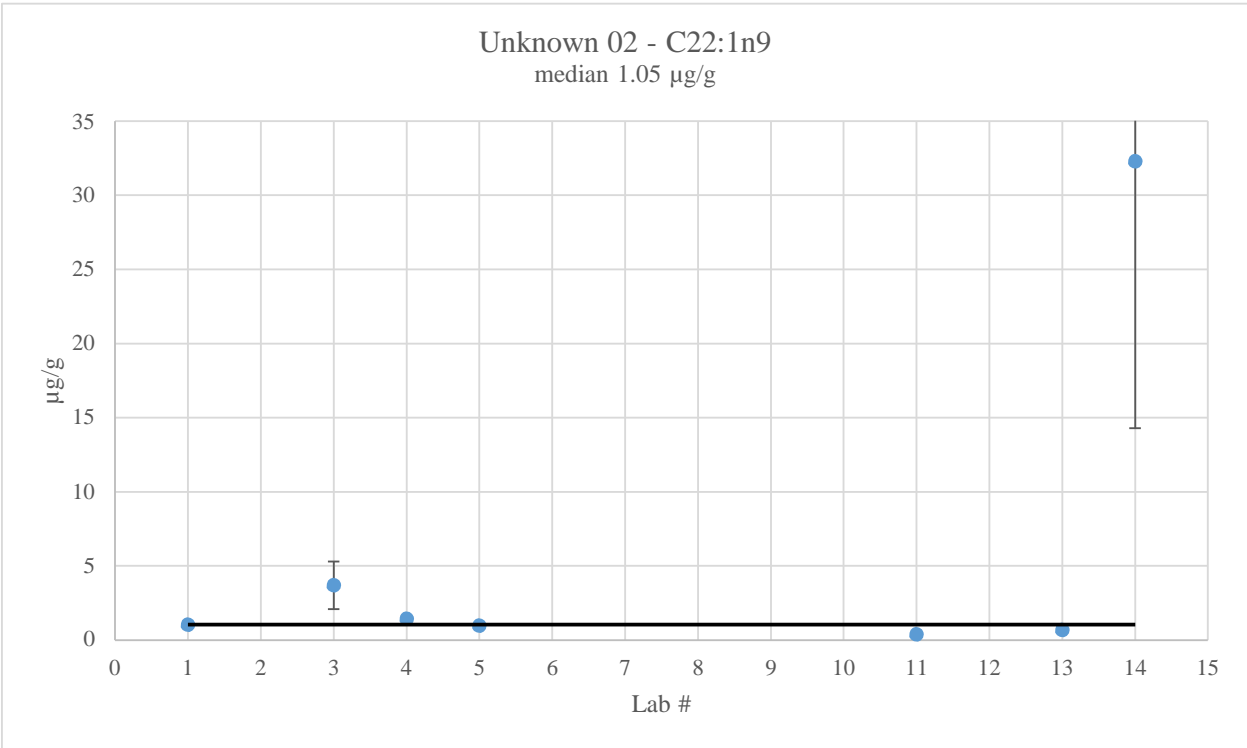
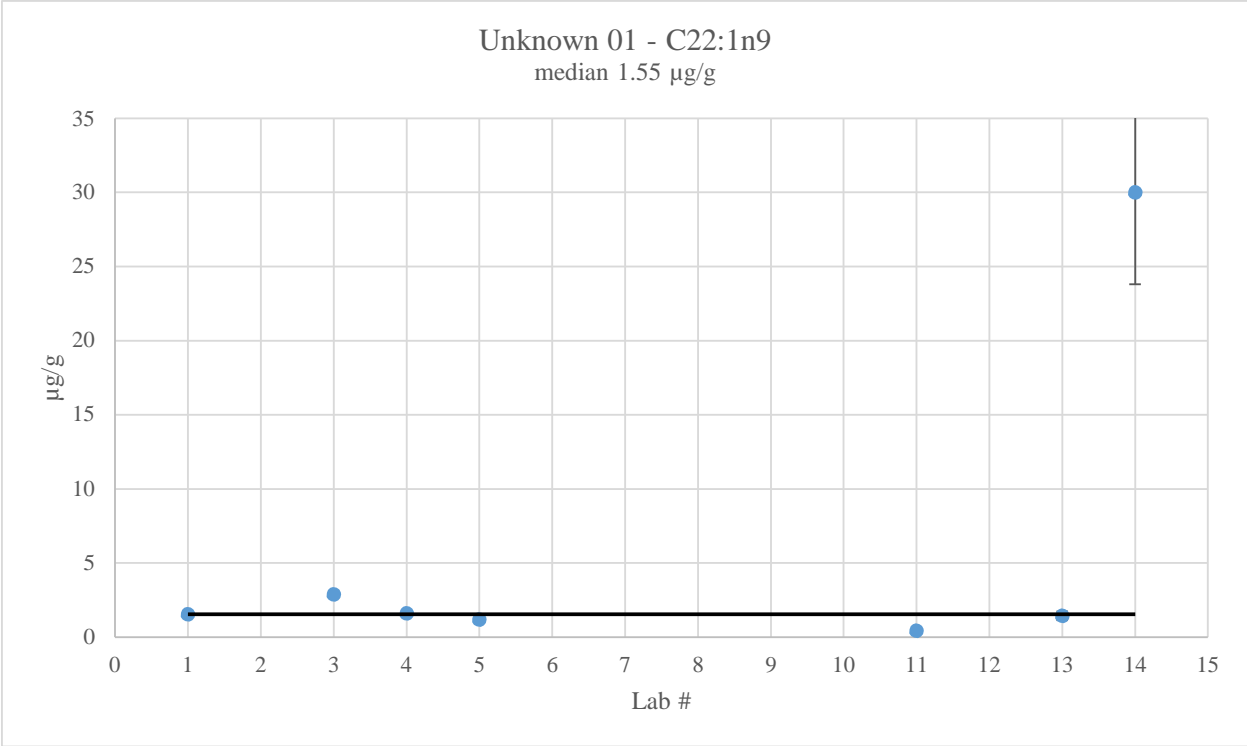
Unknown 03 - C22:0
median 19.4 $\mu\text{g/g}$

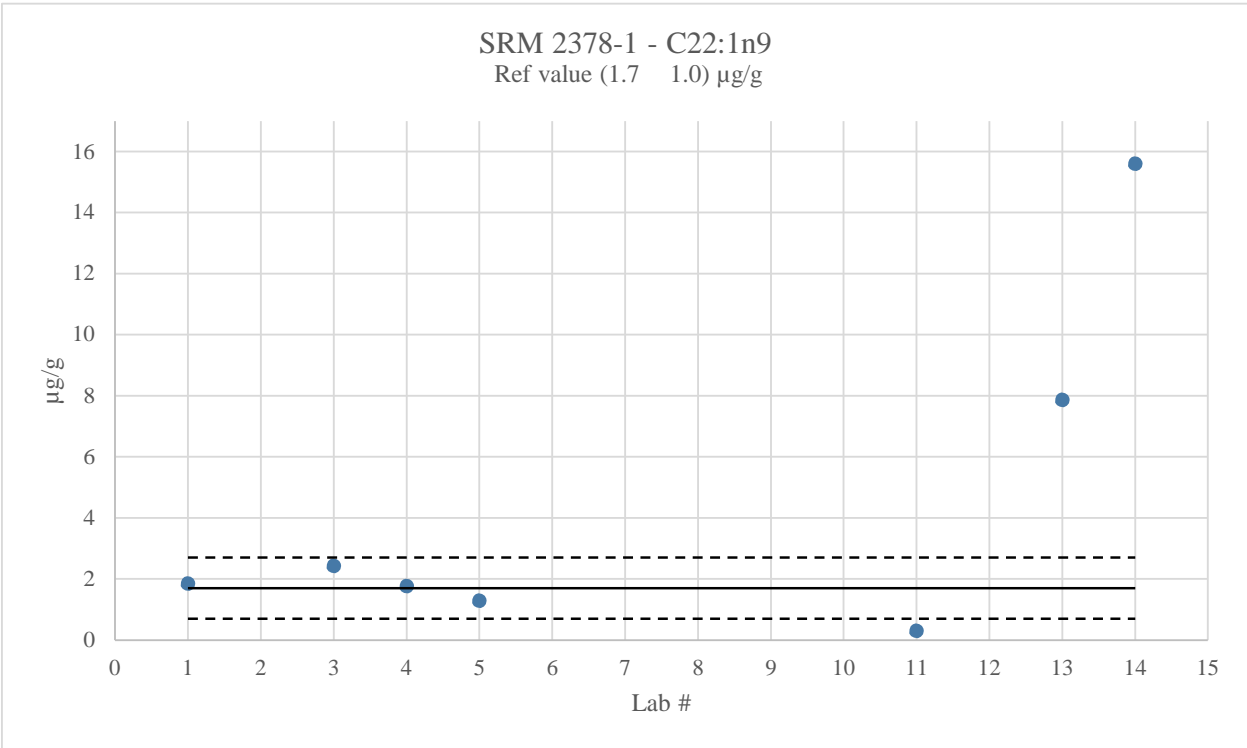
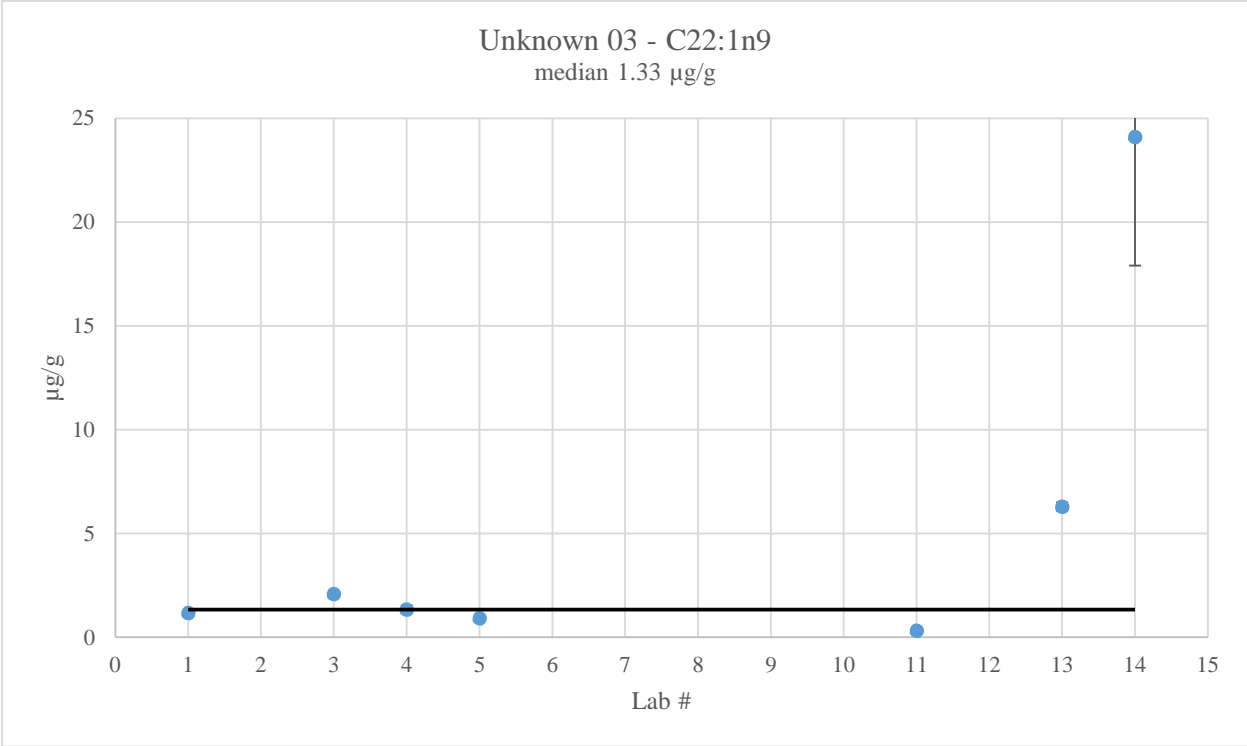


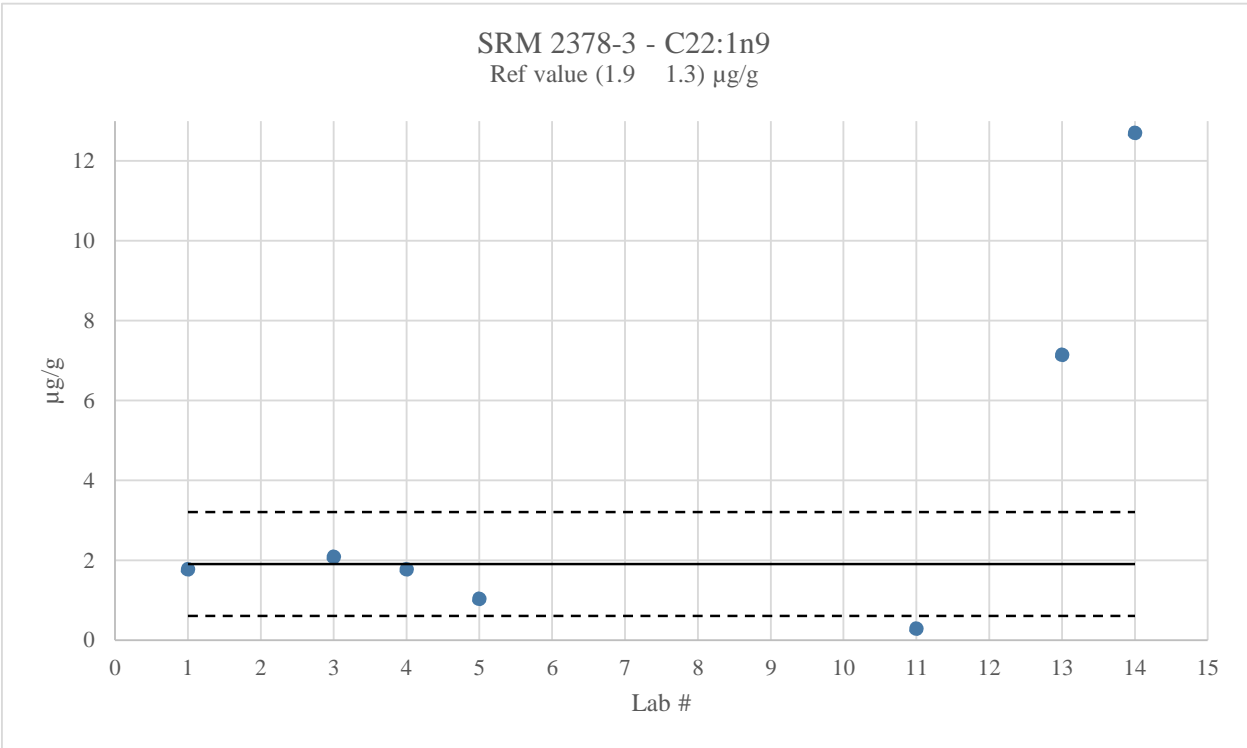
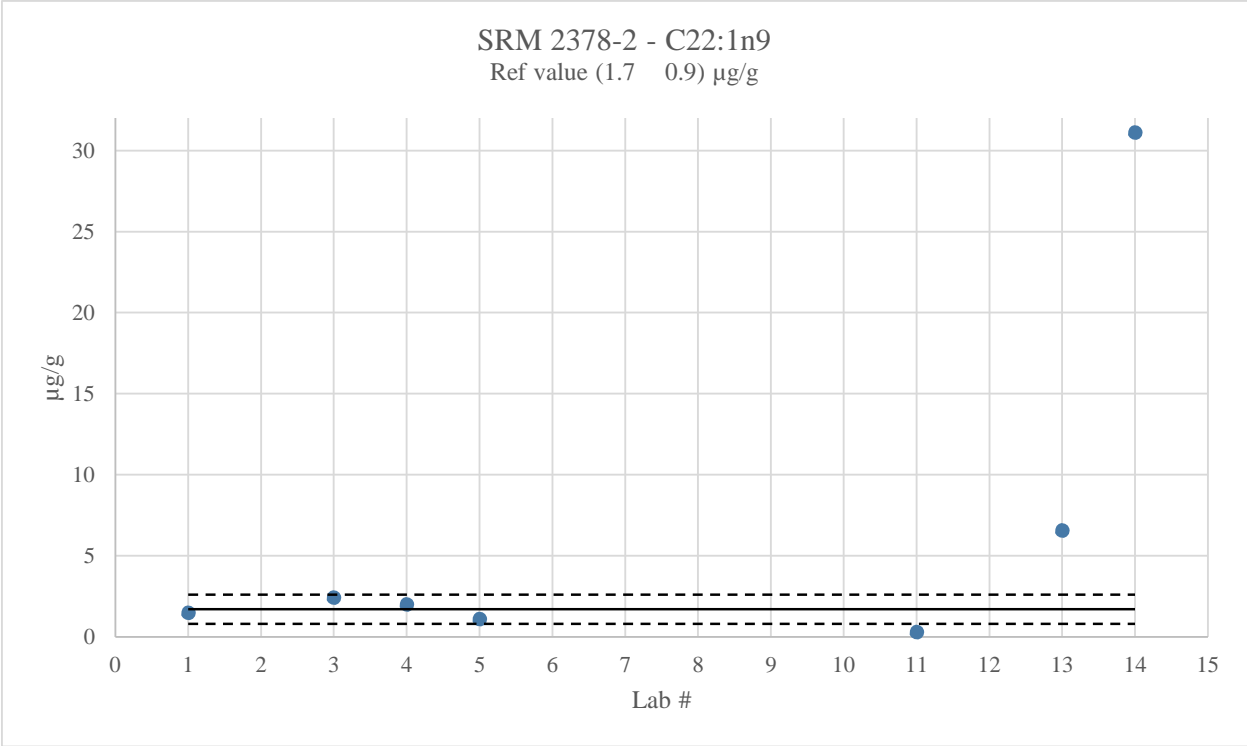
SRM 2378-1 - C22:0
Ref value (18.8 4.3) $\mu\text{g/g}$

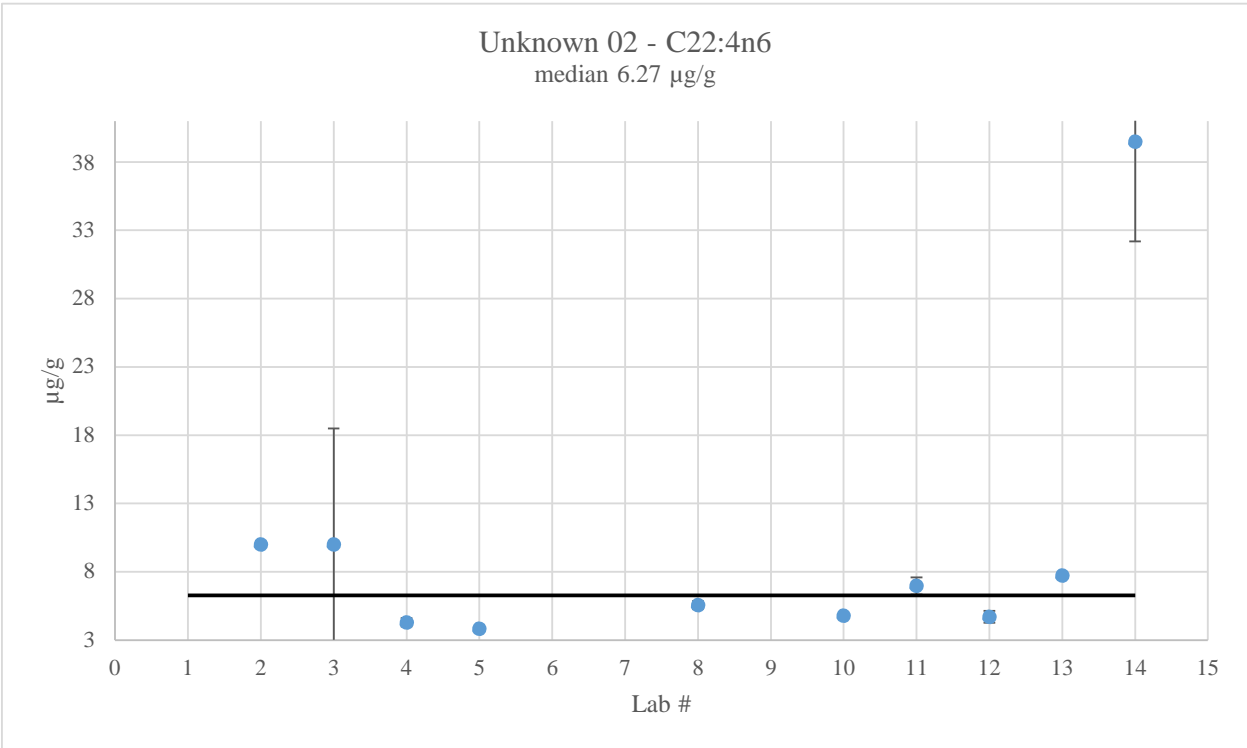
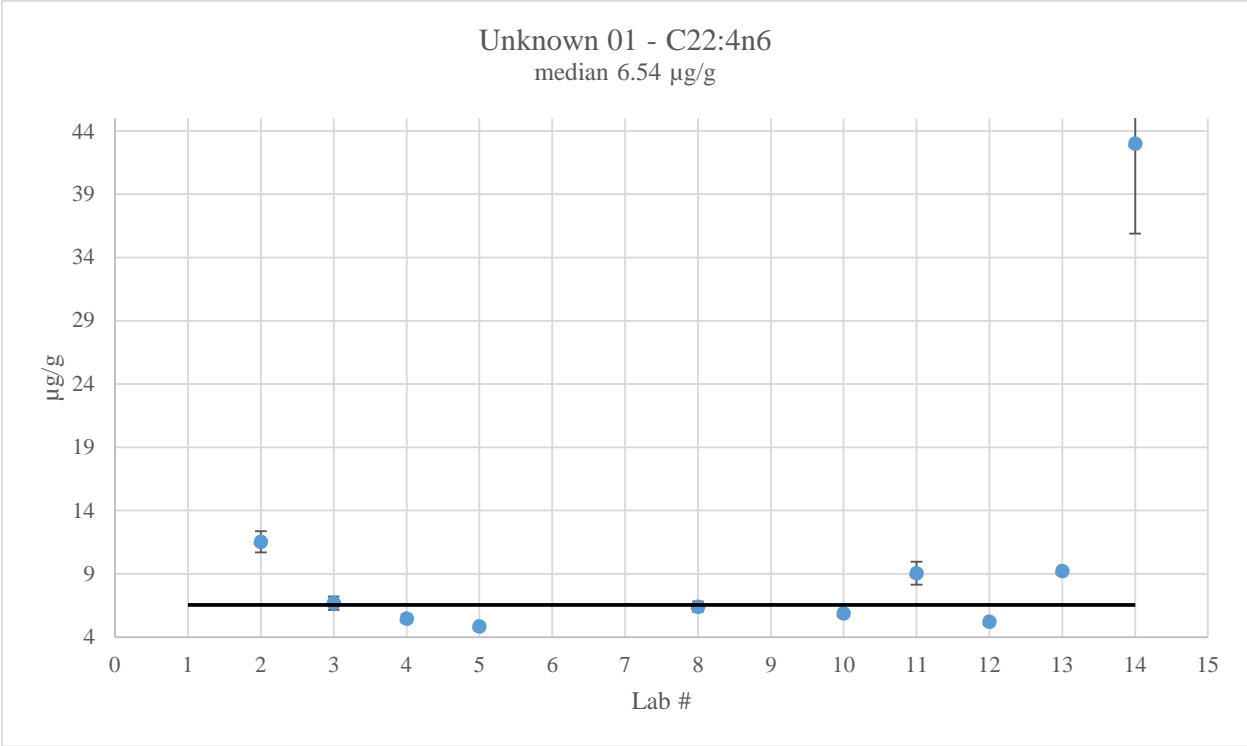


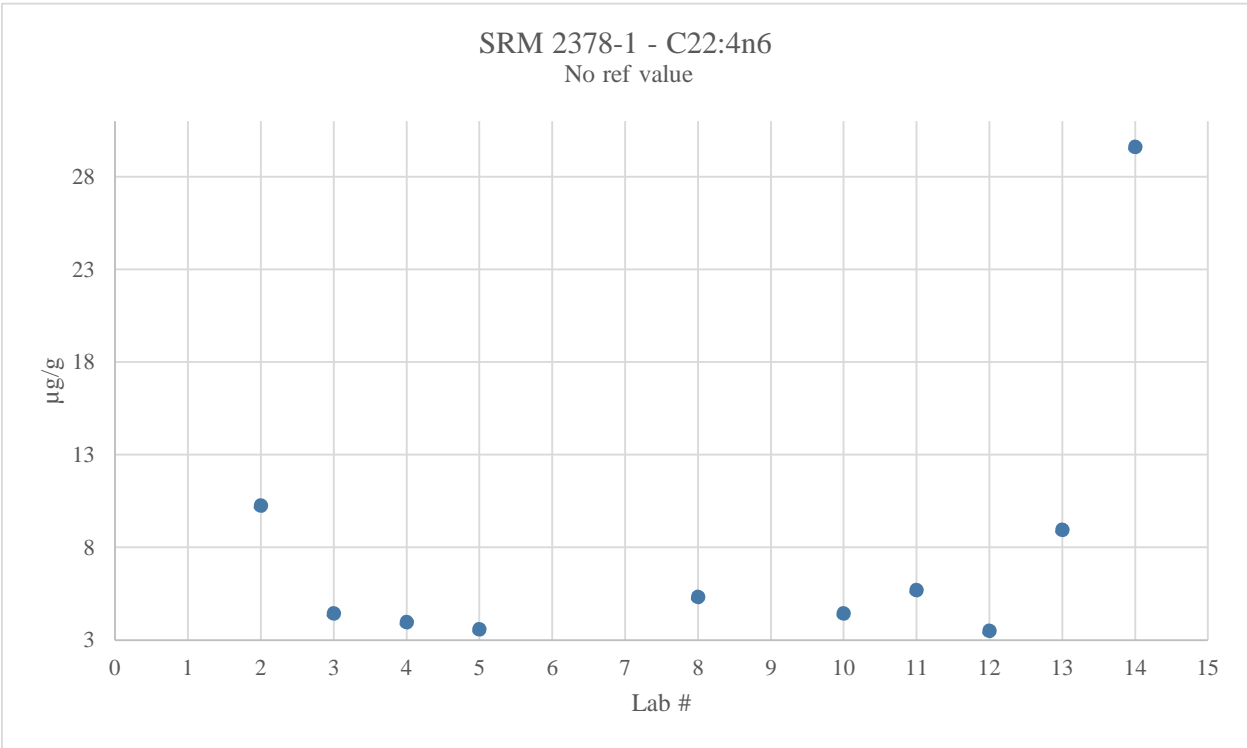
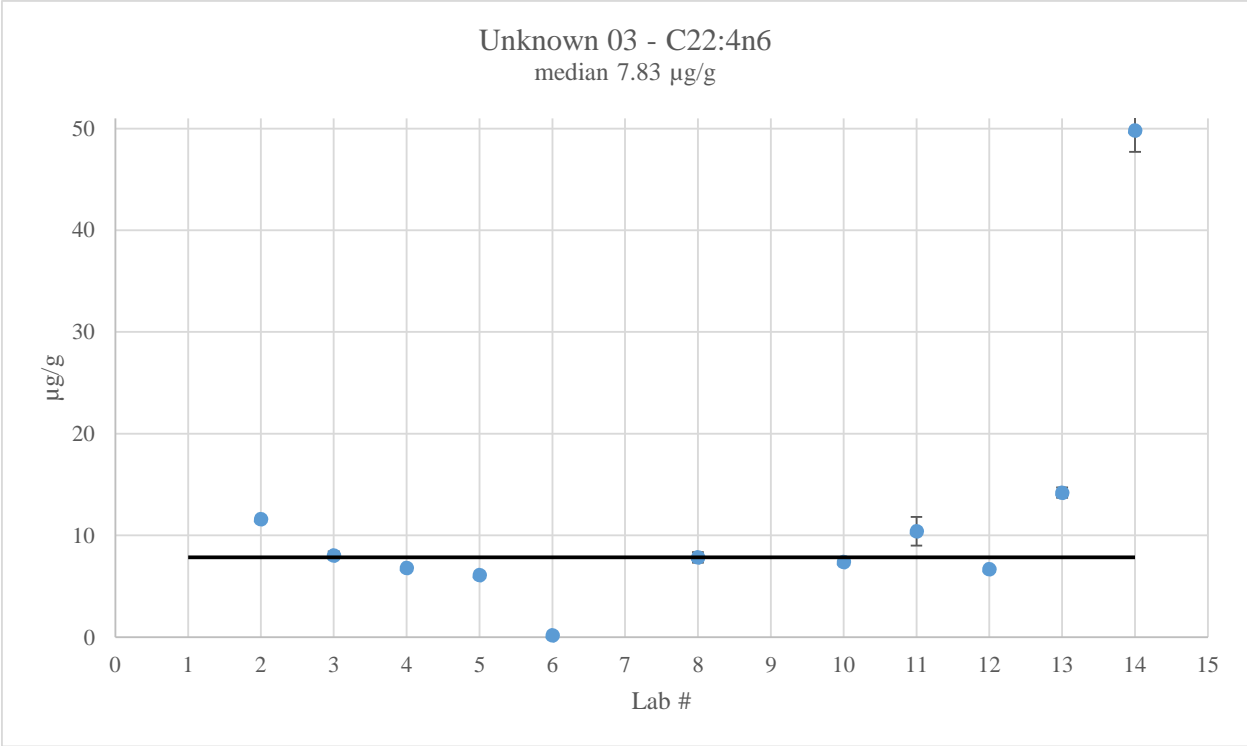




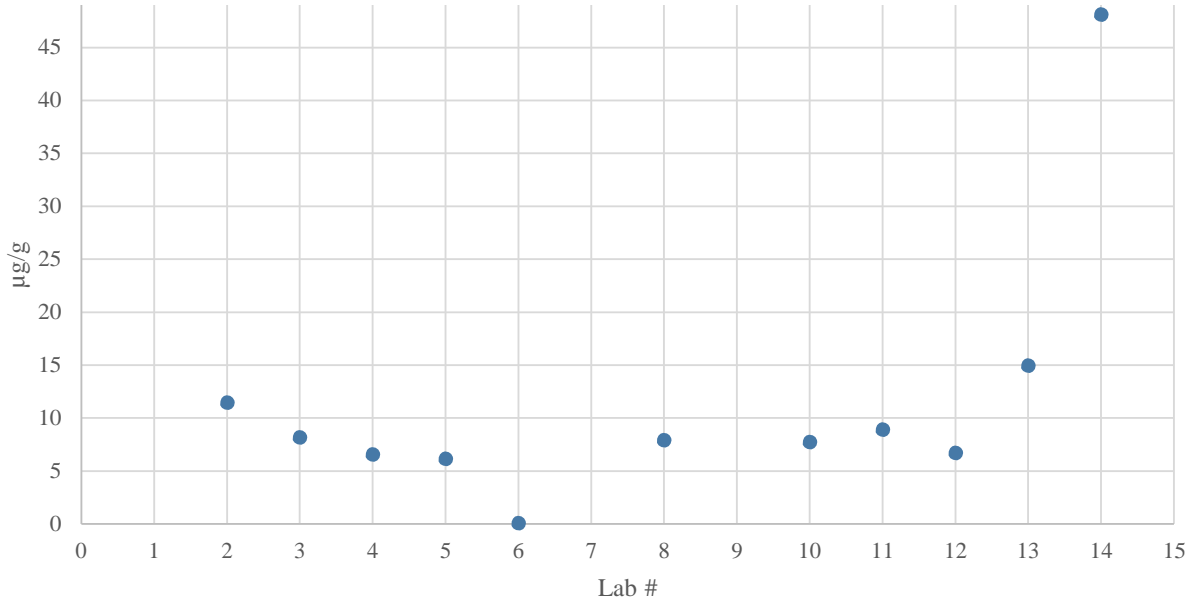




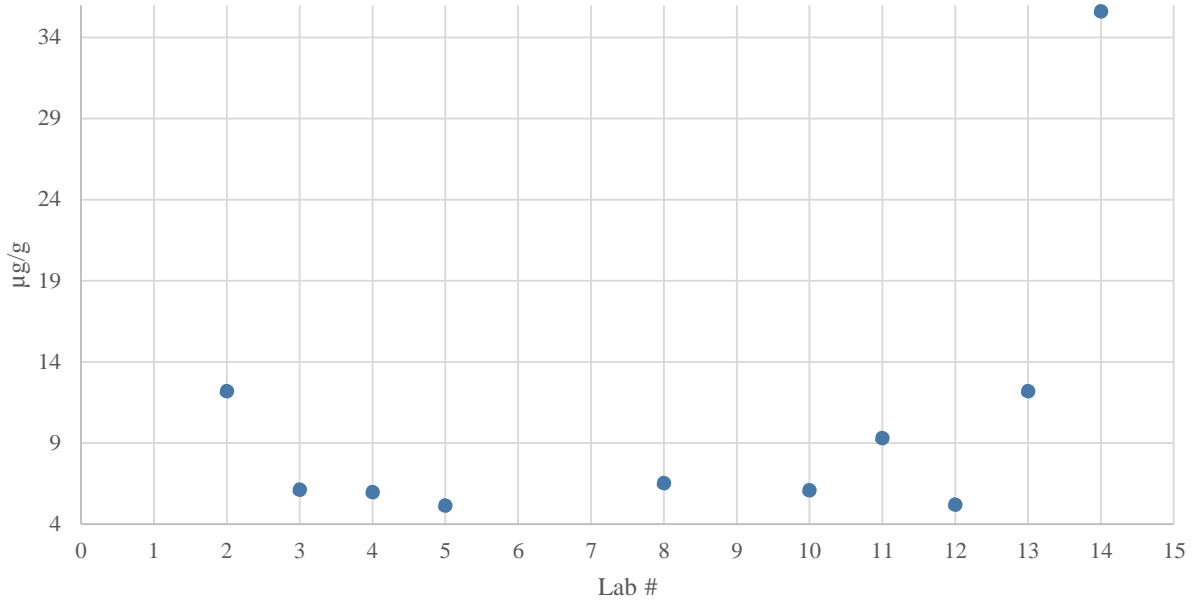


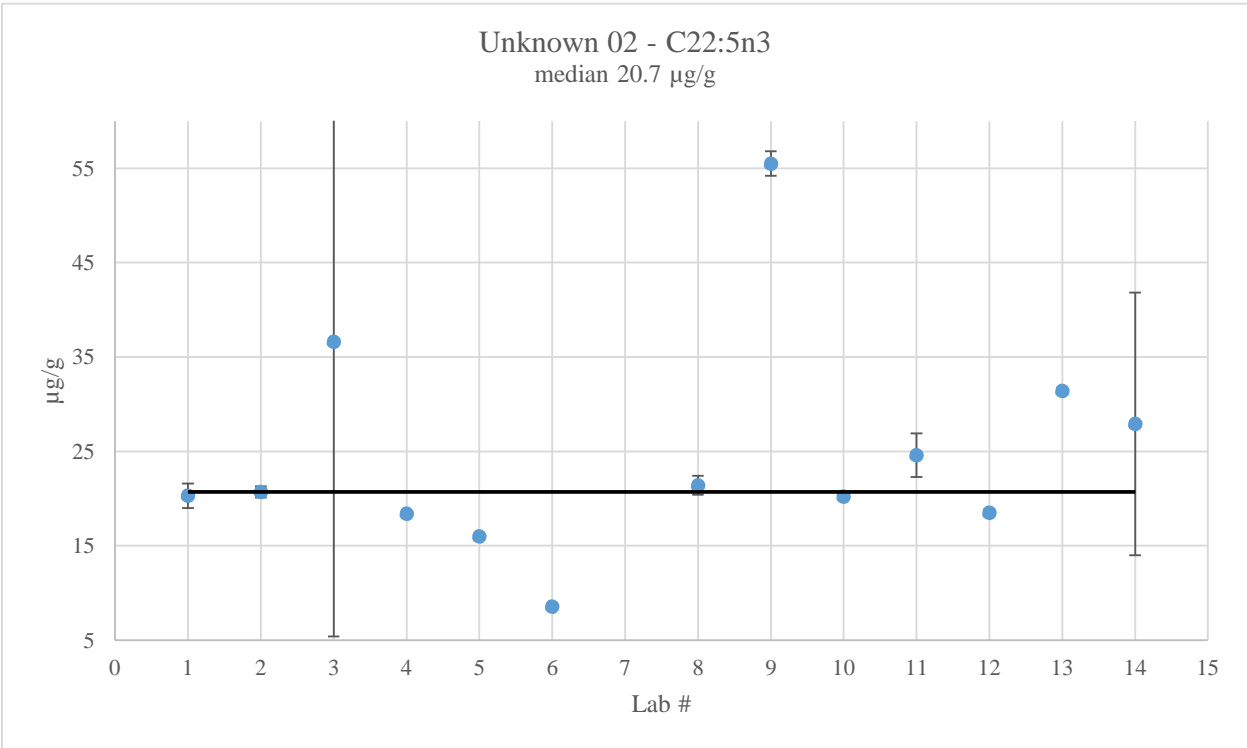
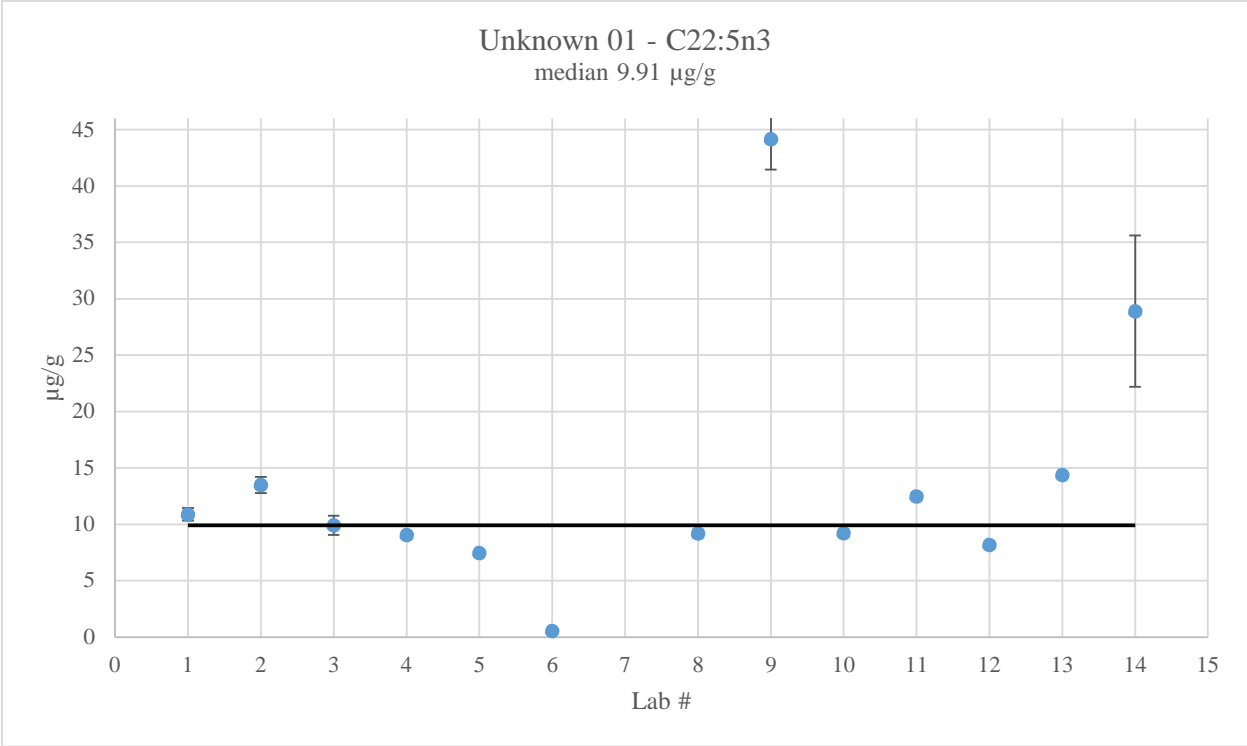


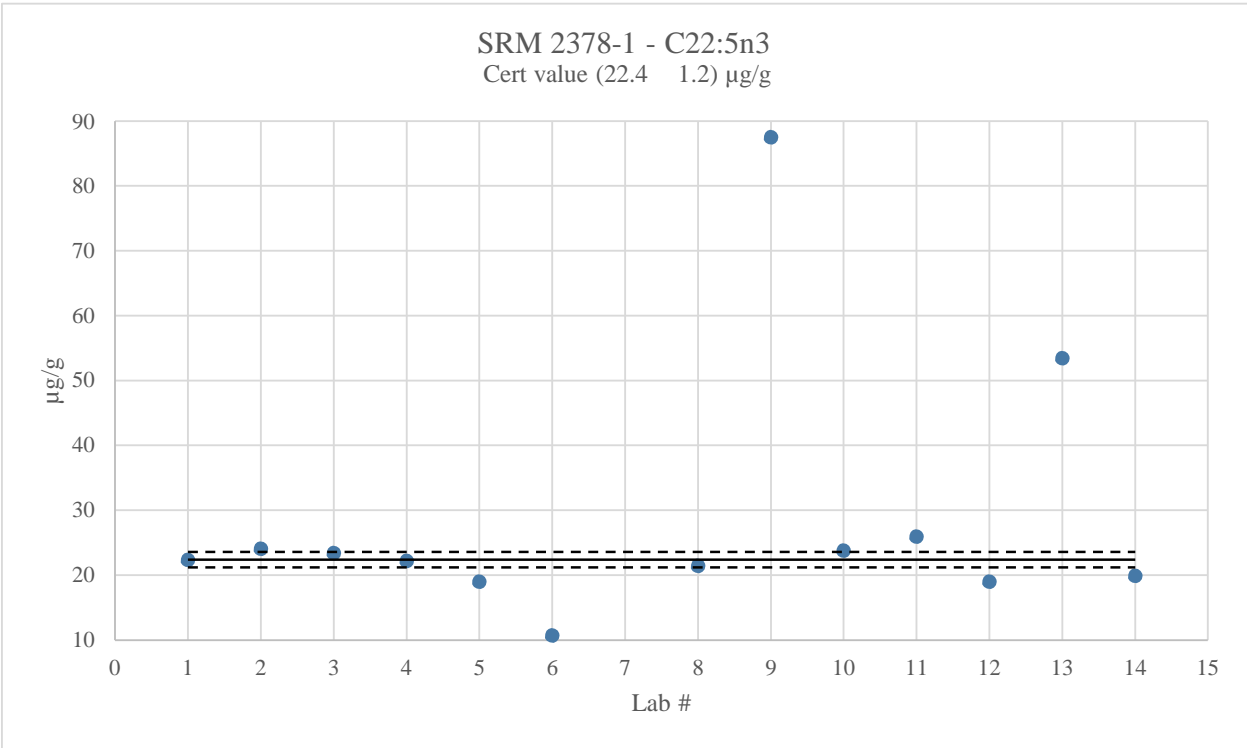
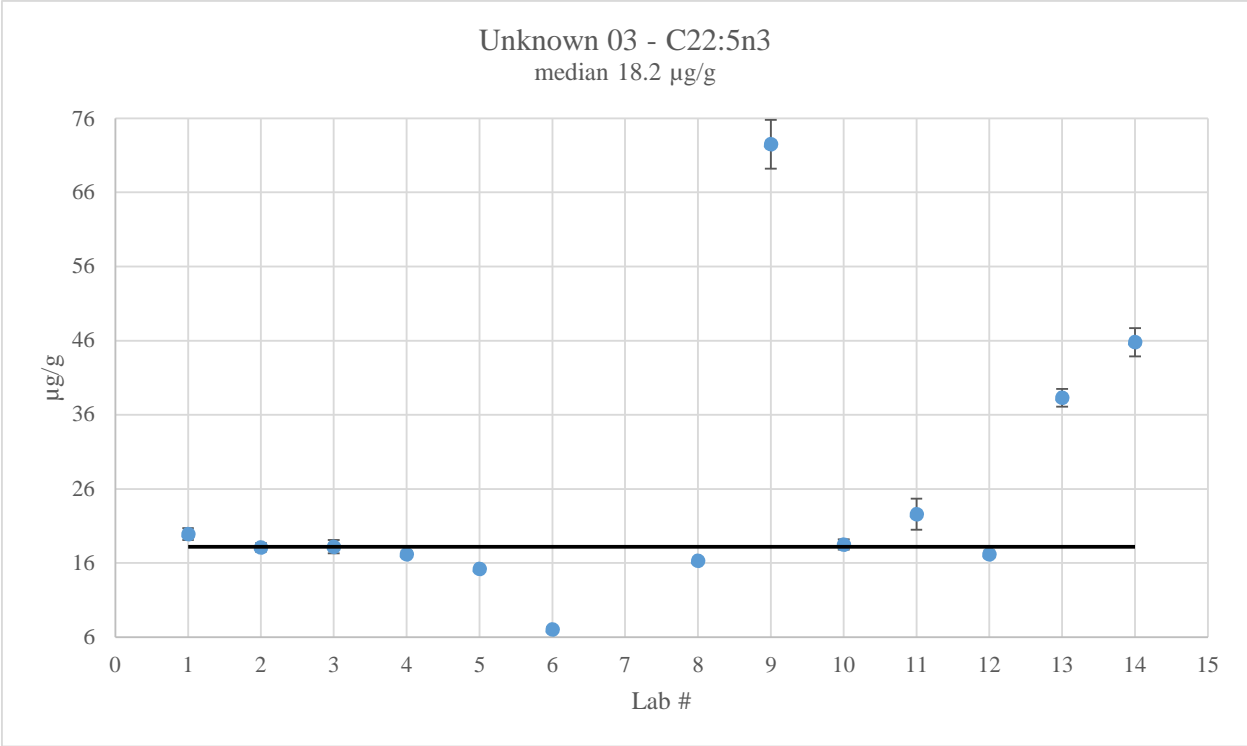
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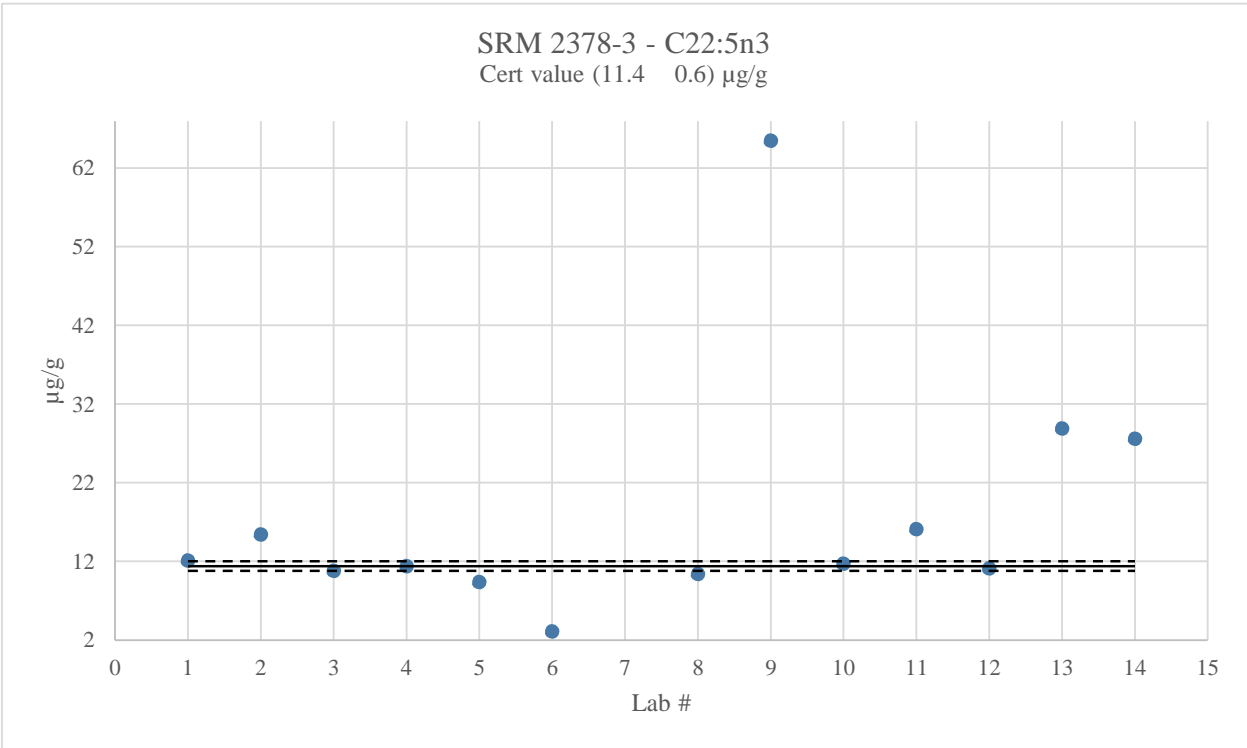
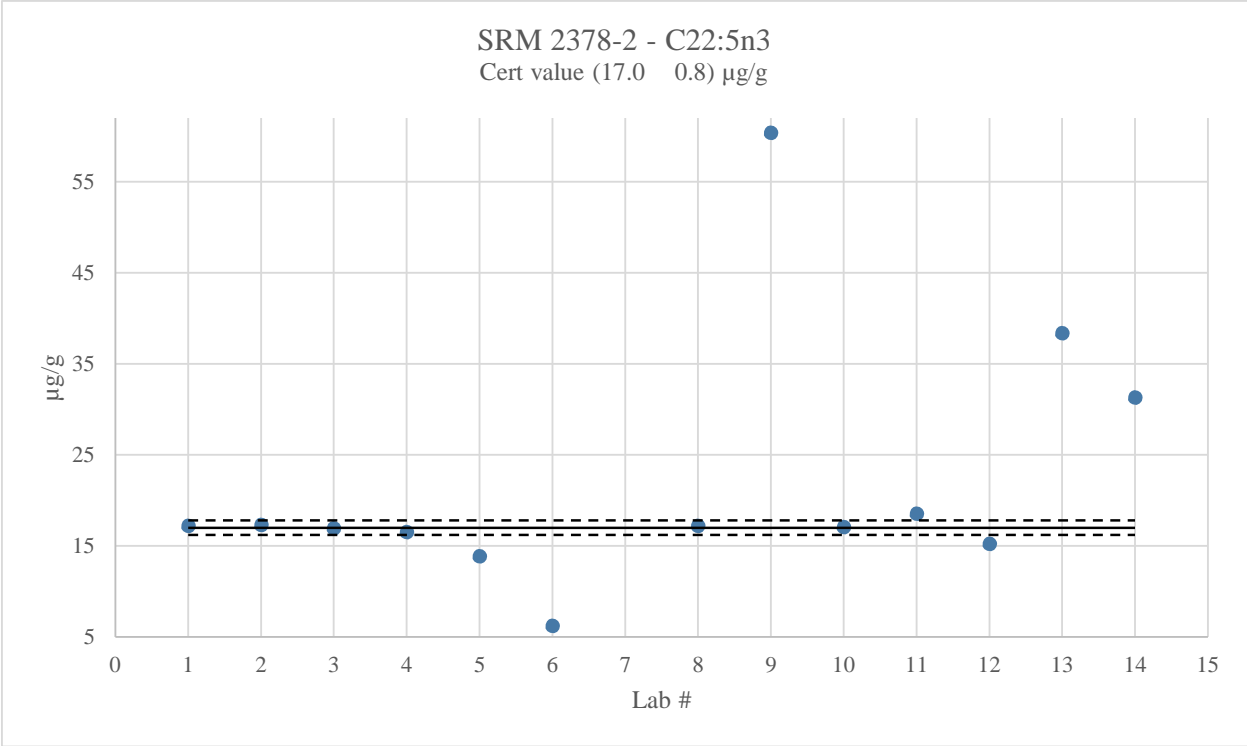


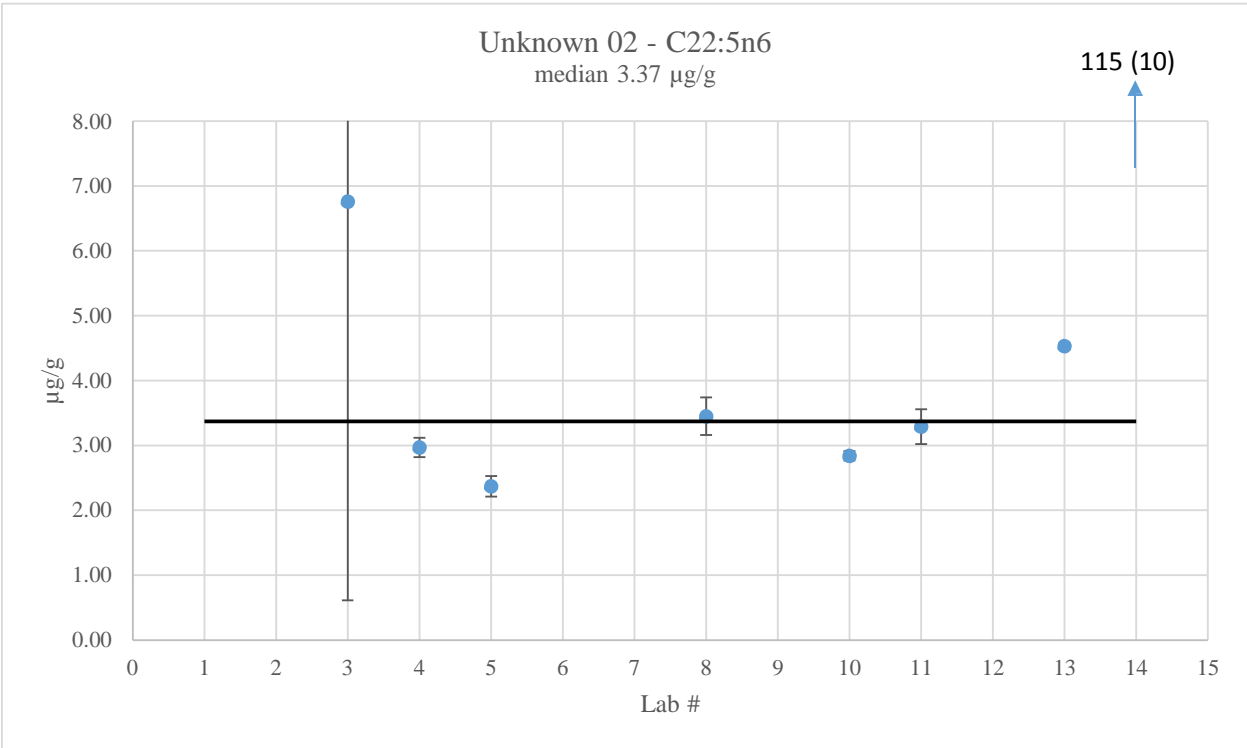
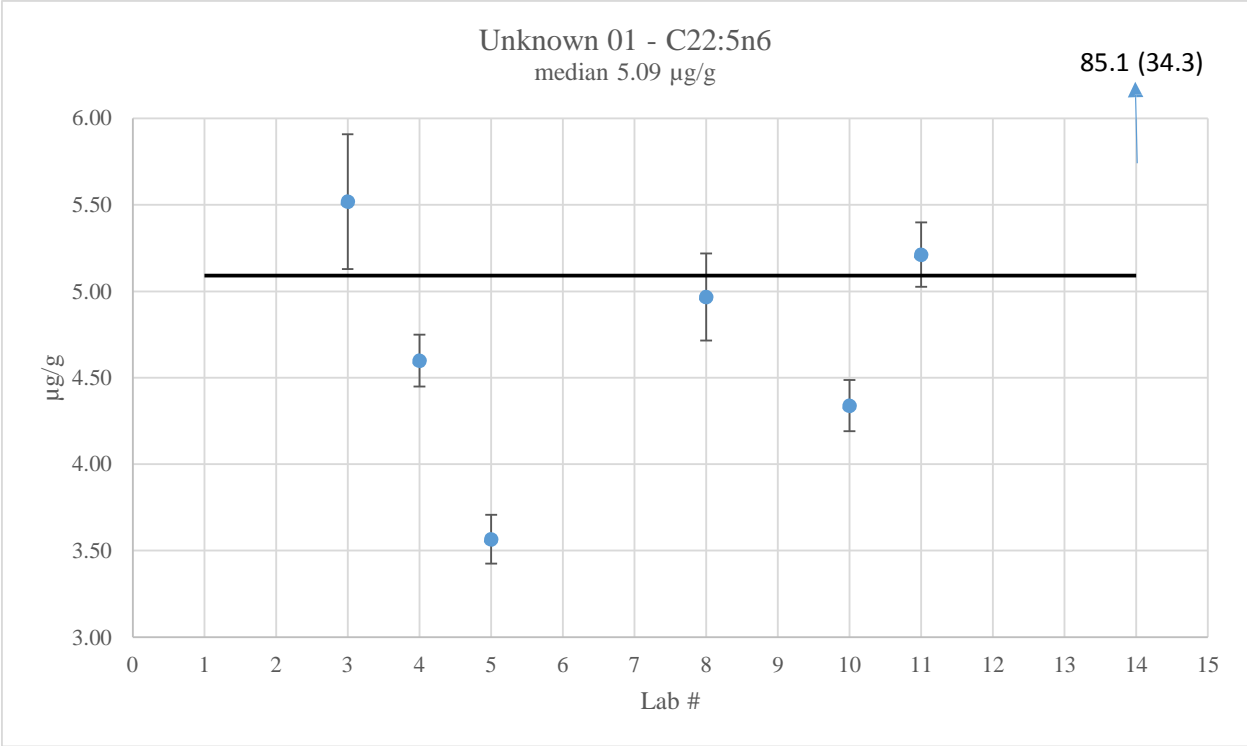
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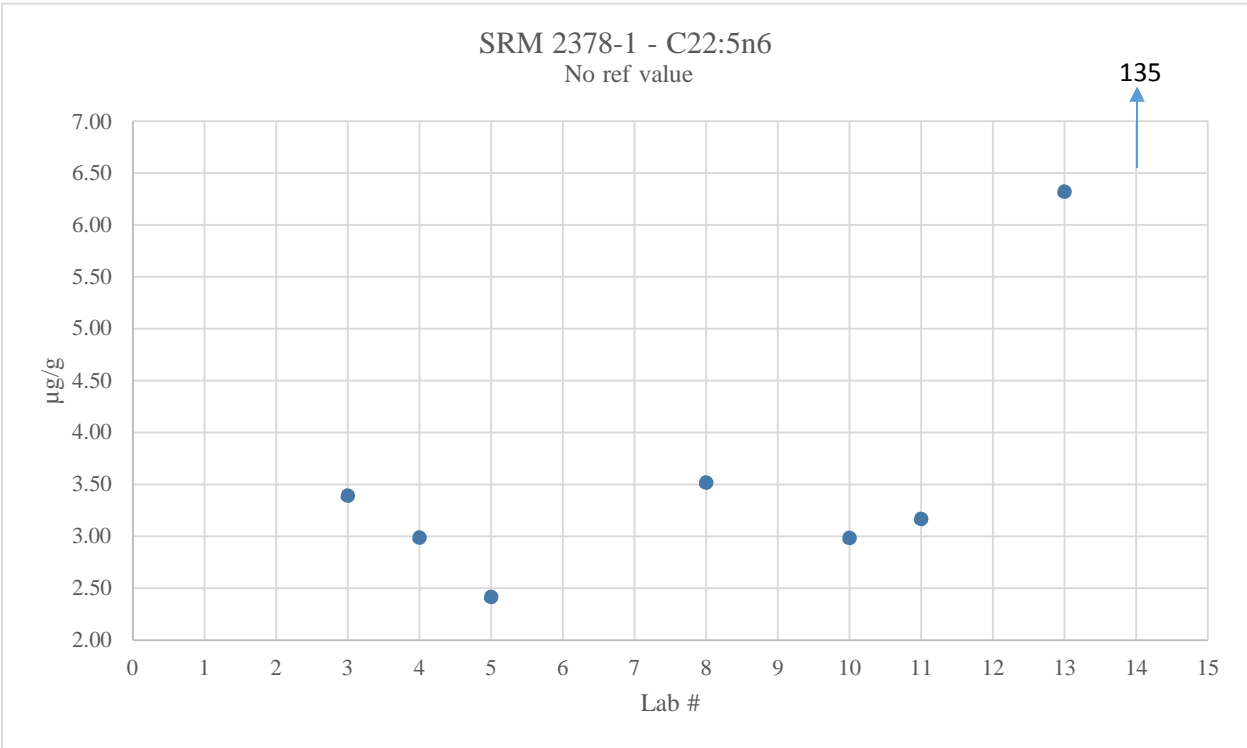
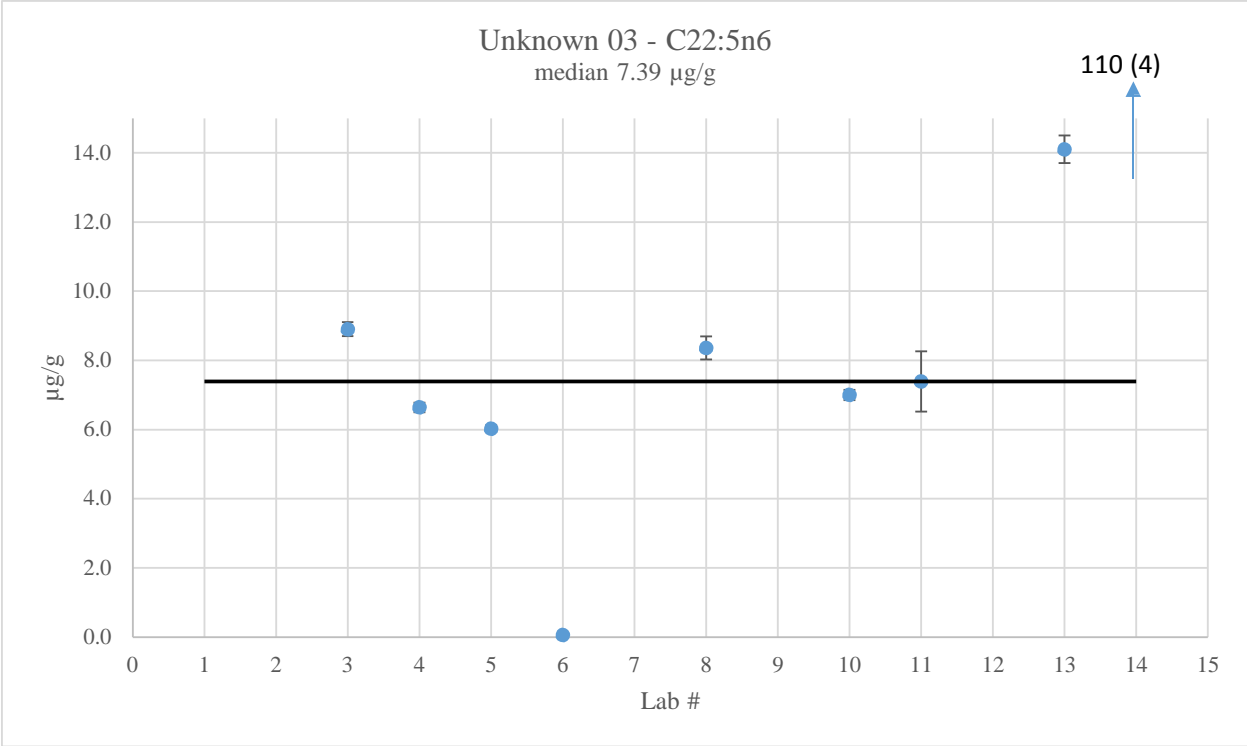


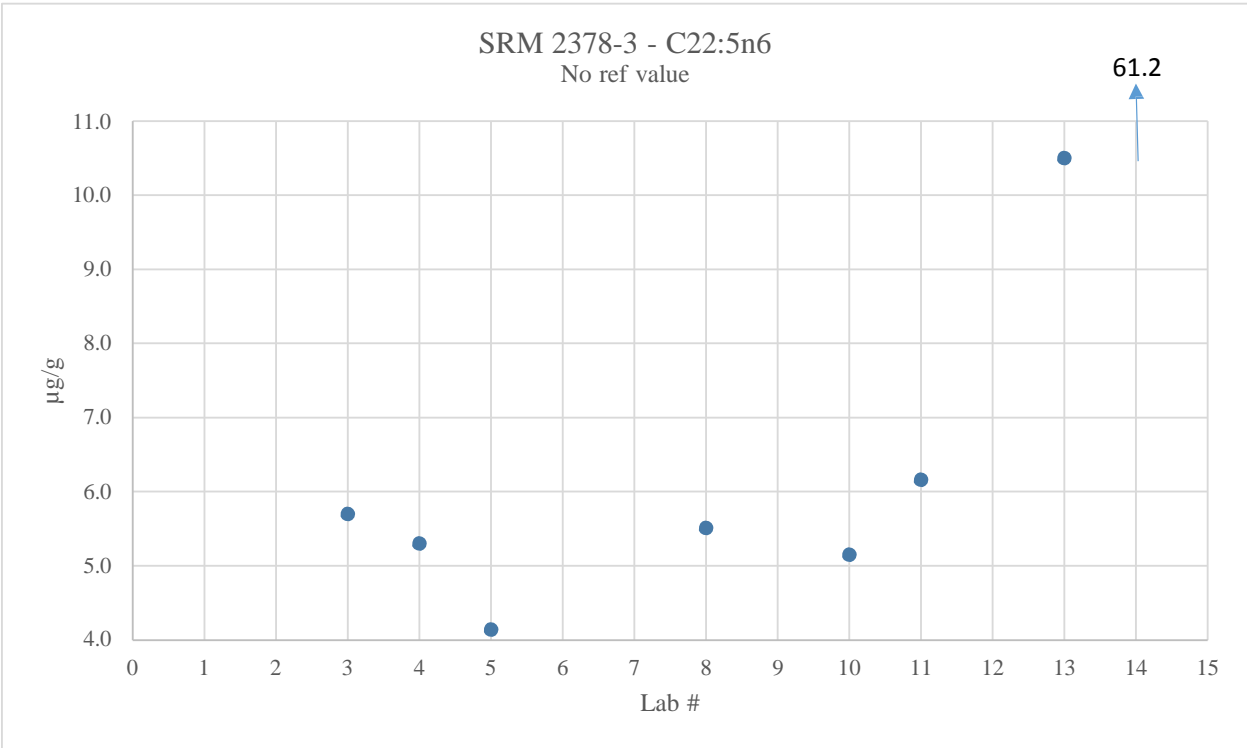
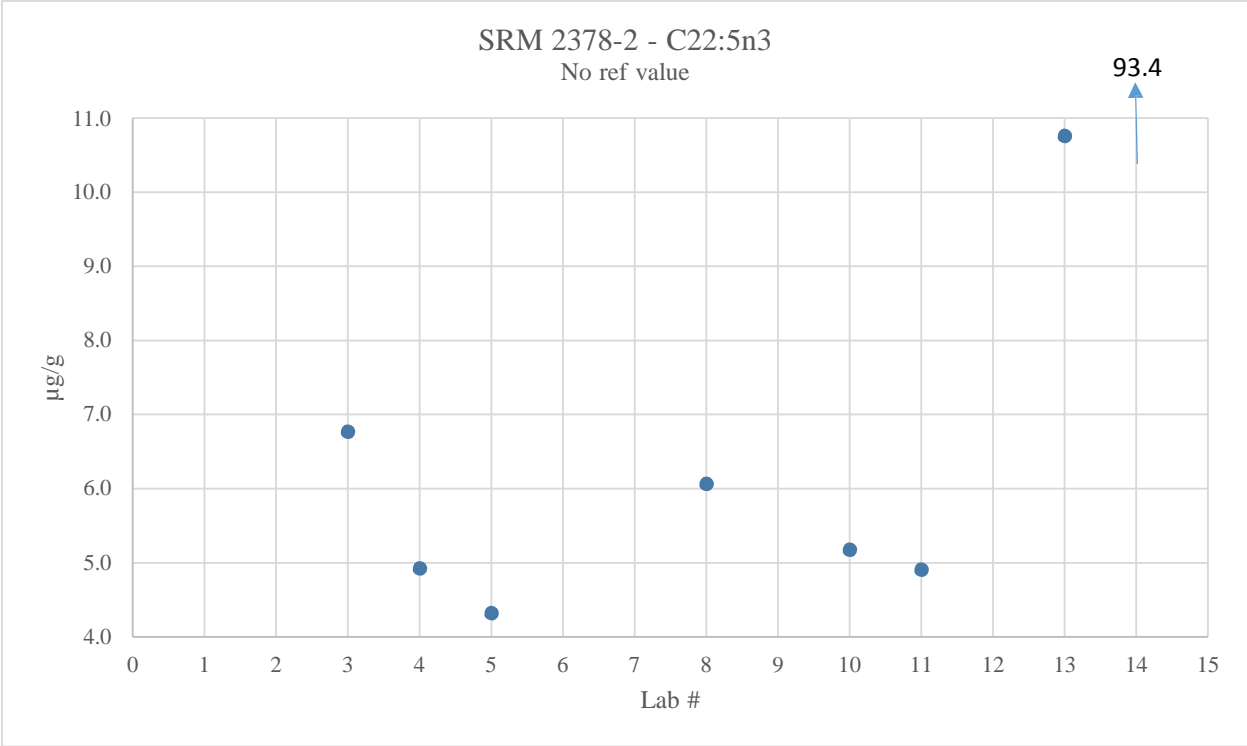


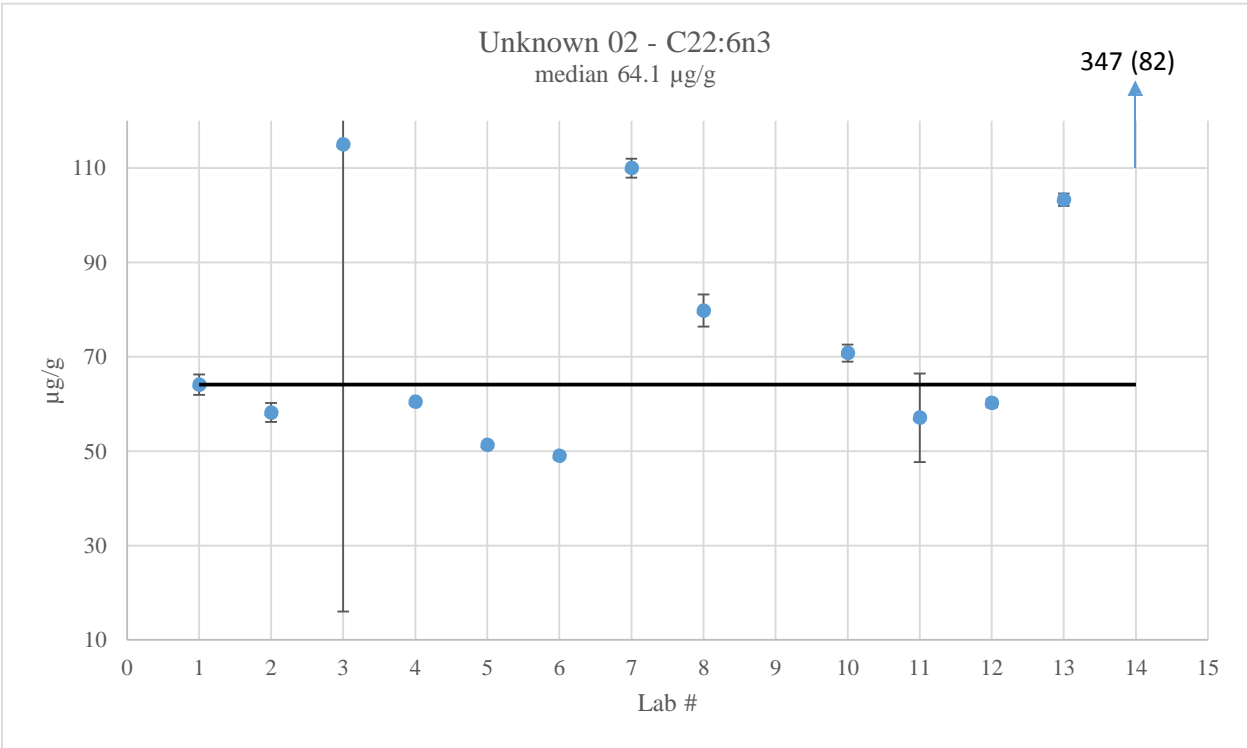
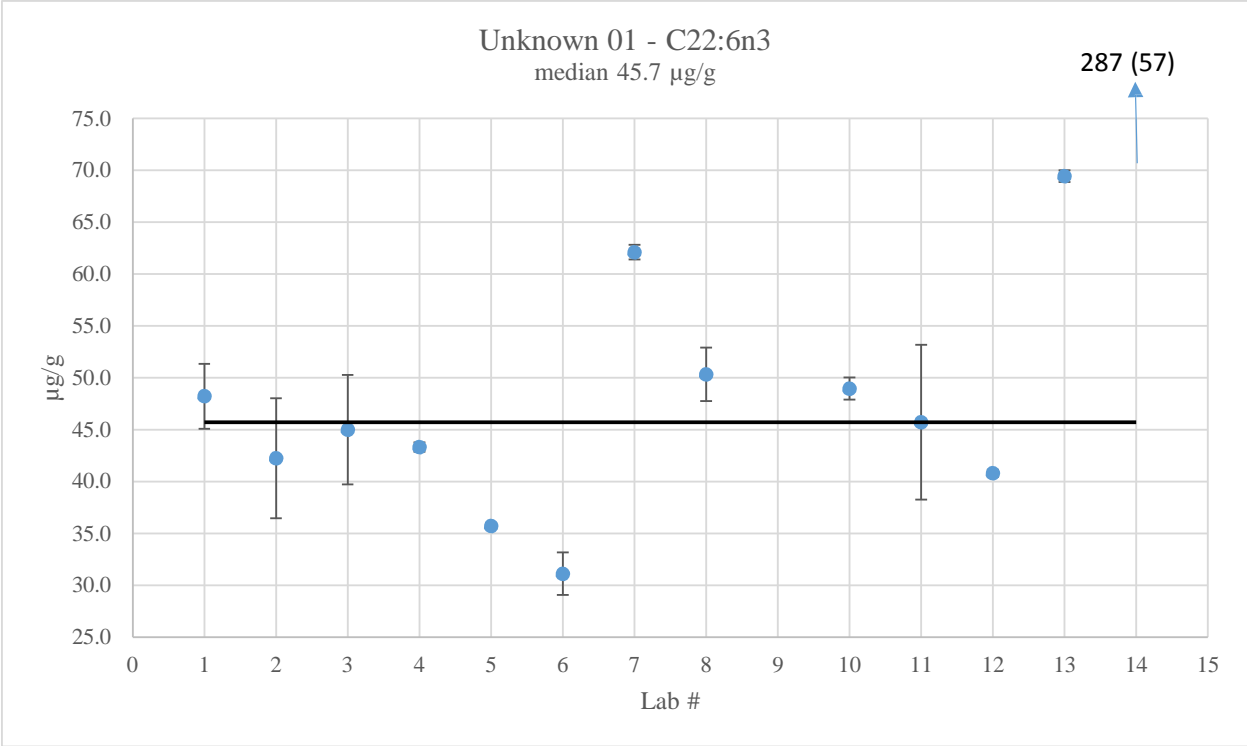


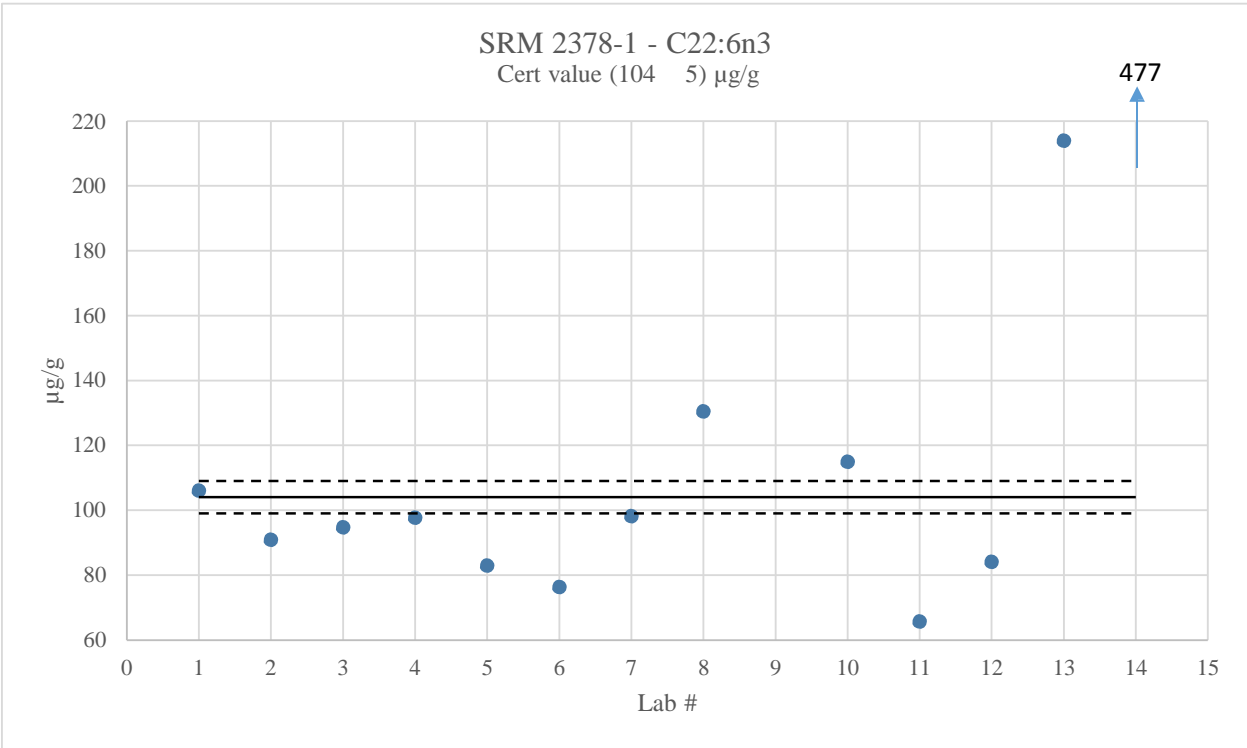
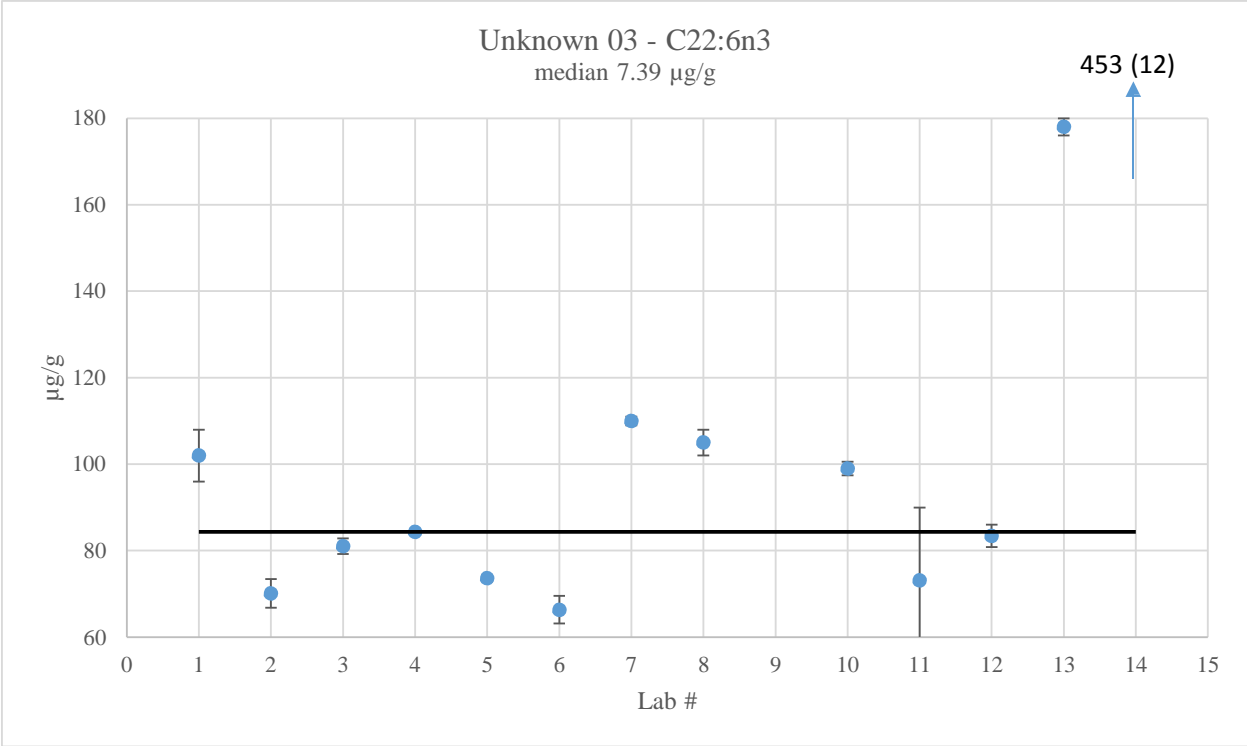


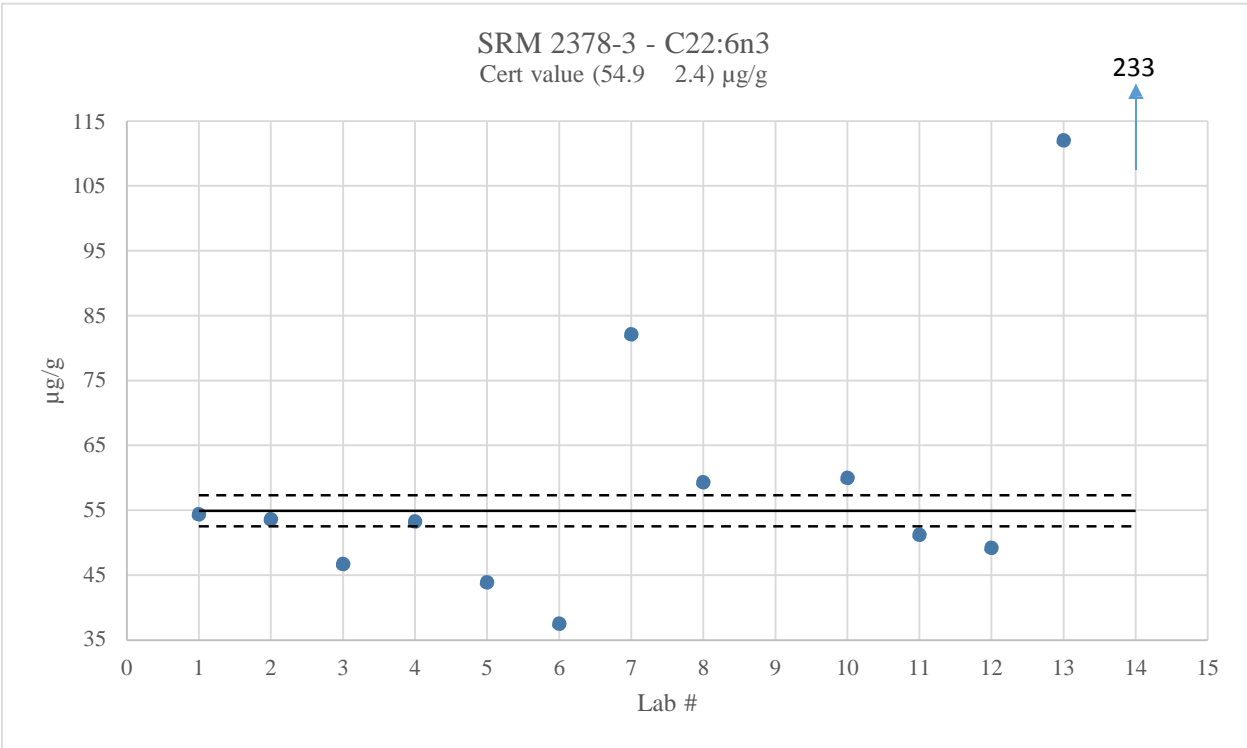
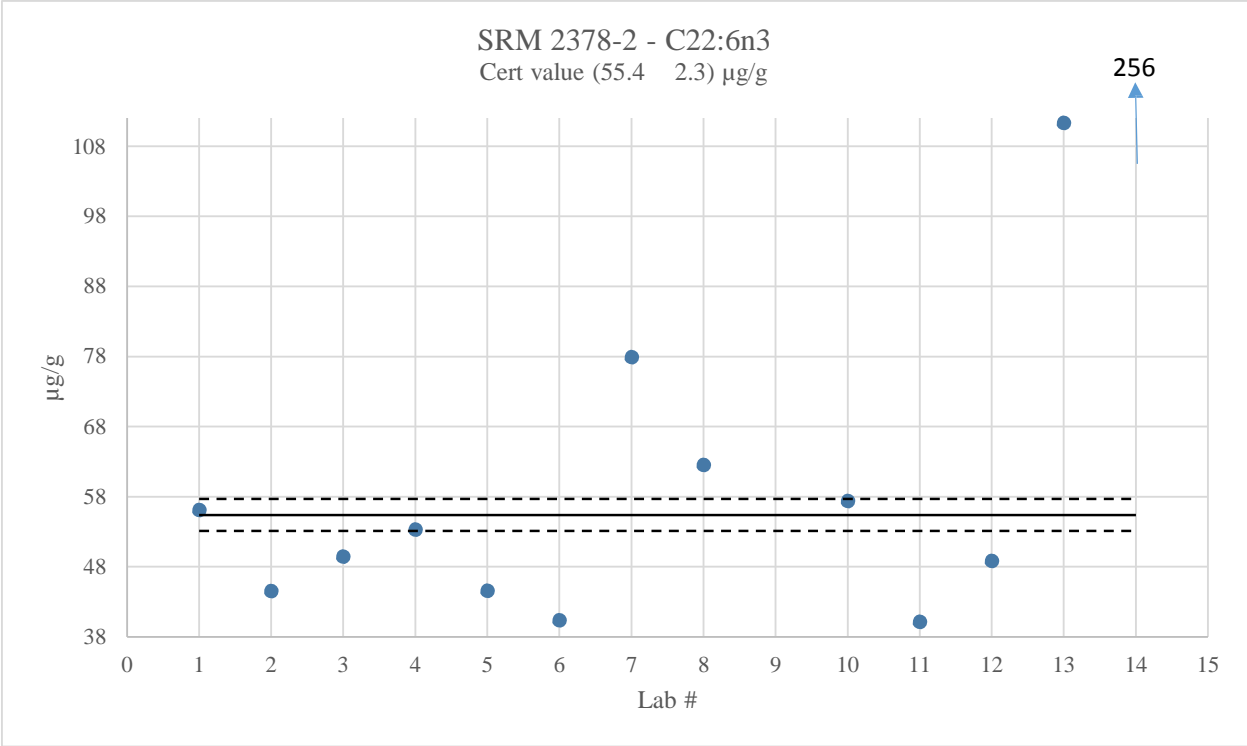


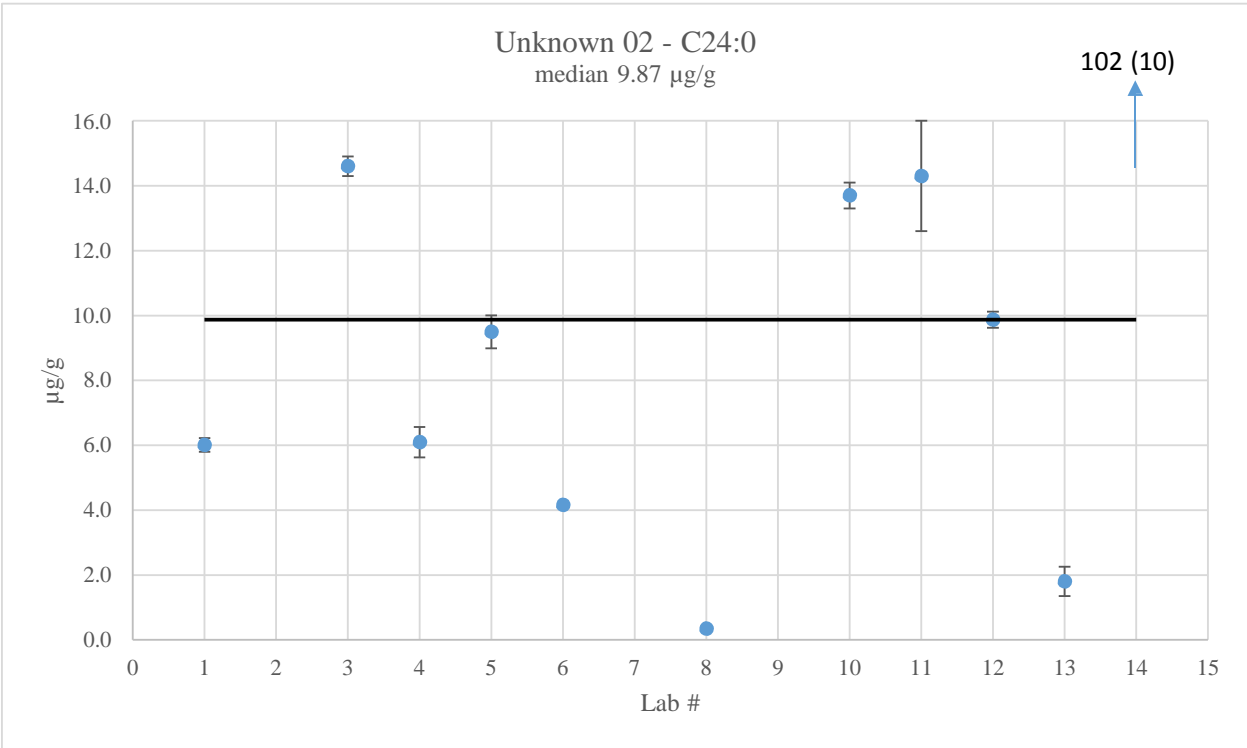
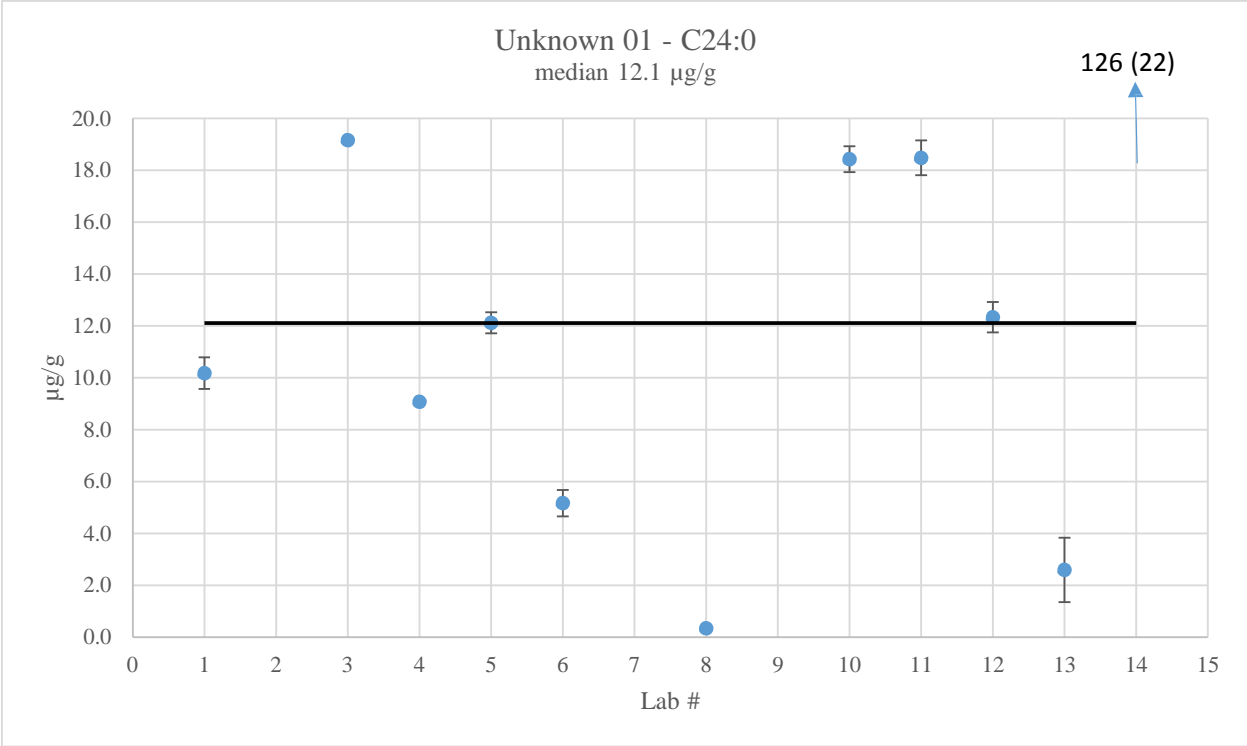


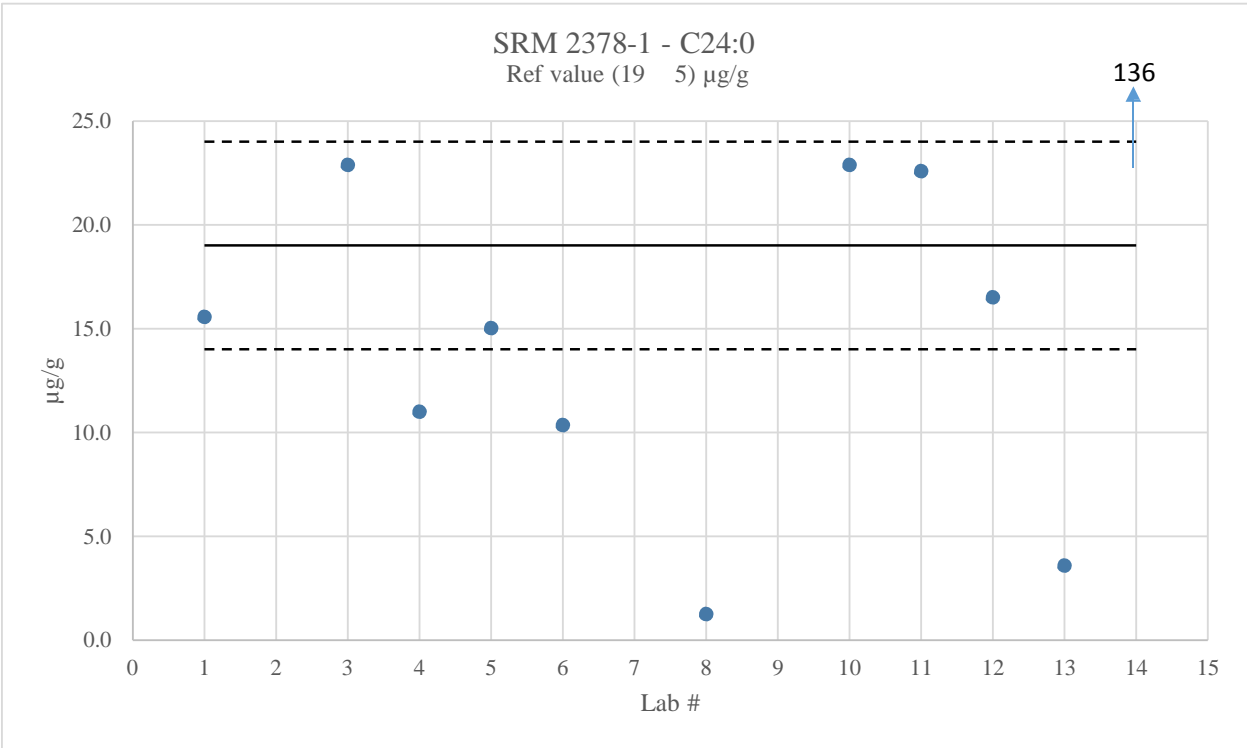
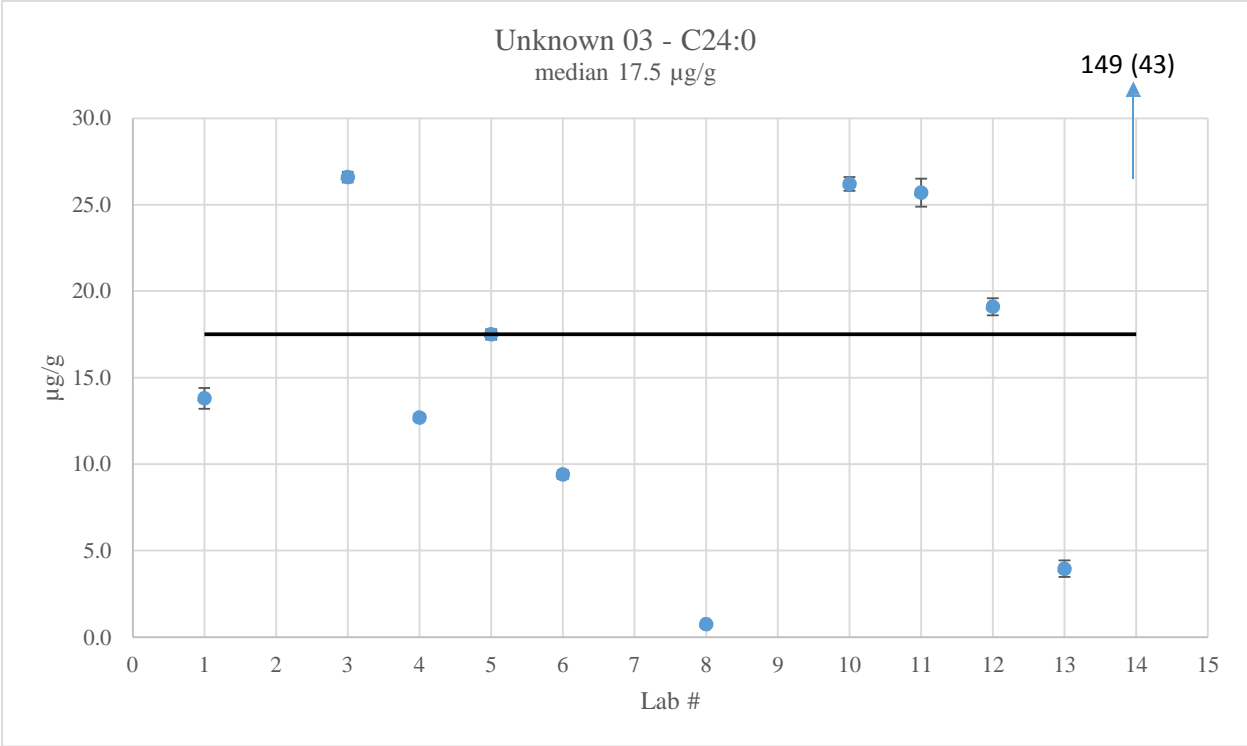


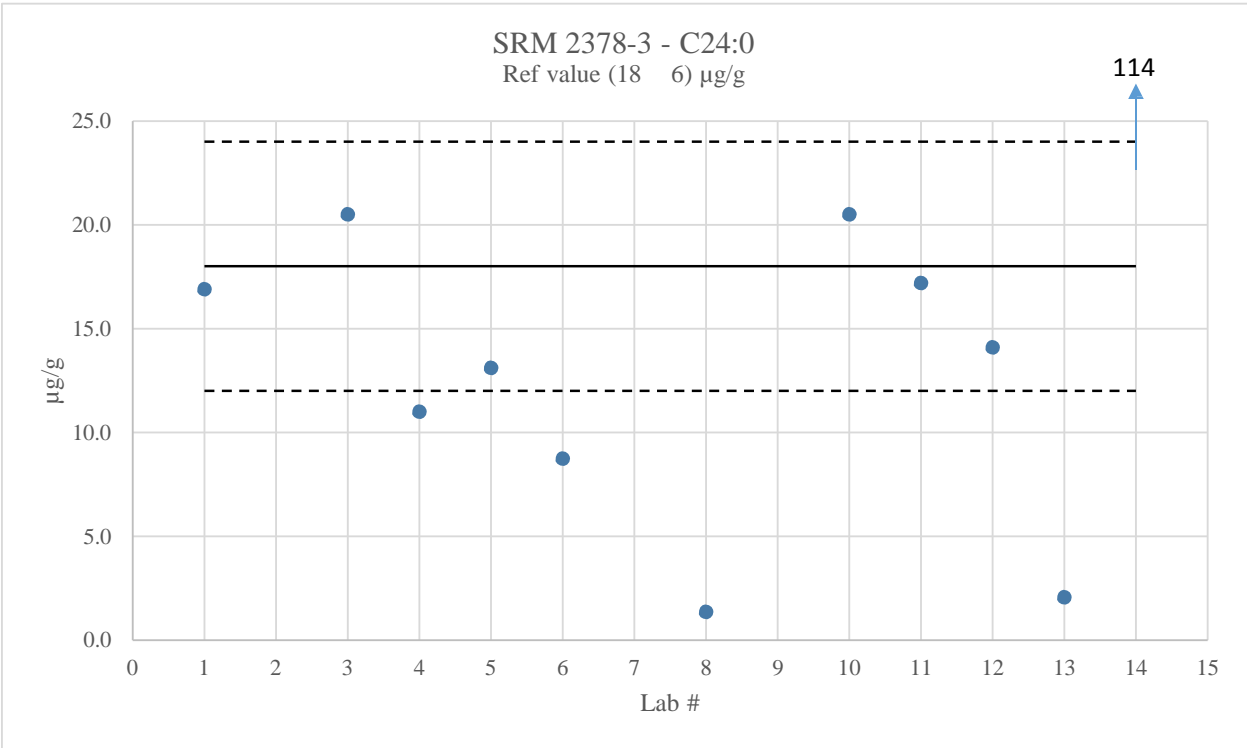
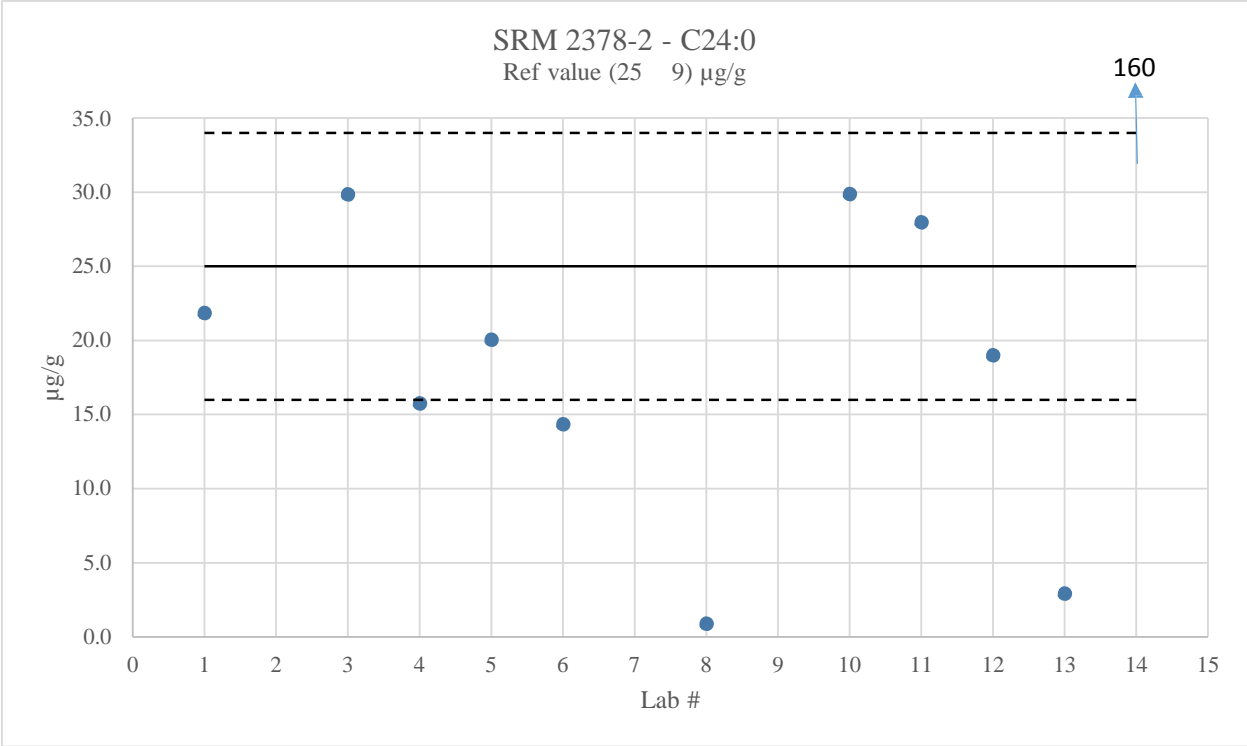


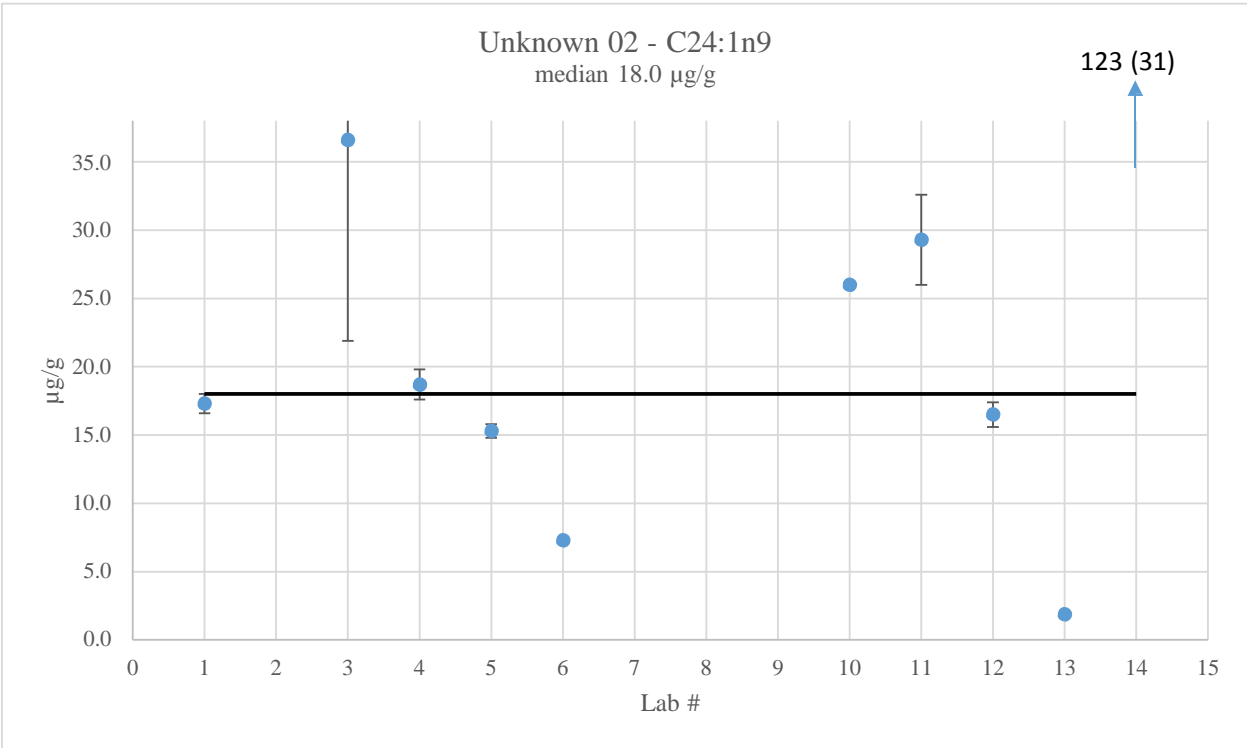
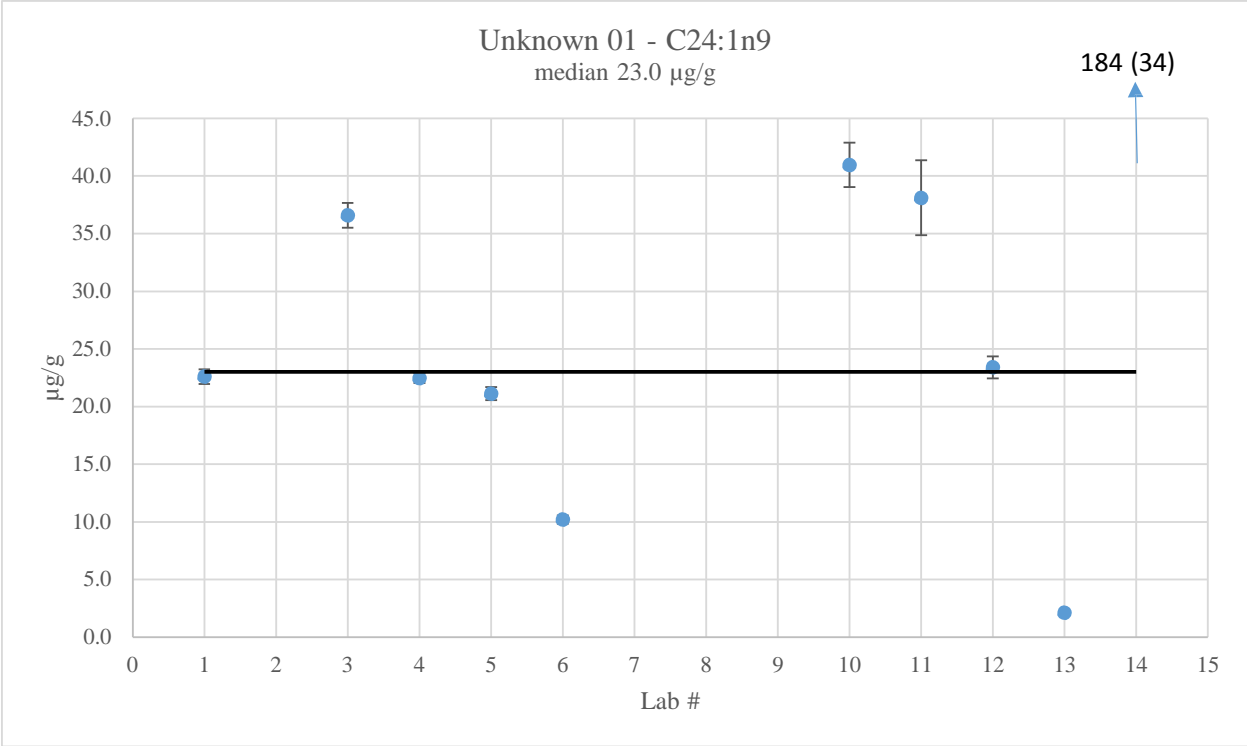


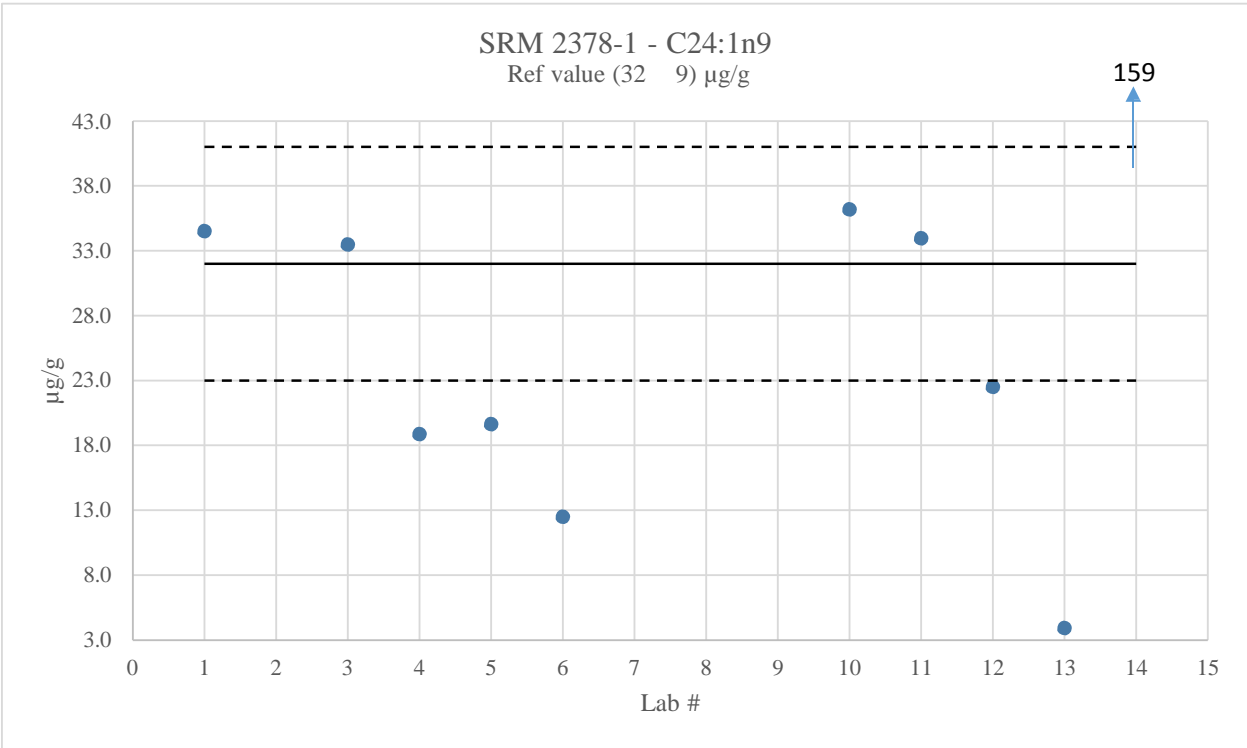
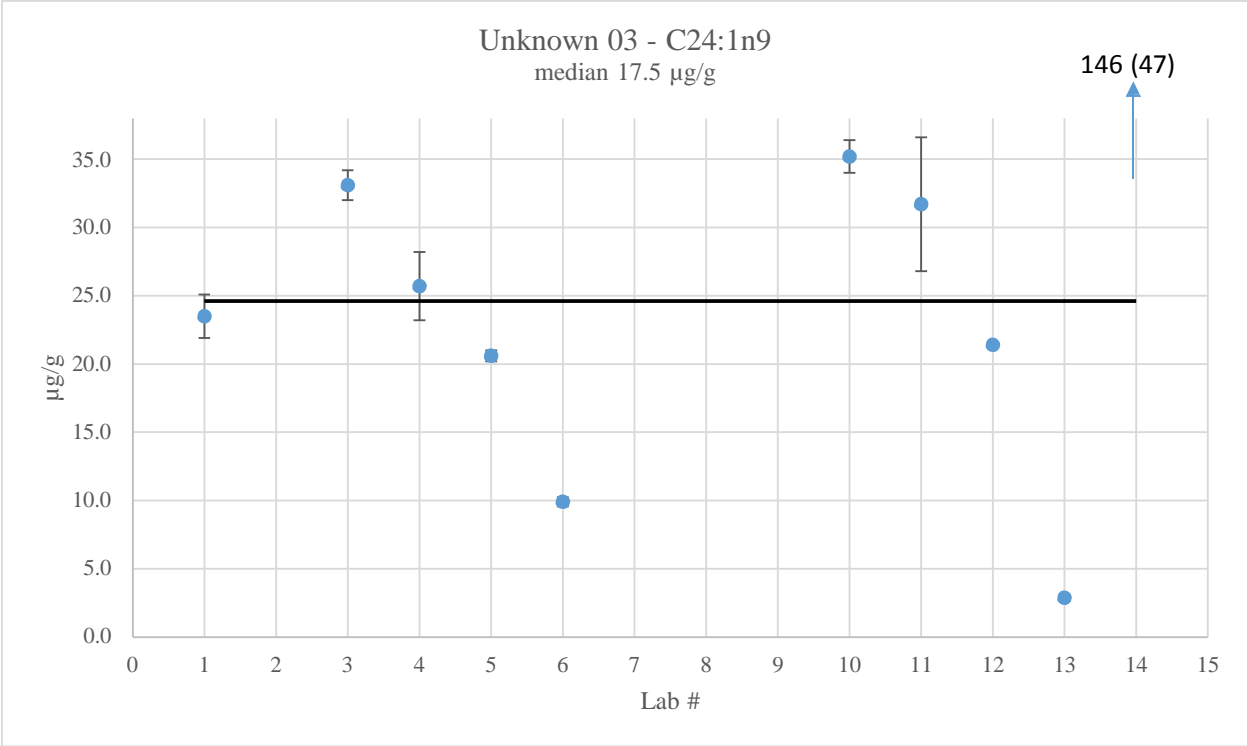


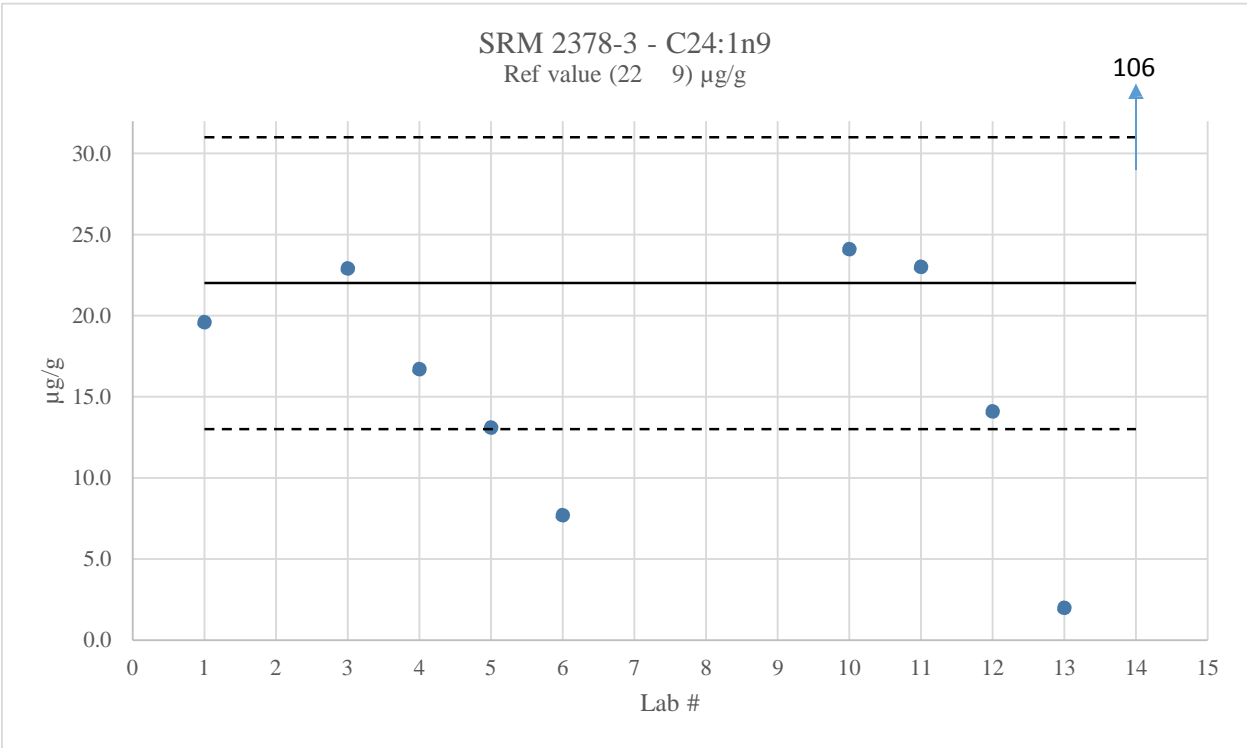
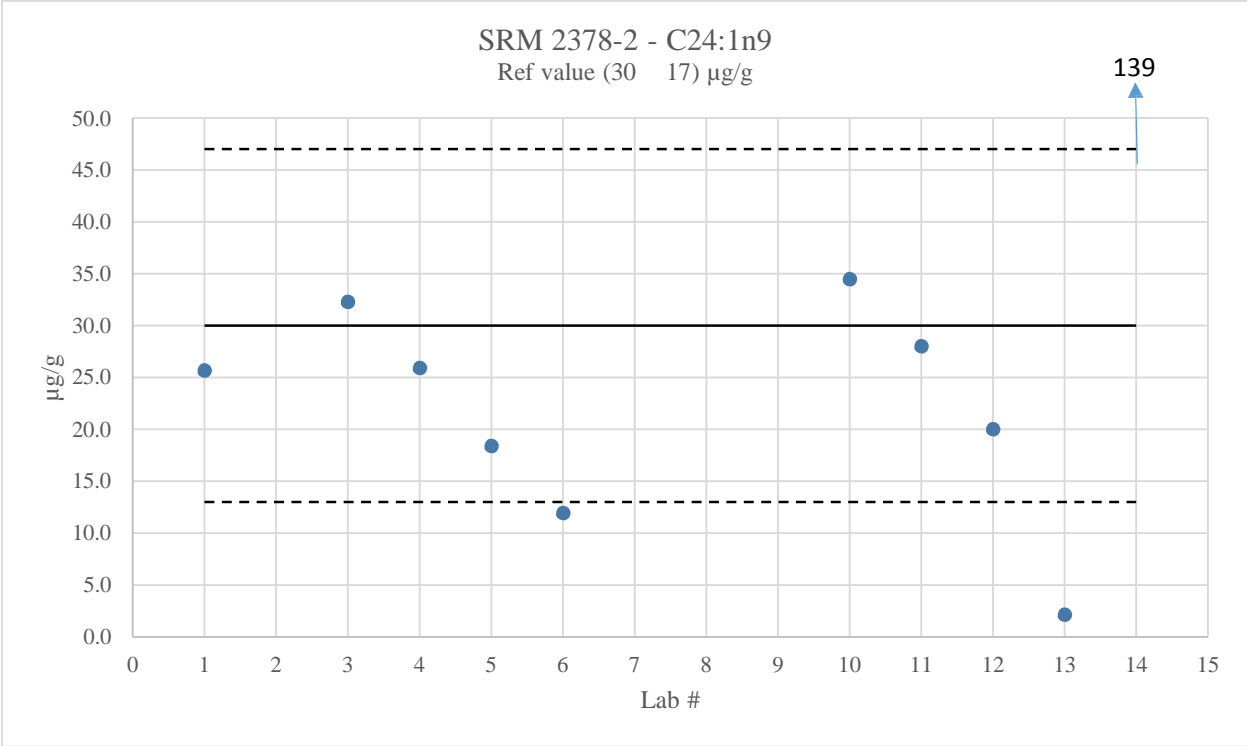




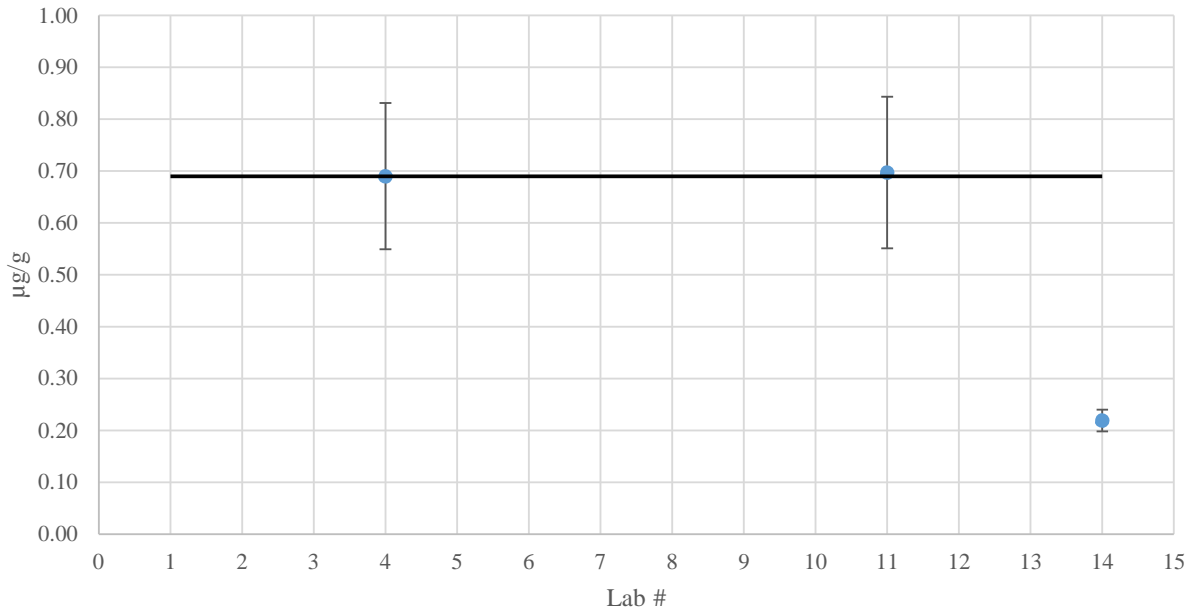




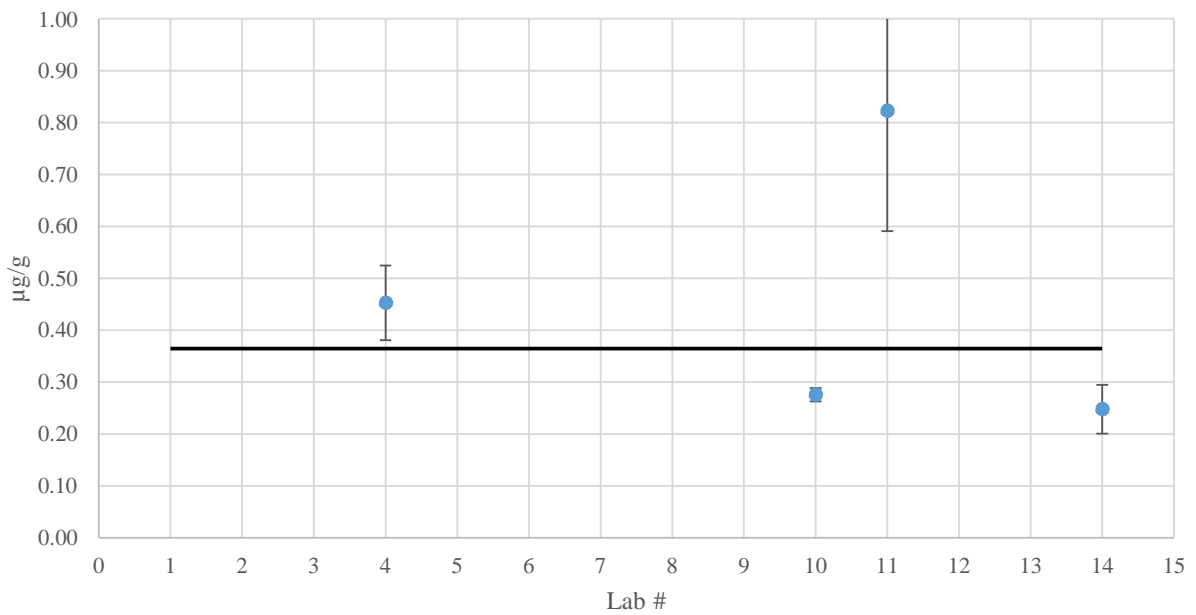


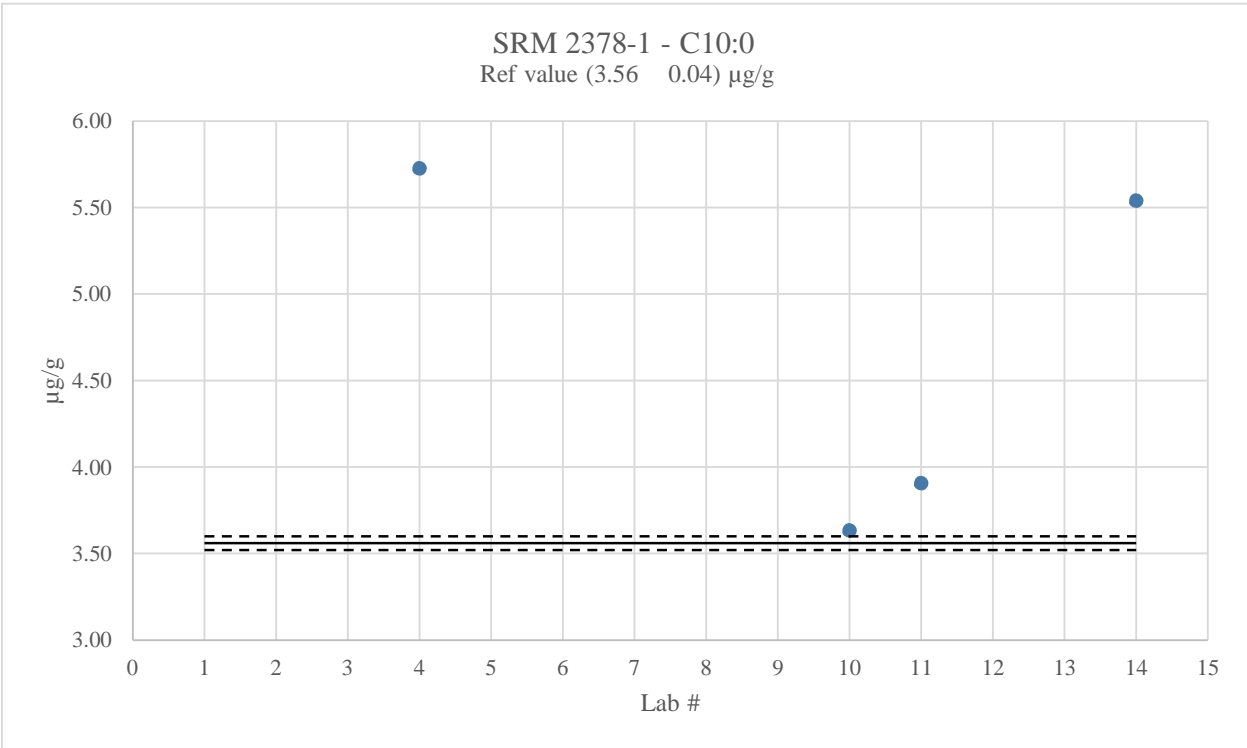
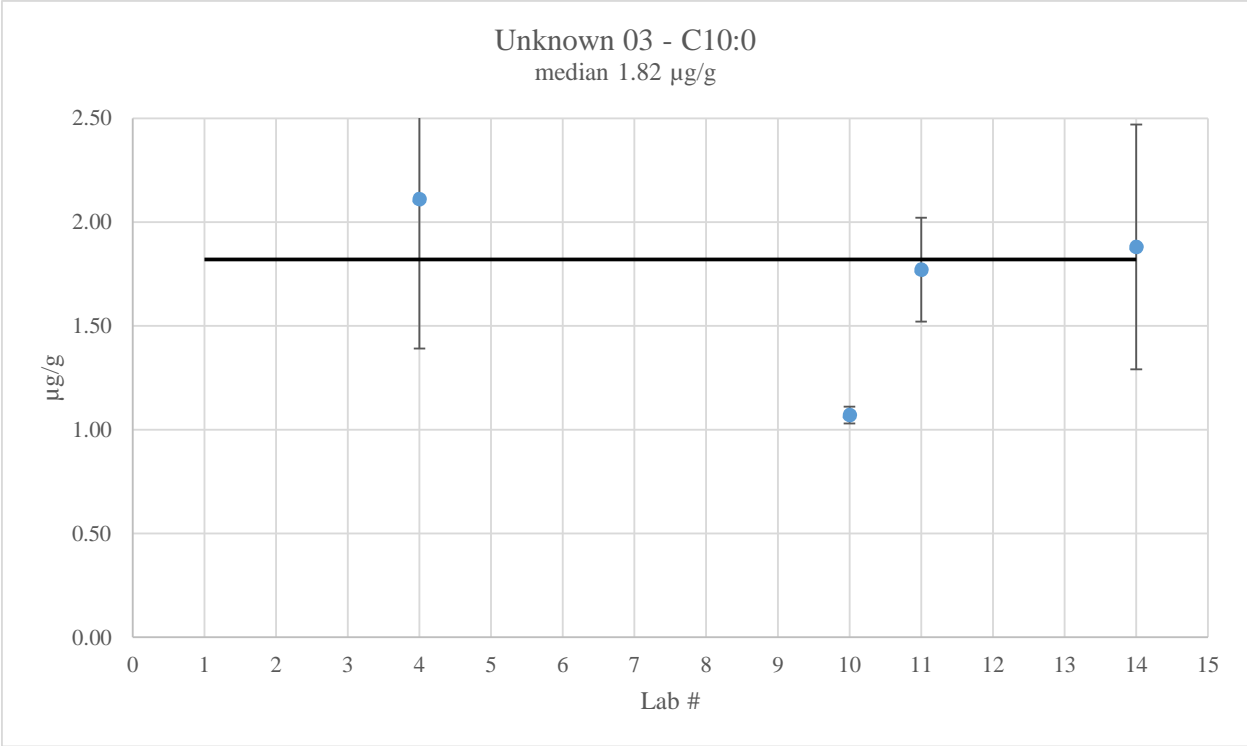


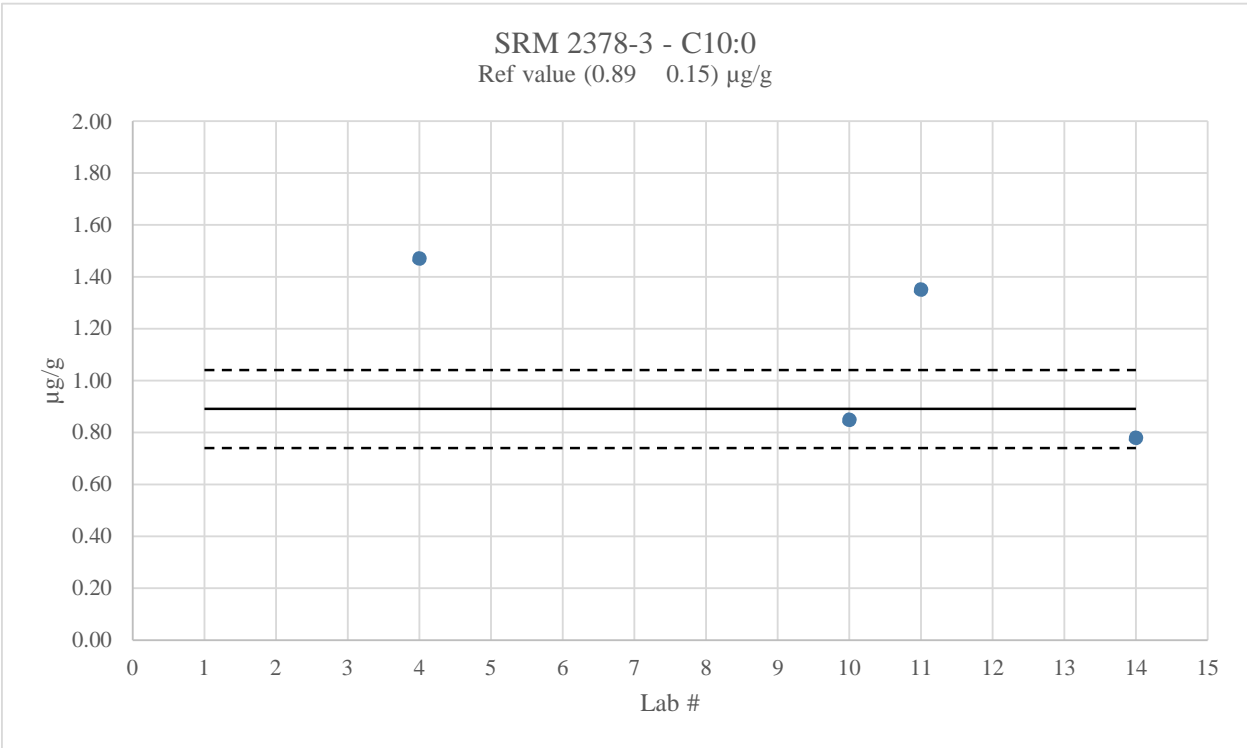
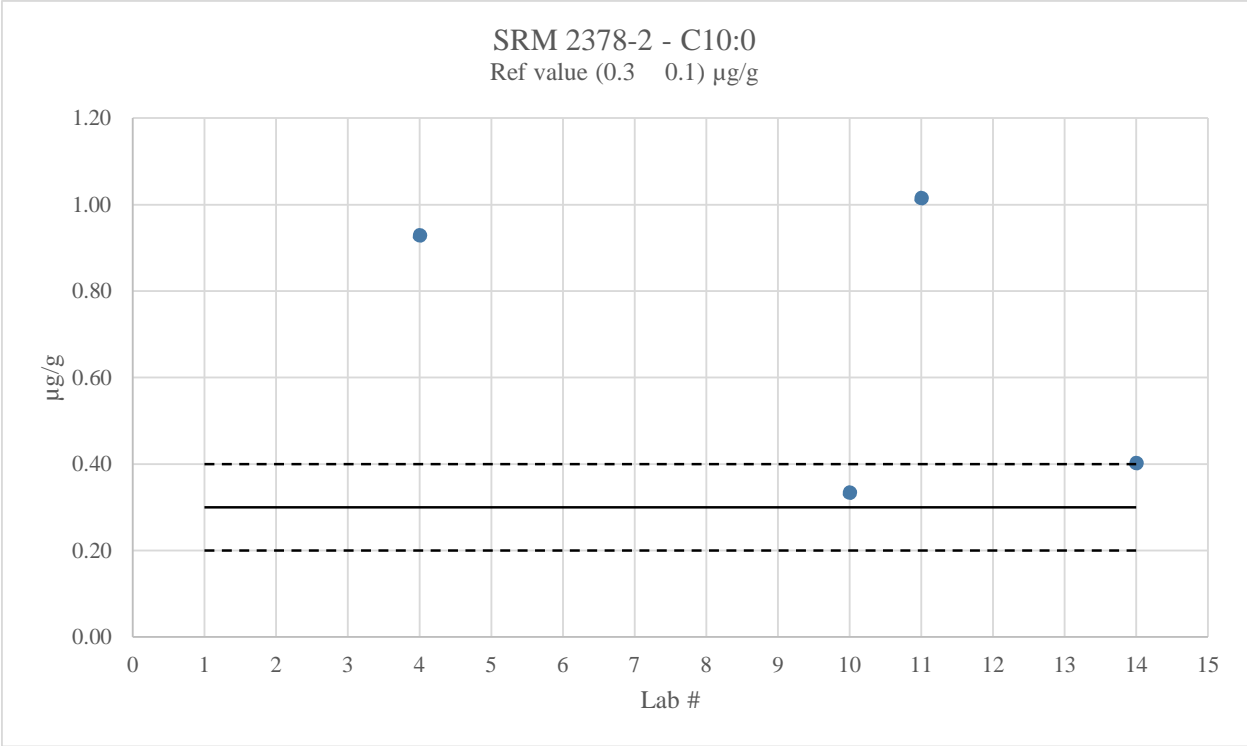
Unknown 01 - C10:0
median 0.690 $\mu\text{g/g}$



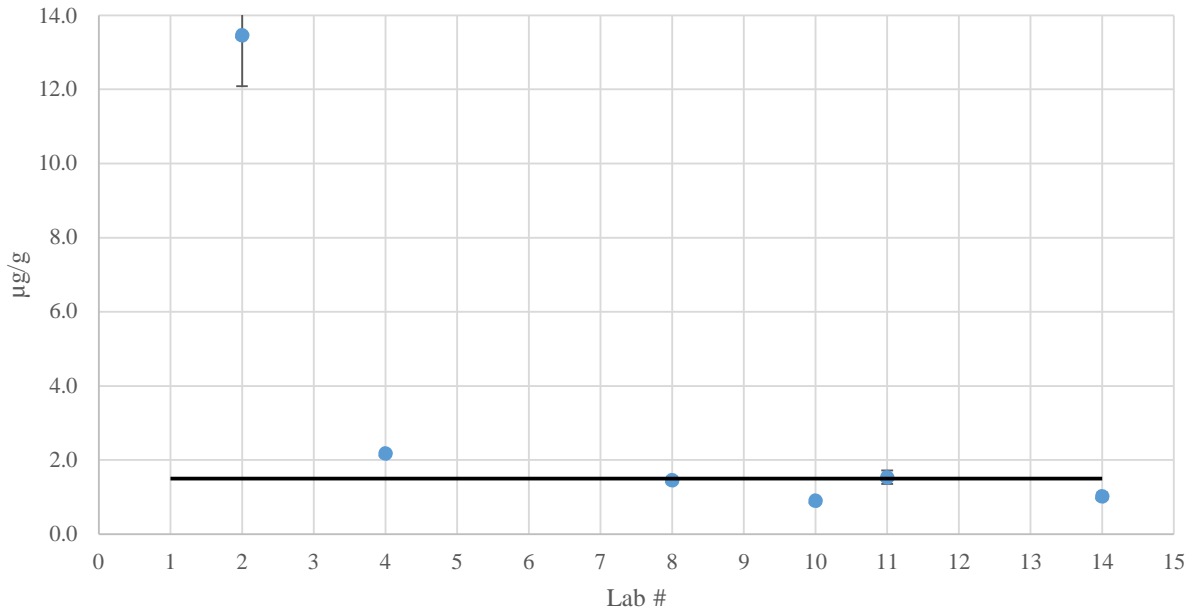
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median 0.365 $\mu\text{g/g}$



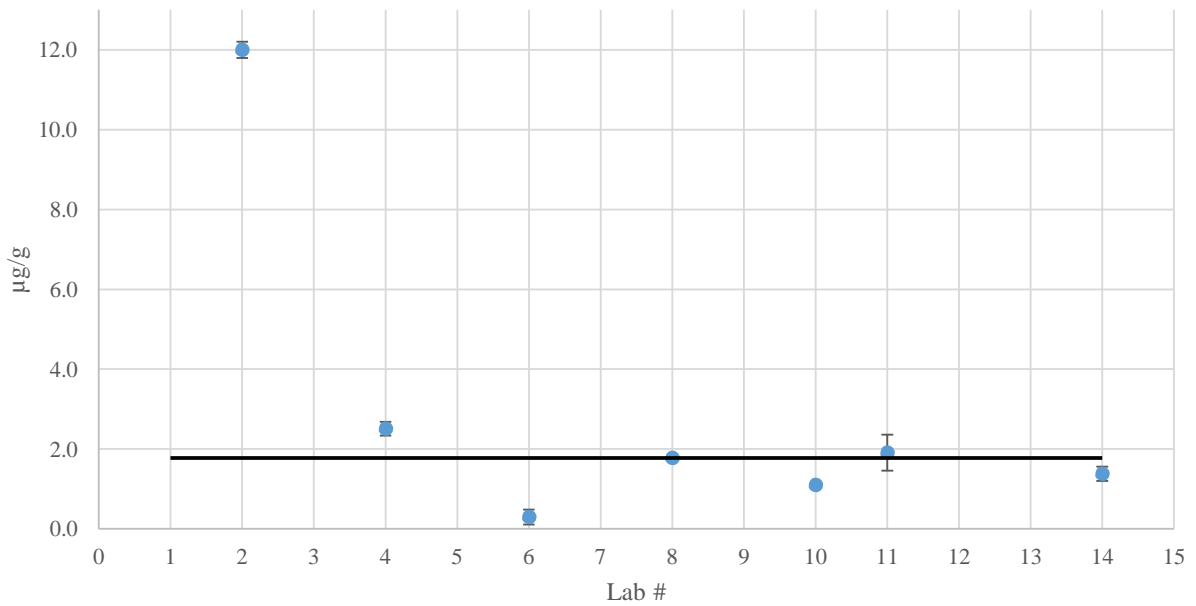


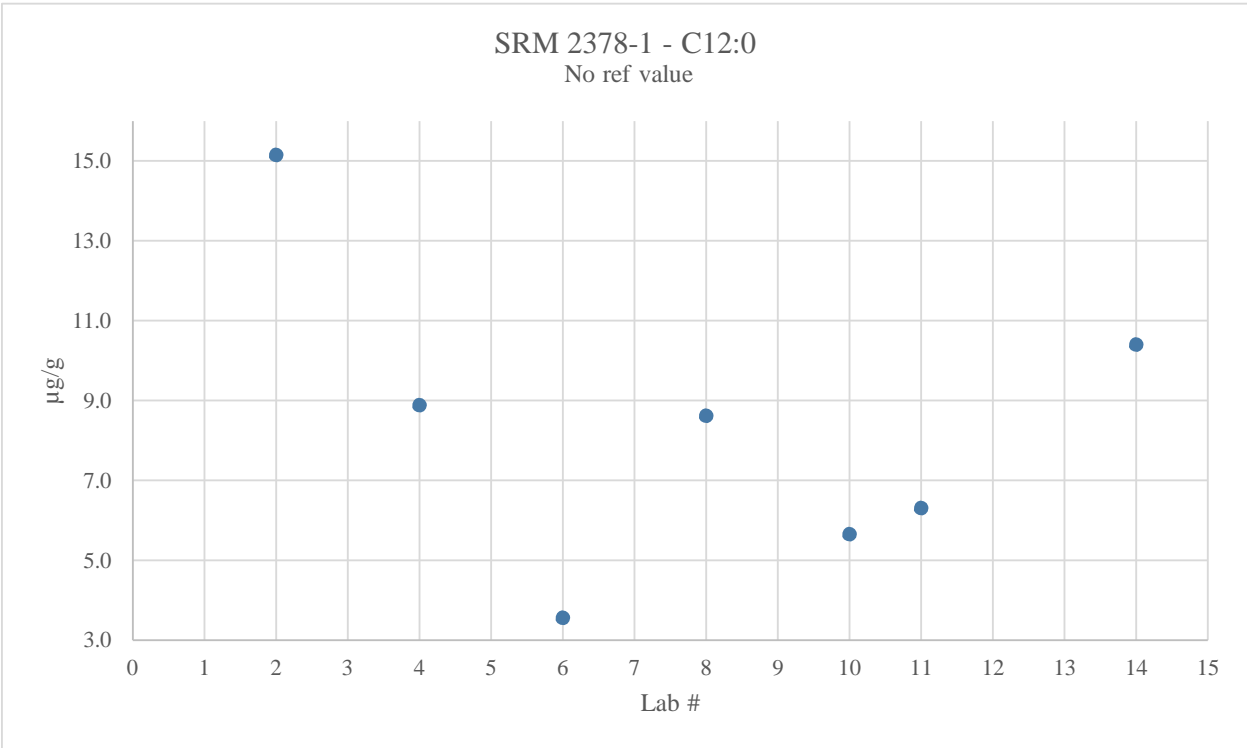
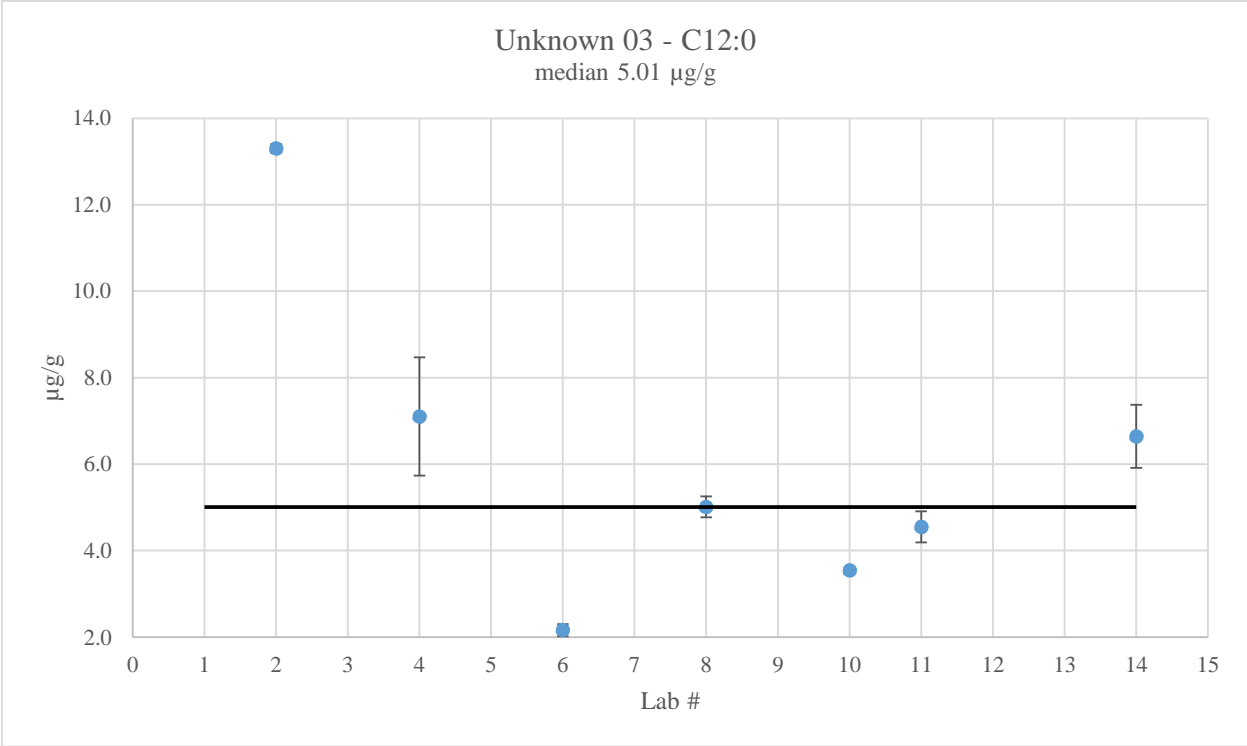


Unknown 01 - C12:0
median 1.50 $\mu\text{g/g}$

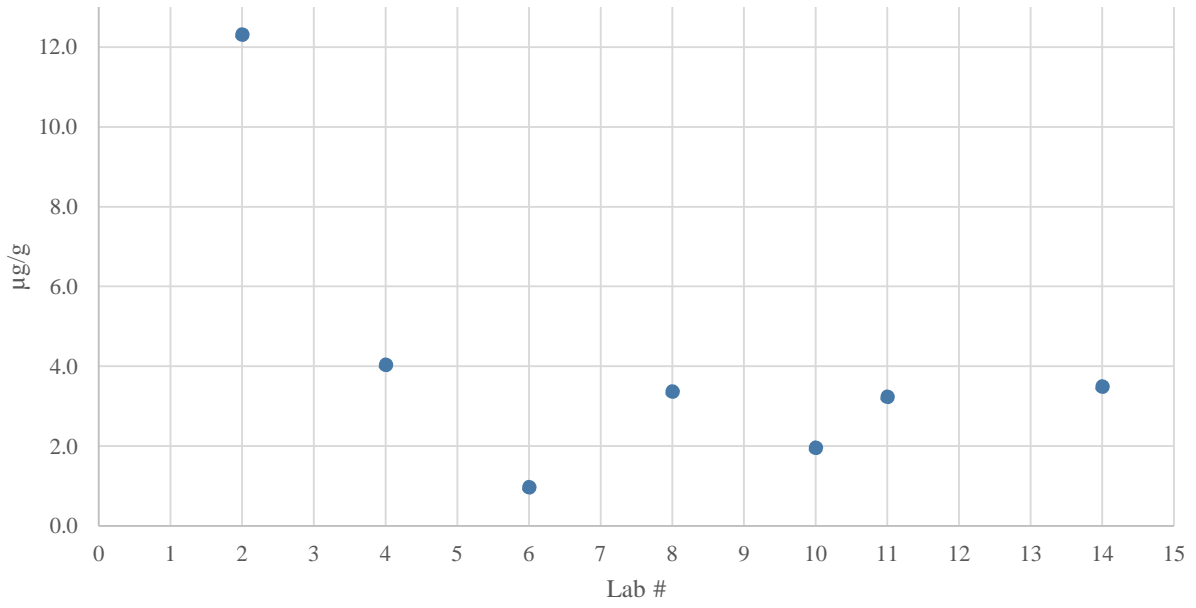


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median 1.78 $\mu\text{g/g}$

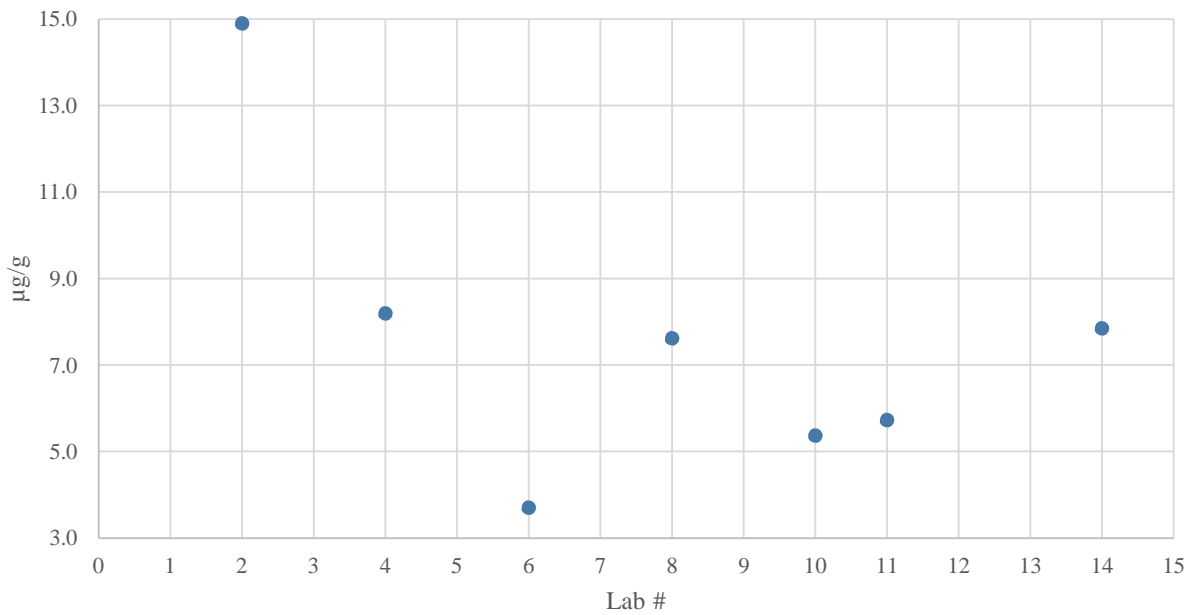




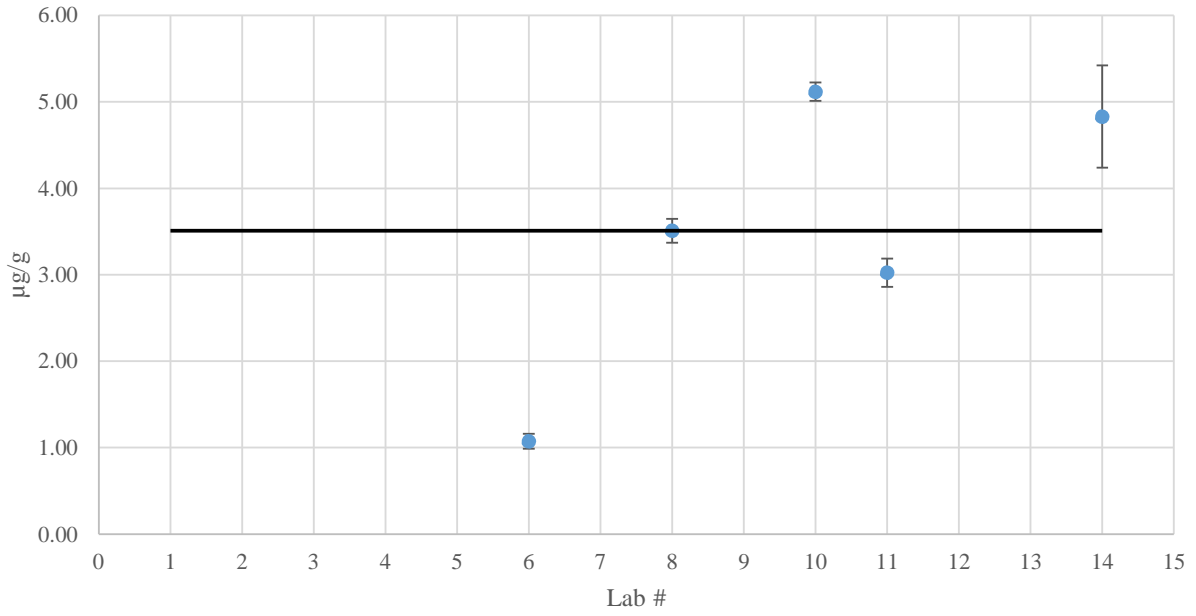
SRM 2378-2 - C12:0
No ref value



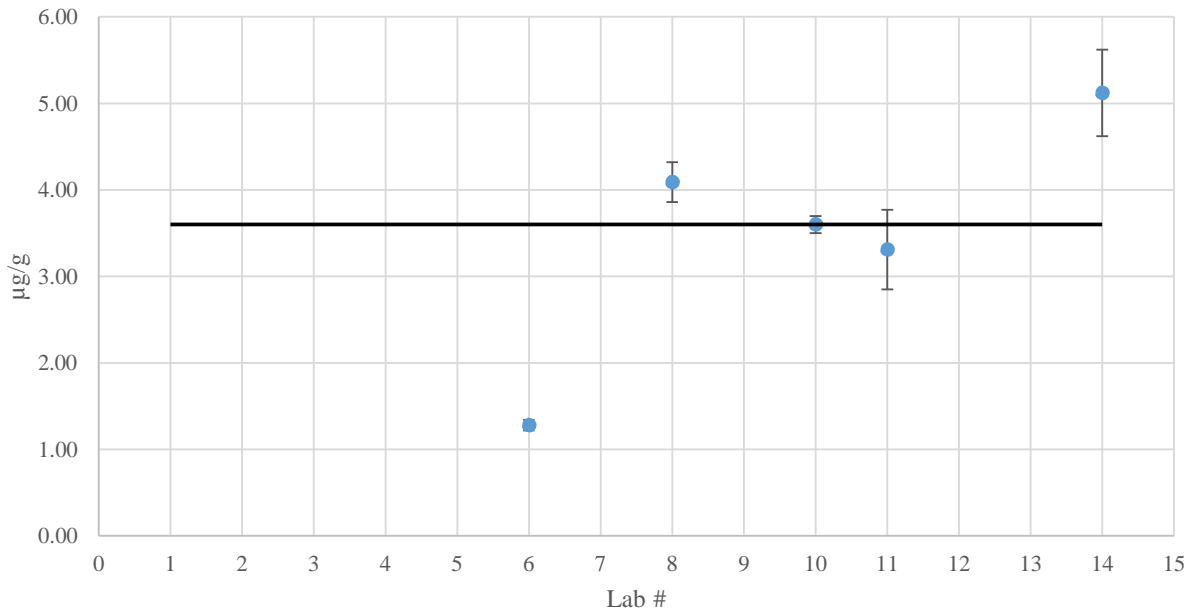
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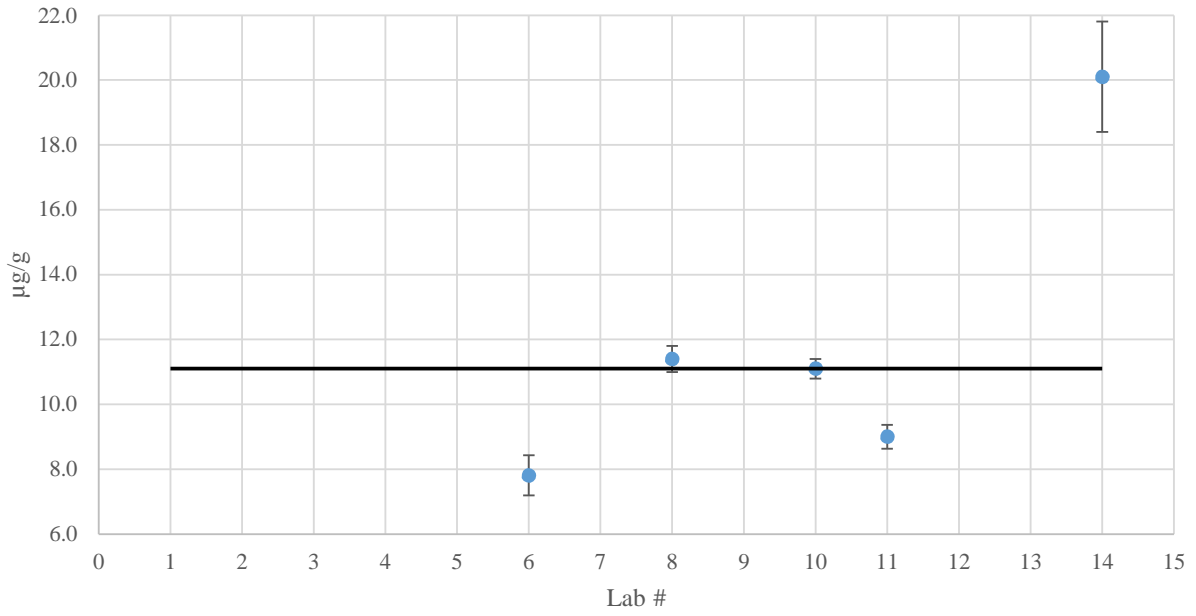
Unknown 01 - C15:0
median 3.51 $\mu\text{g/g}$



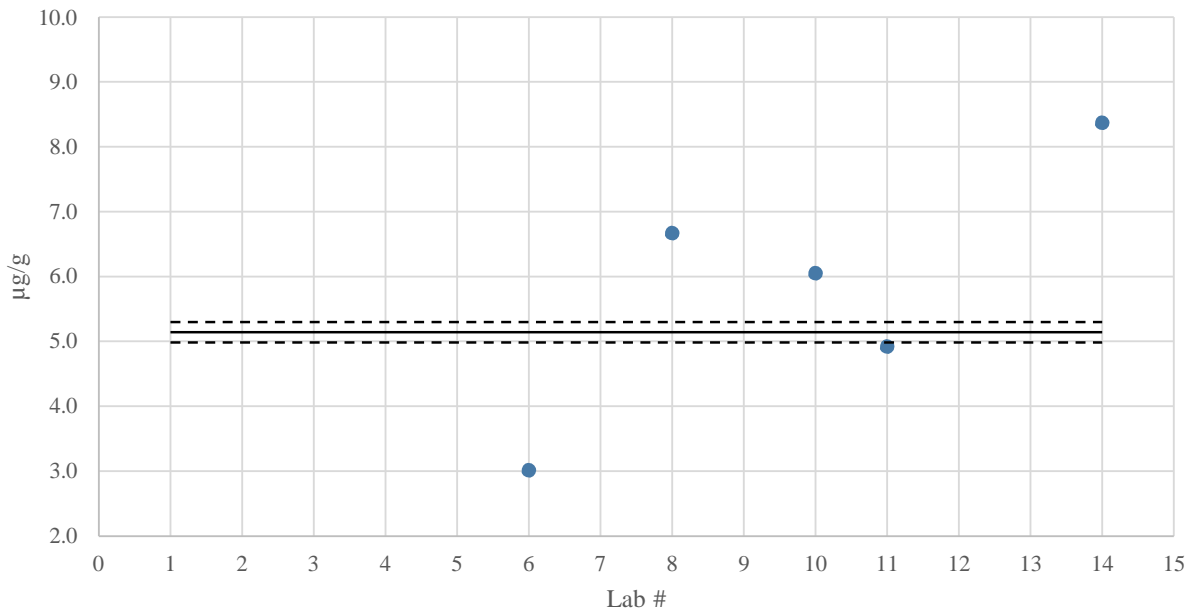
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median 3.60 $\mu\text{g/g}$

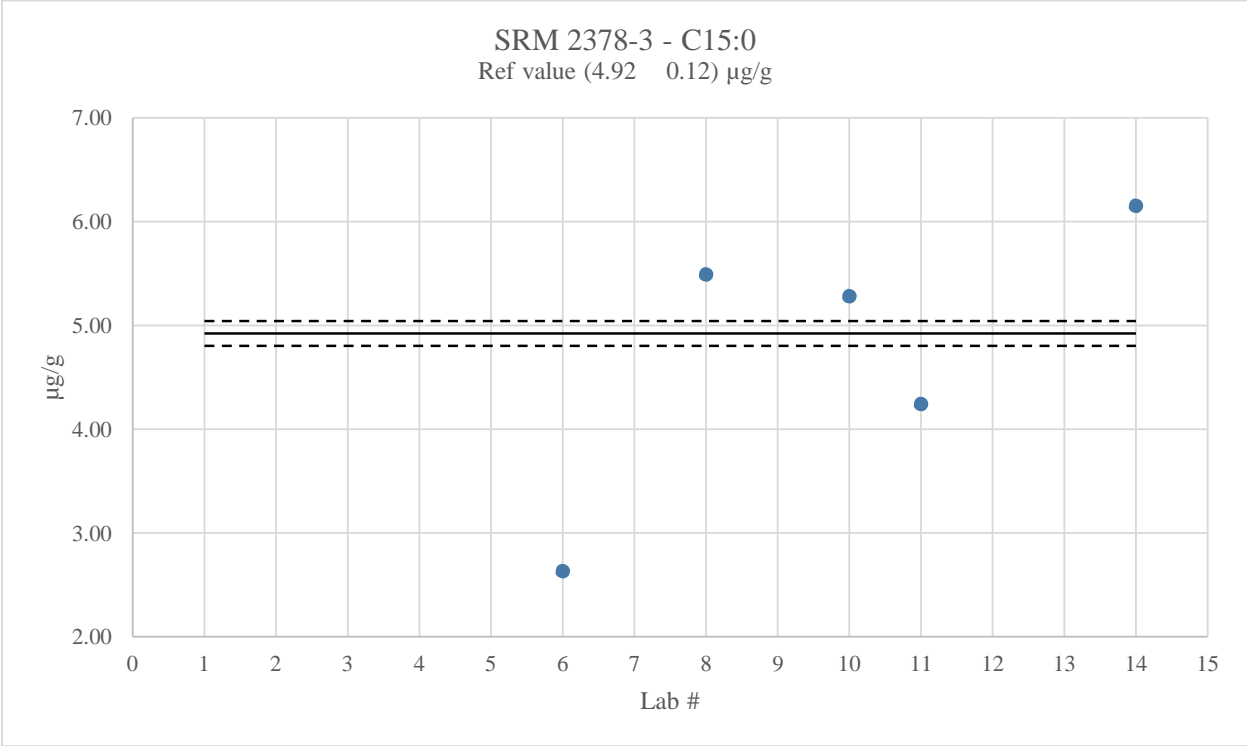
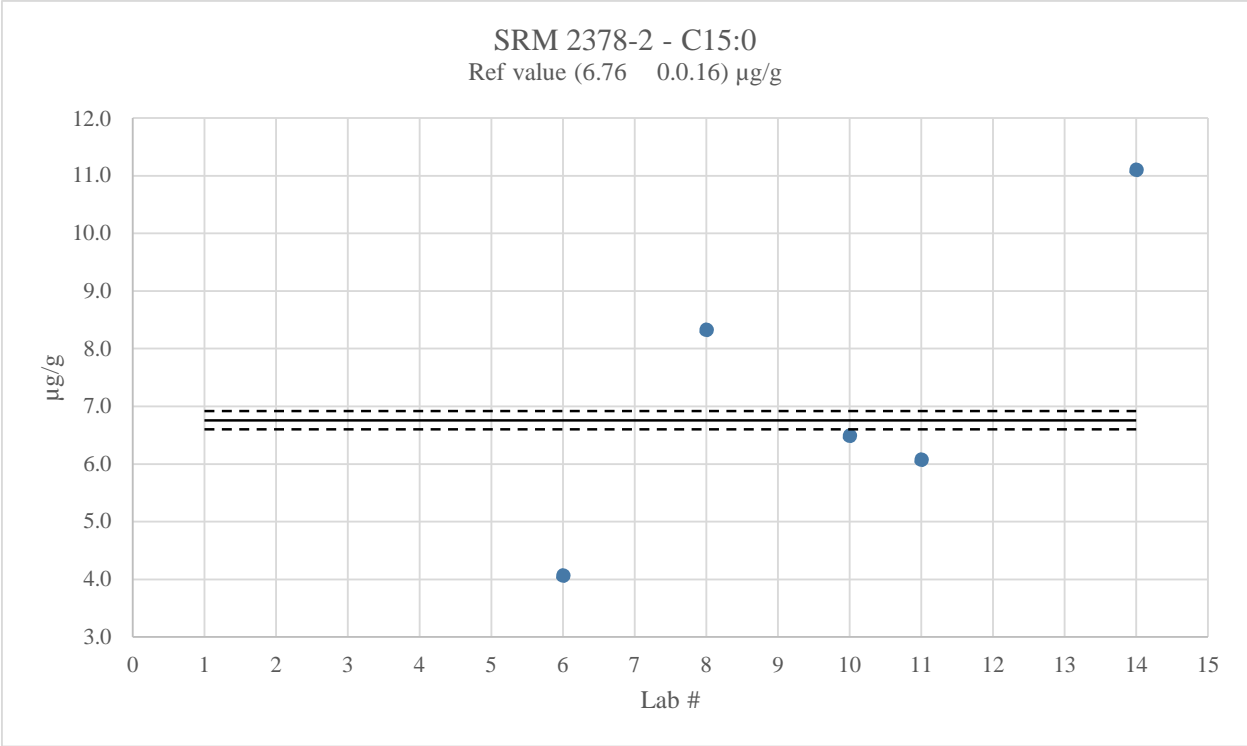


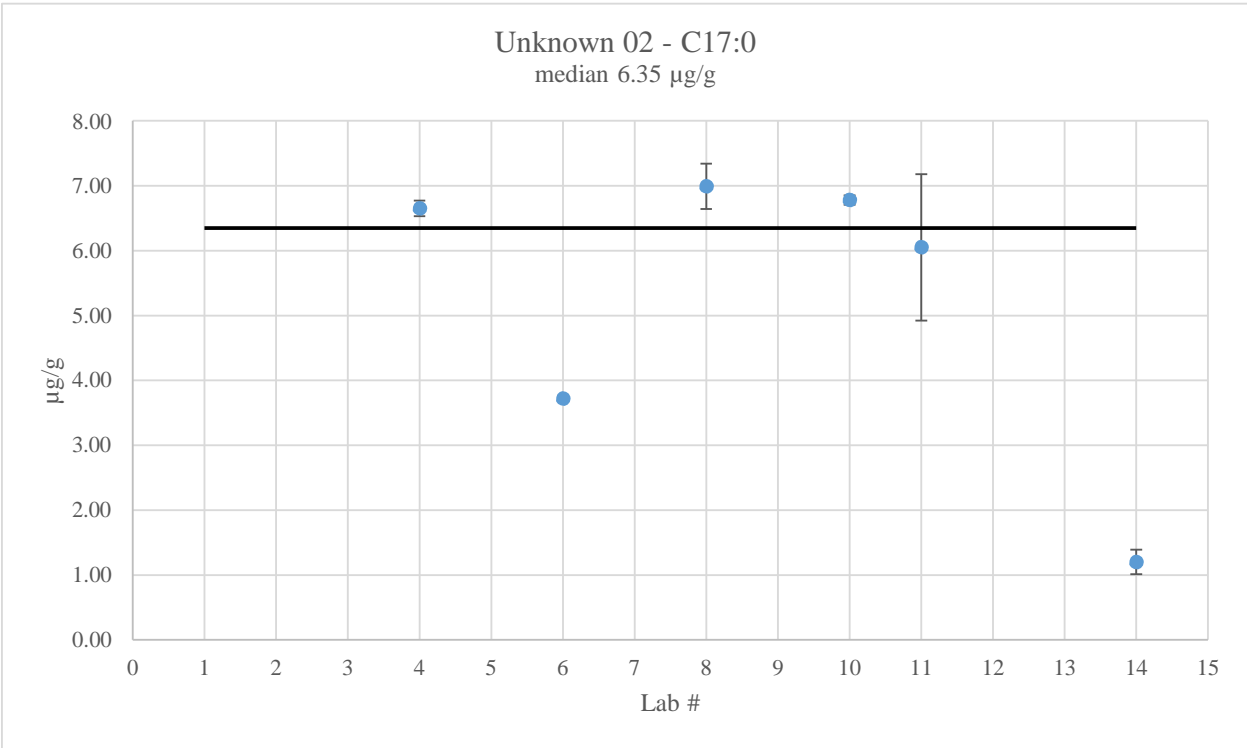
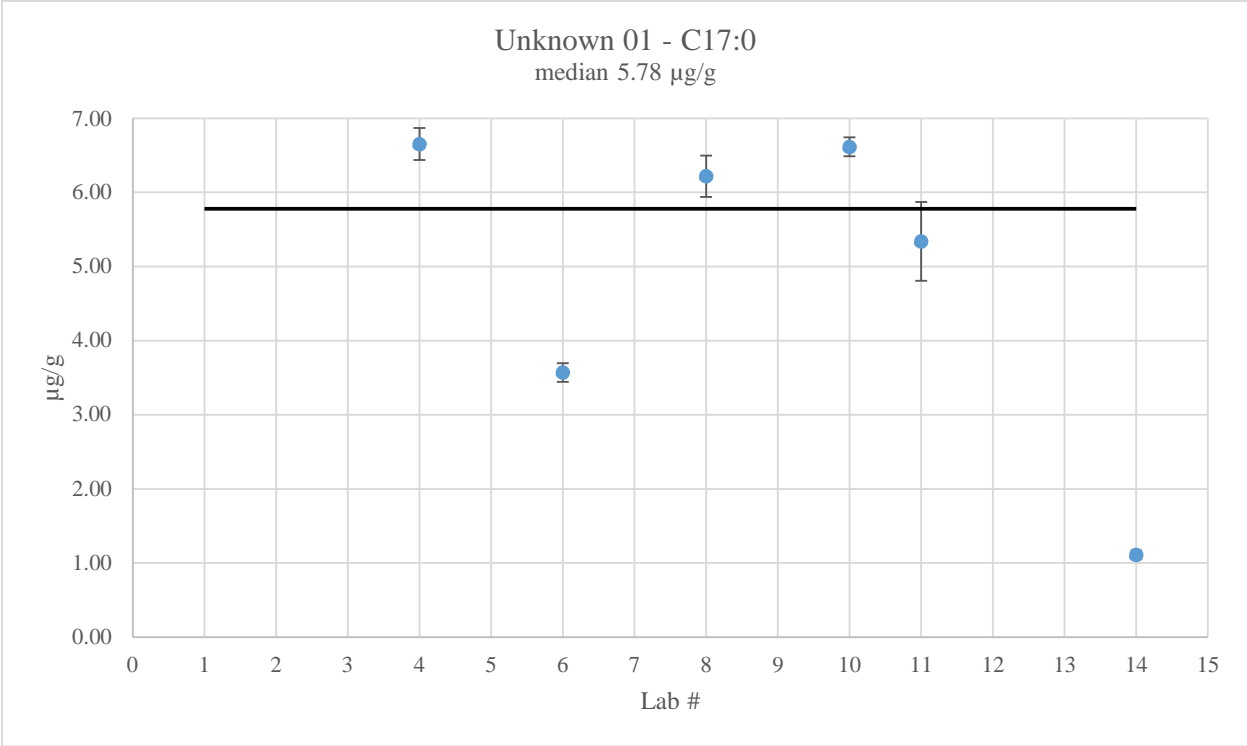
Unknown 03 - C15:0
median 11.1 $\mu\text{g/g}$

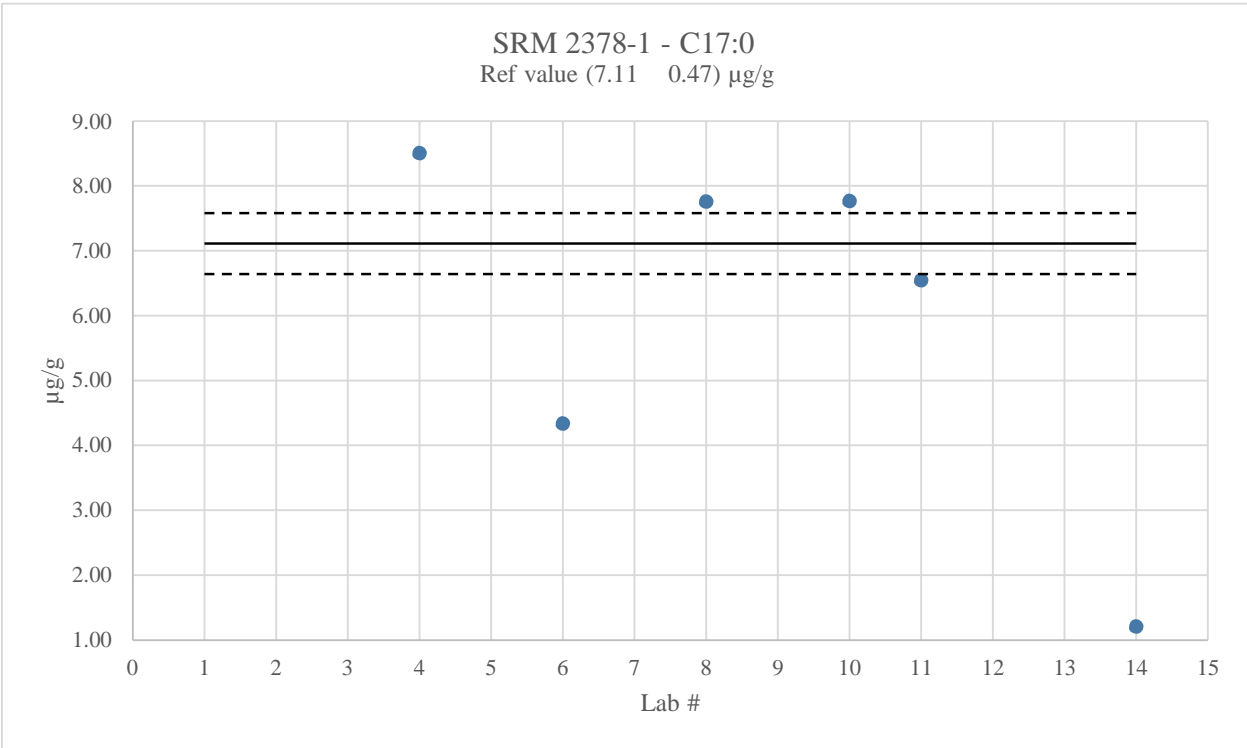
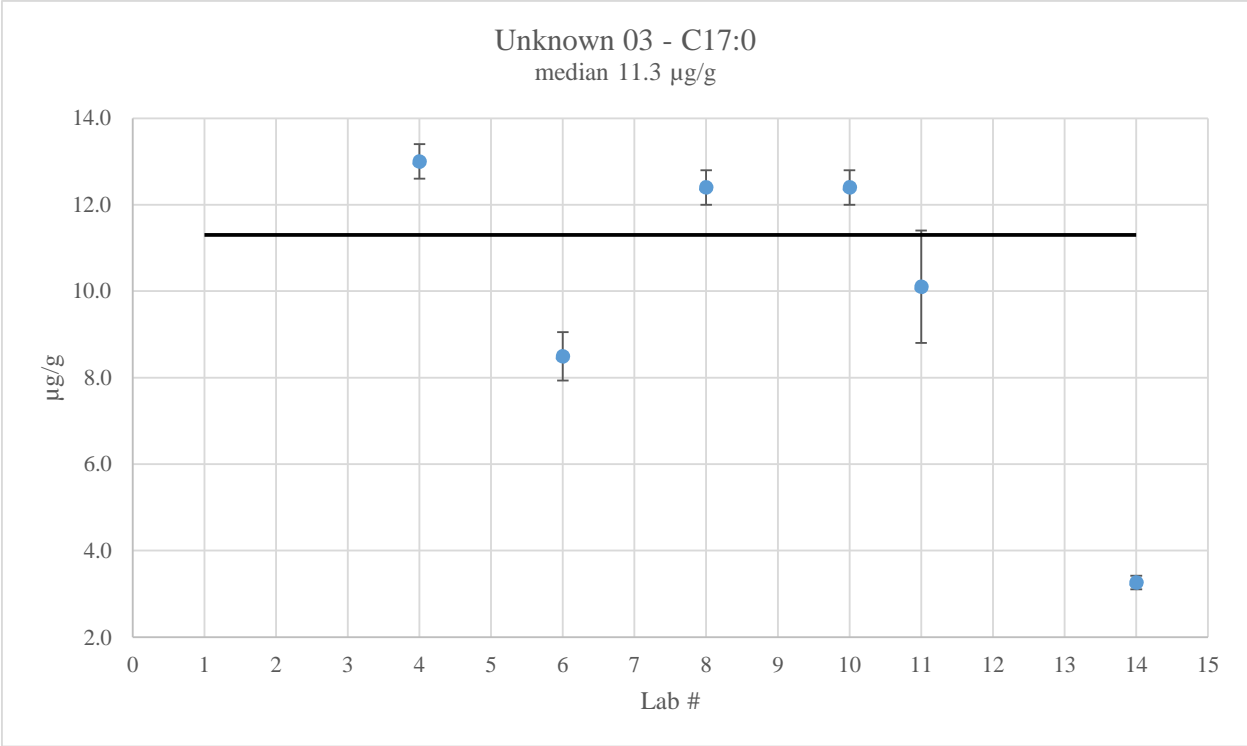


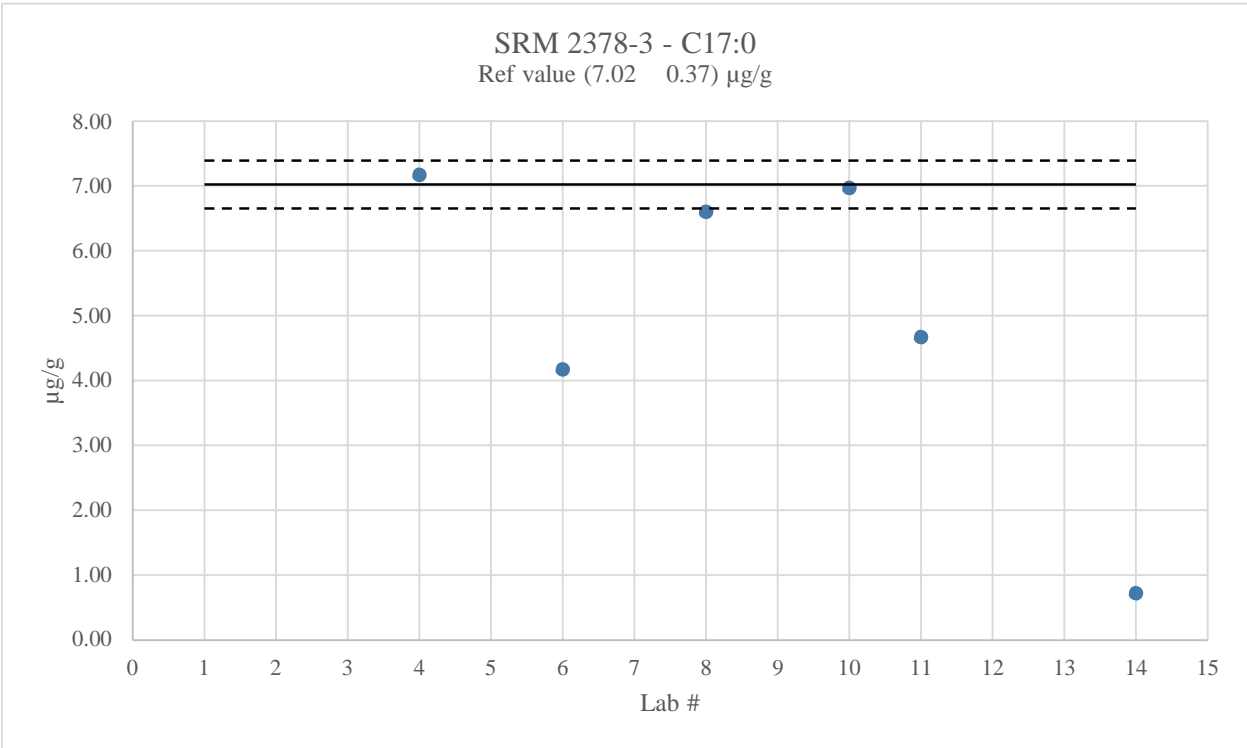
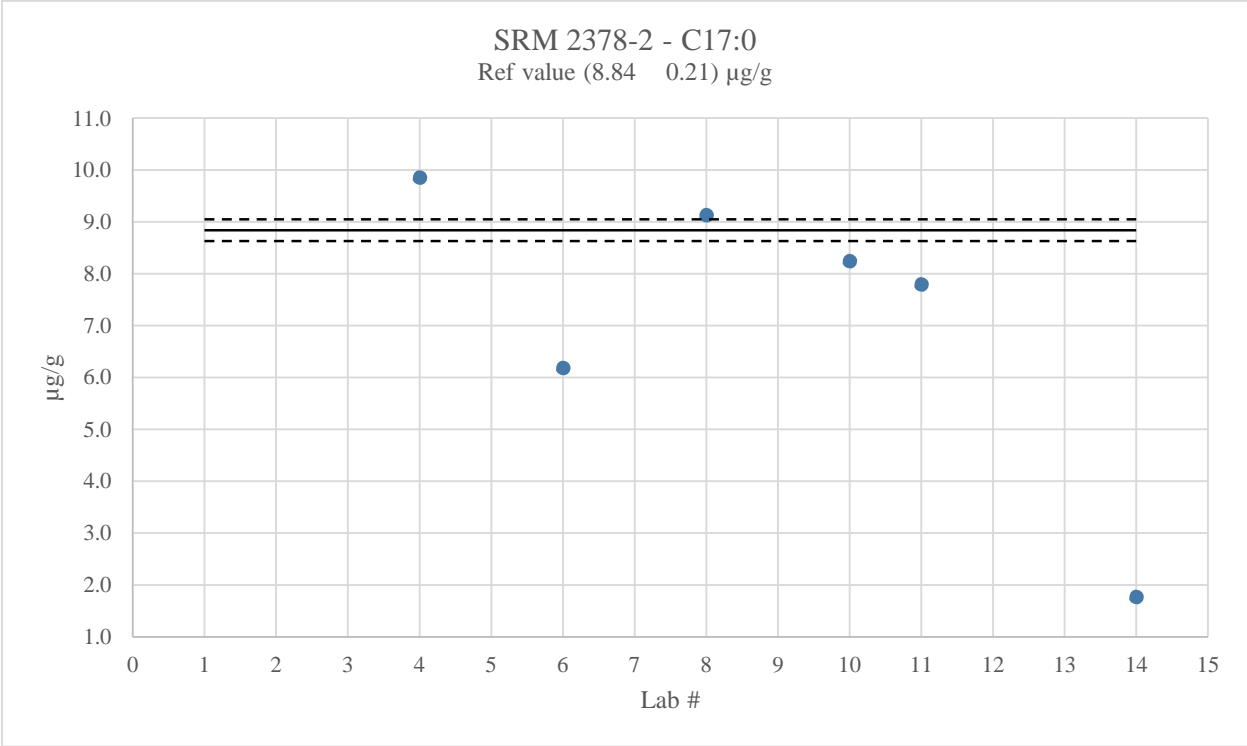
SRM 2378-1 - C15:0
Ref value (5.14 0.16) $\mu\text{g/g}$



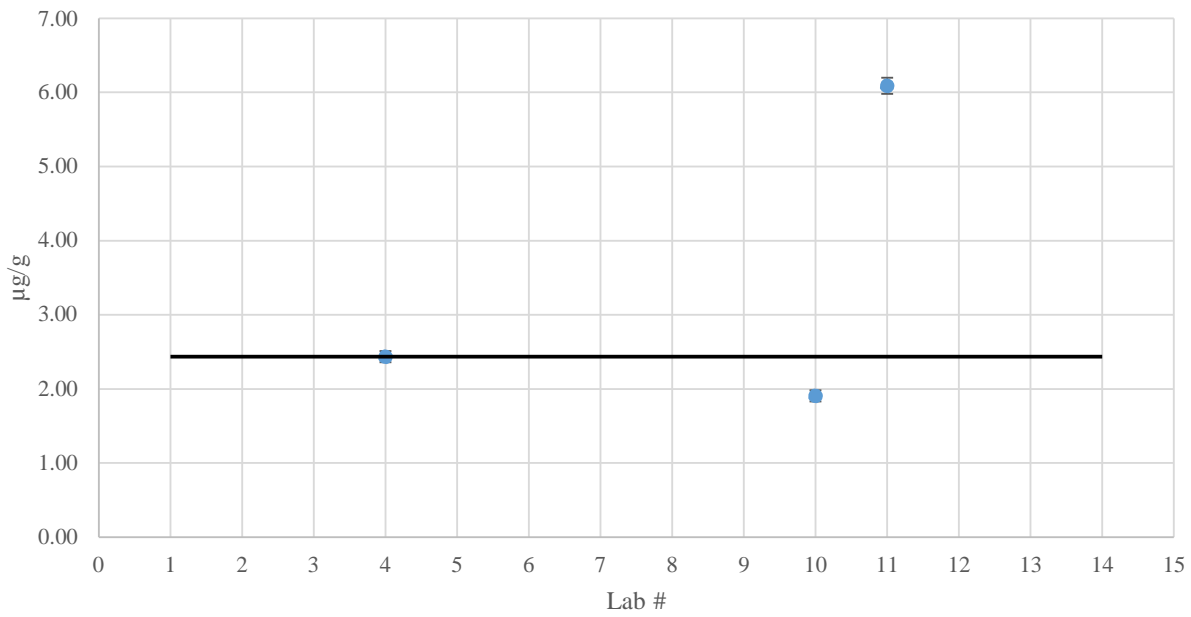




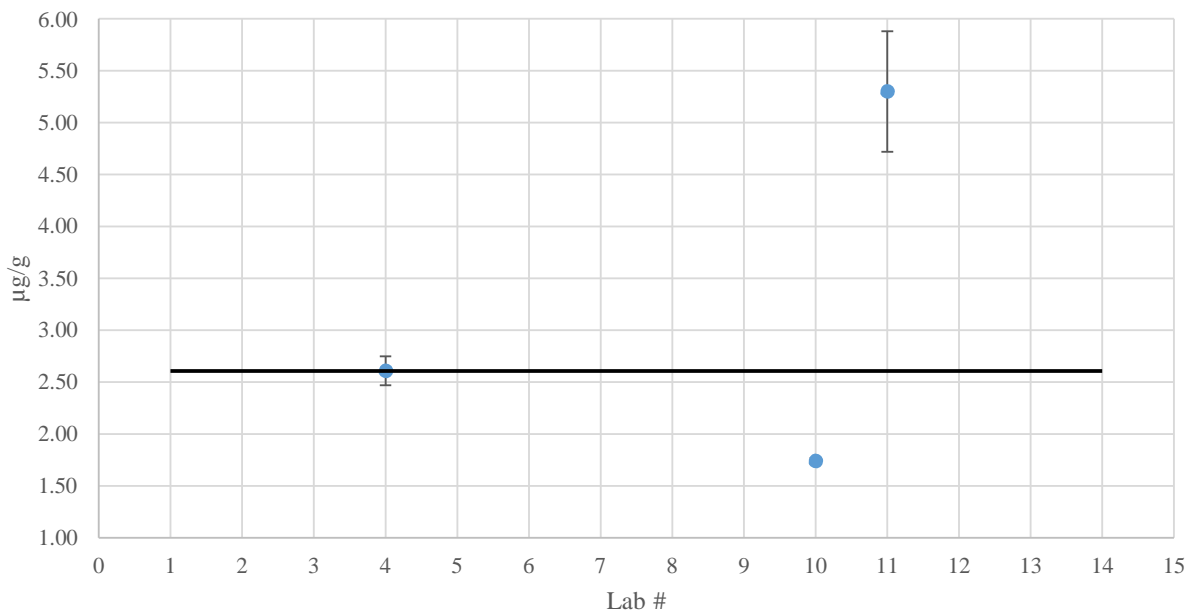


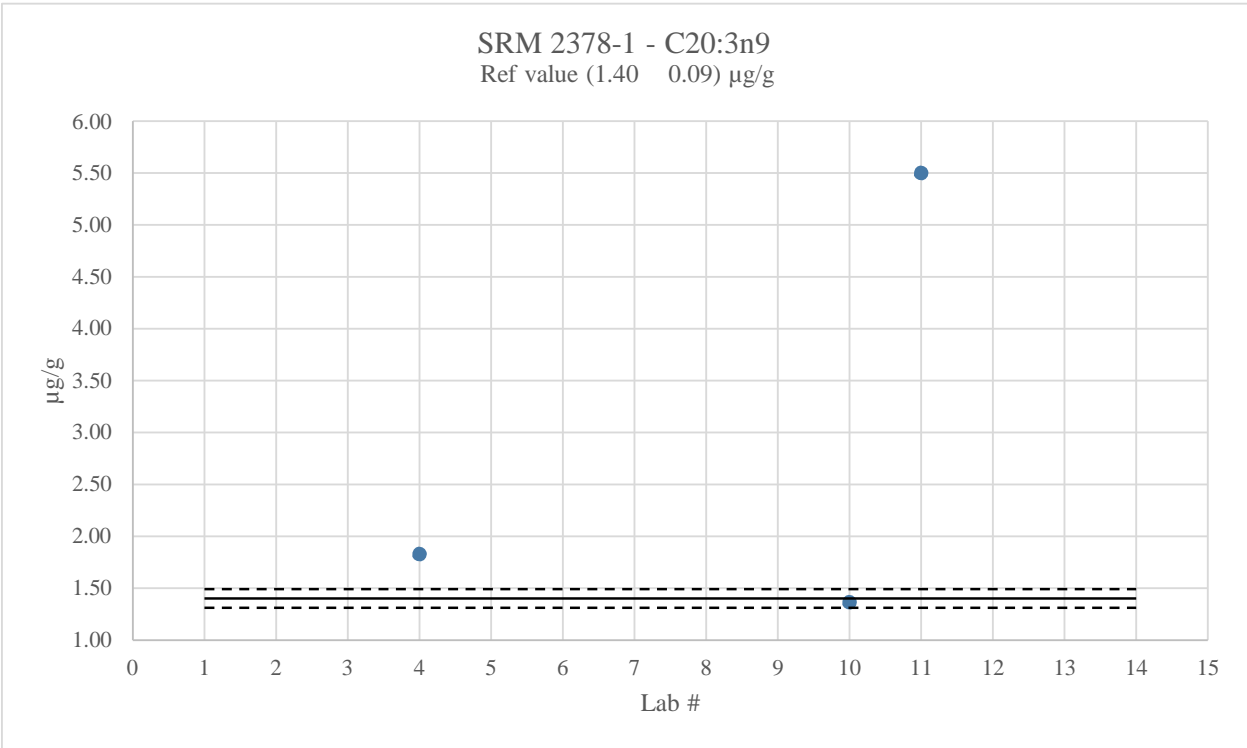
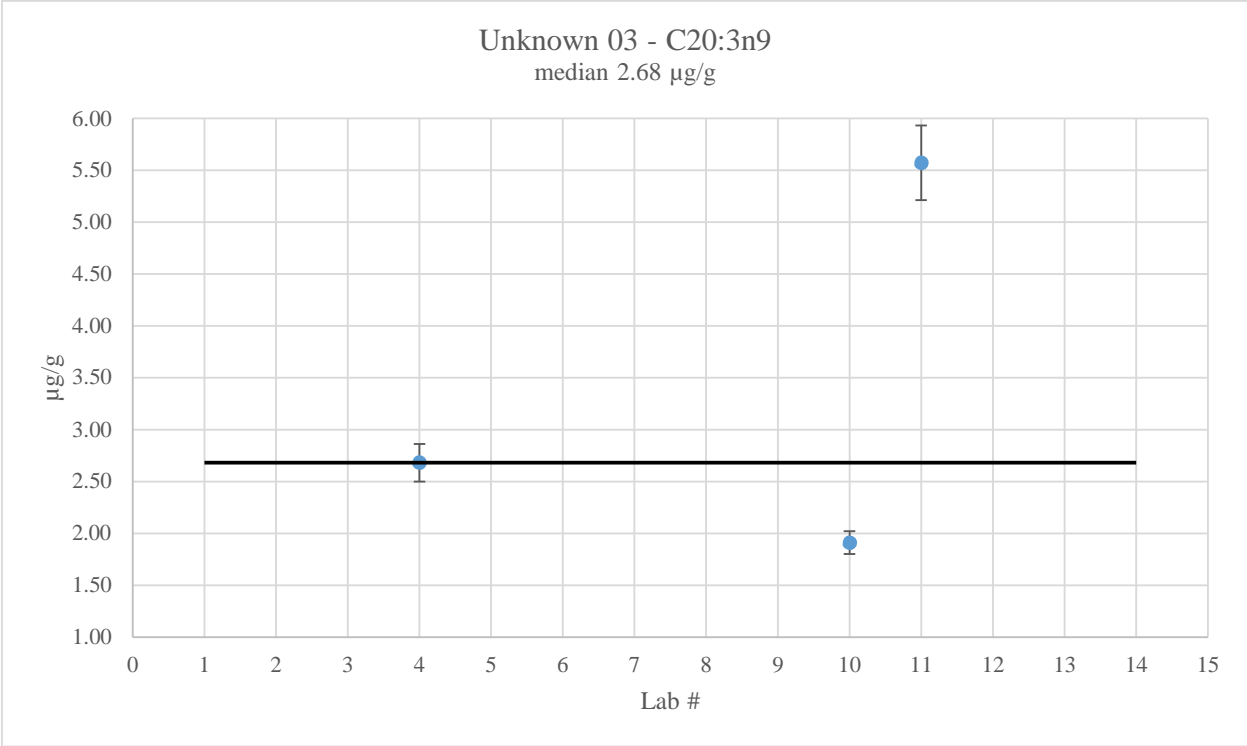


Unknown 01 - C20:3n9
median 2.44 $\mu\text{g/g}$

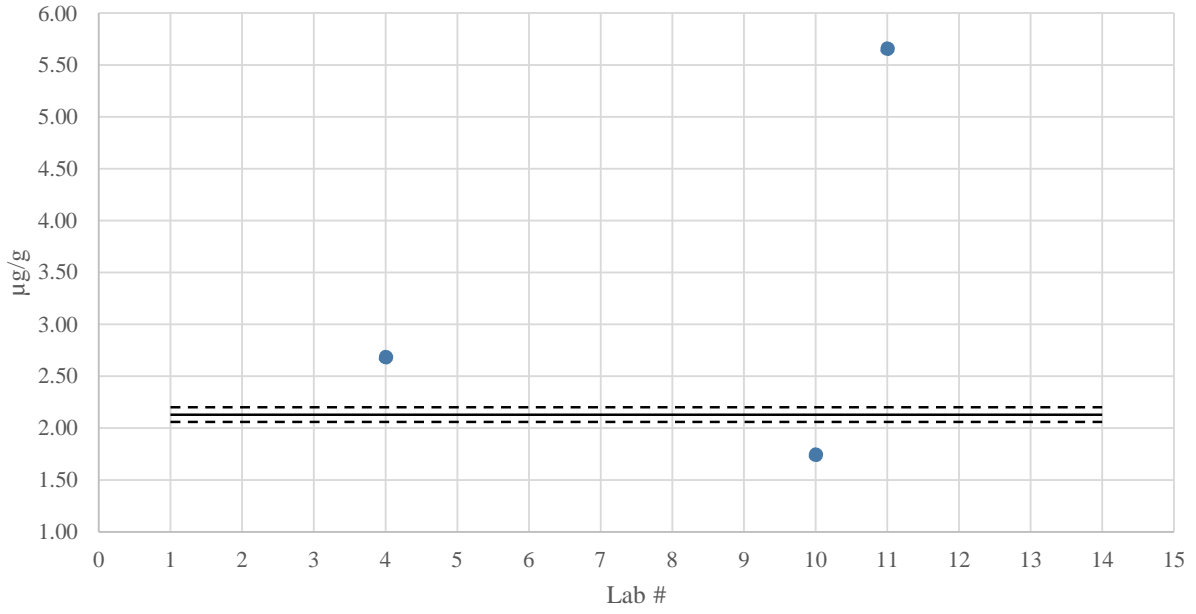


Unknown 02 - C20:3n9
median 2.61 $\mu\text{g/g}$

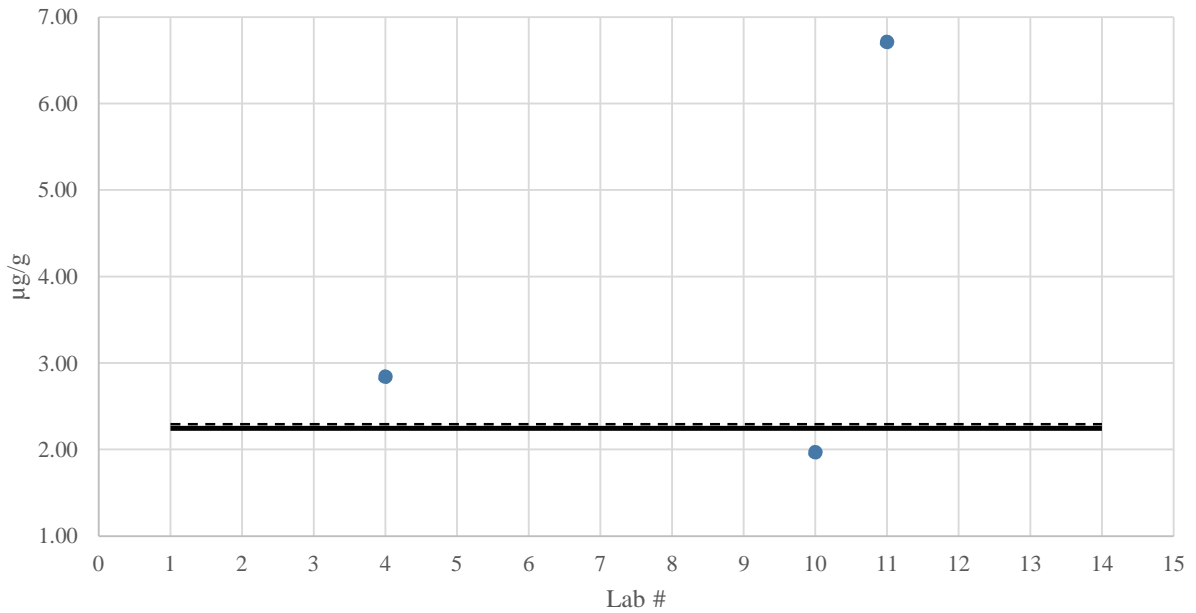




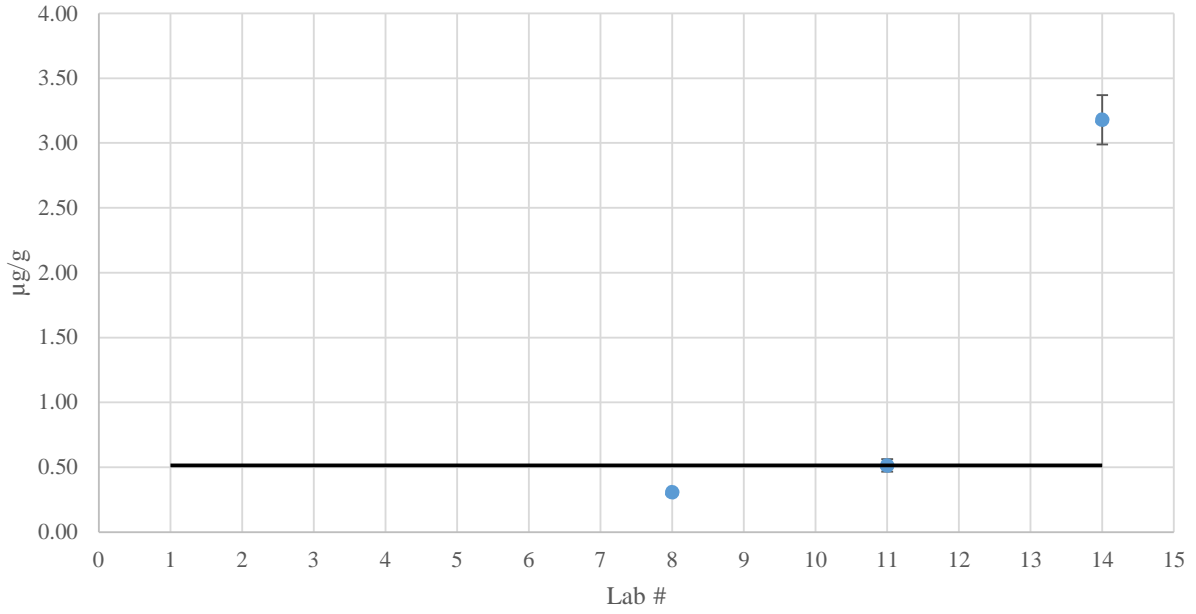
SRM 2378-2 - C20:3n9
Ref value (2.13 0.07) $\mu\text{g/g}$



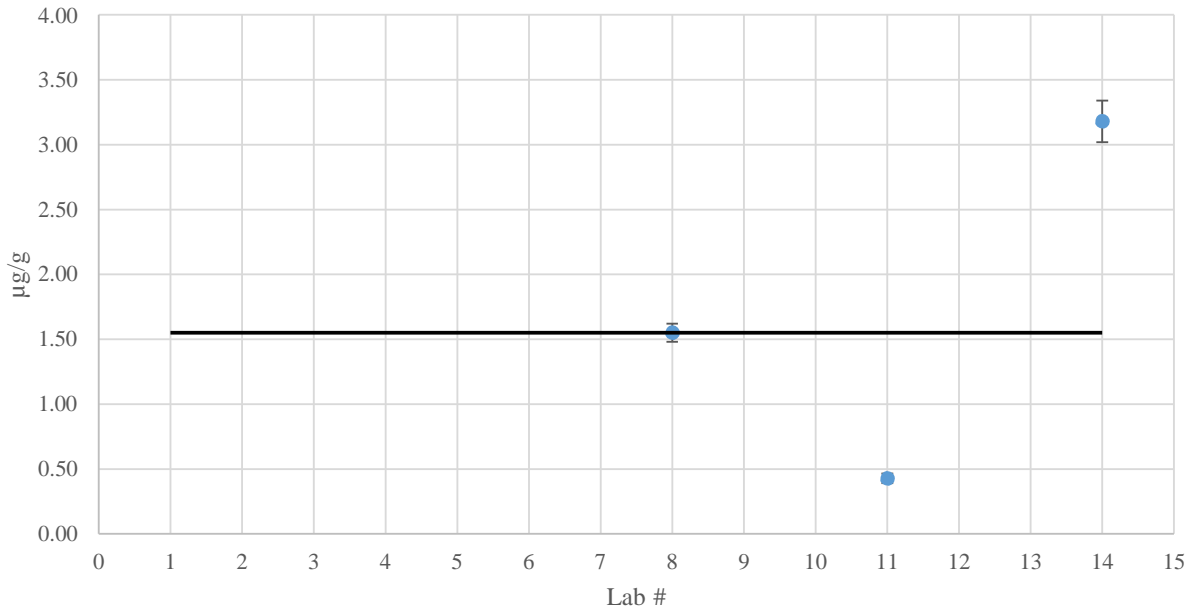
SRM 2378-3 - C20:3n9
Ref value (2.26 0.03) $\mu\text{g/g}$



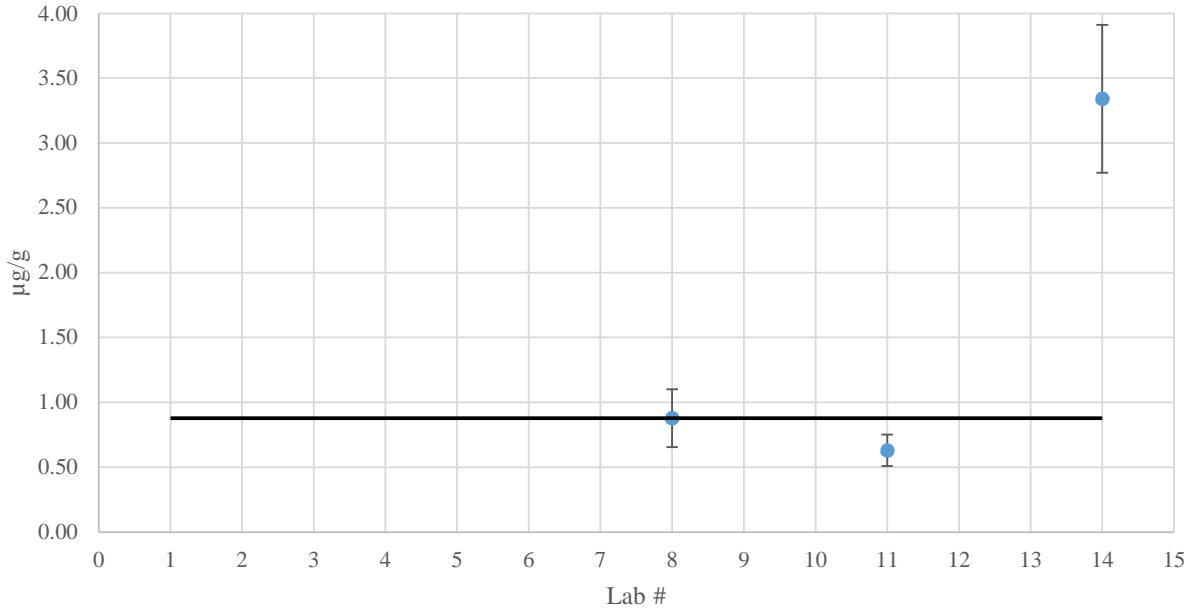
Unknown 01 - C21:0
median 0.515 $\mu\text{g/g}$



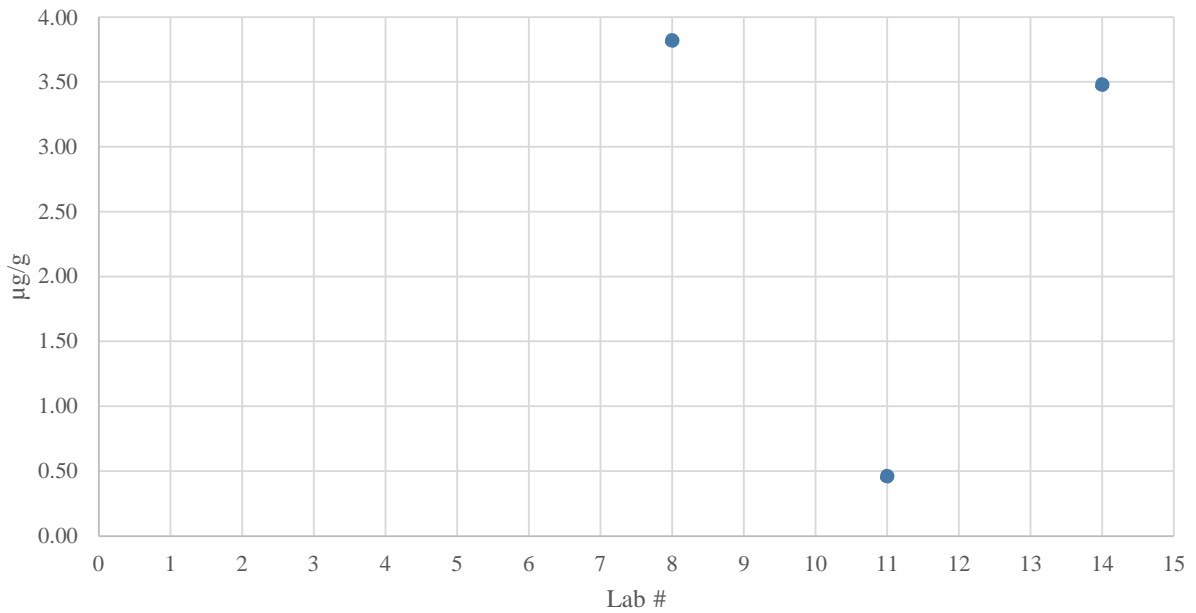
Unknown 02 - C21:0
median 1.55 $\mu\text{g/g}$



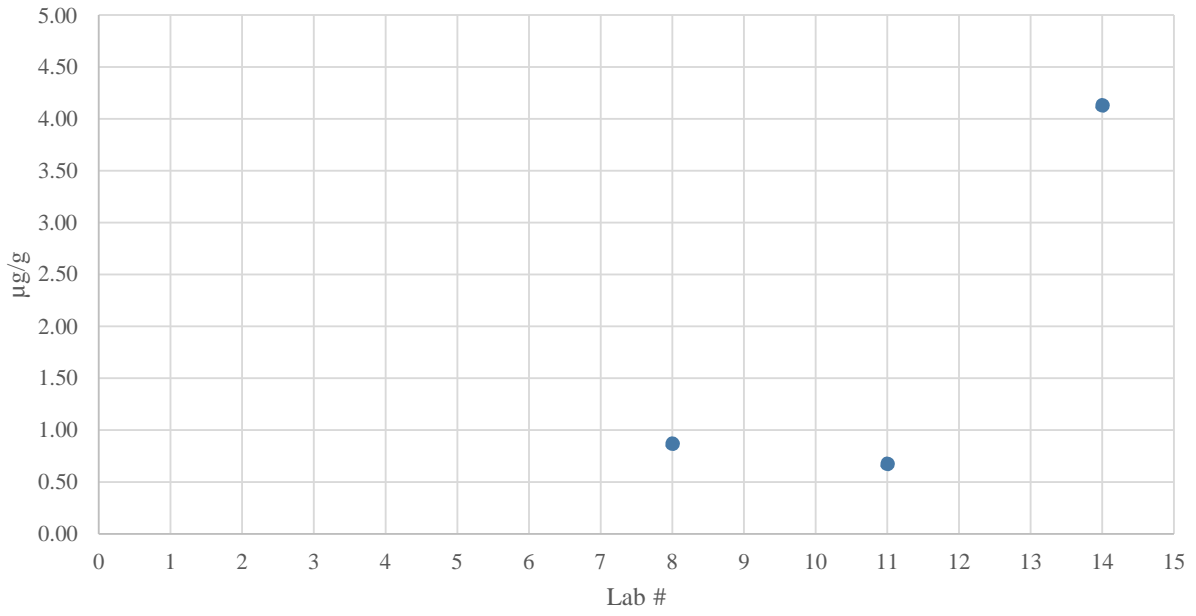
Unknown 03 - C21:0
median 0.877 $\mu\text{g/g}$



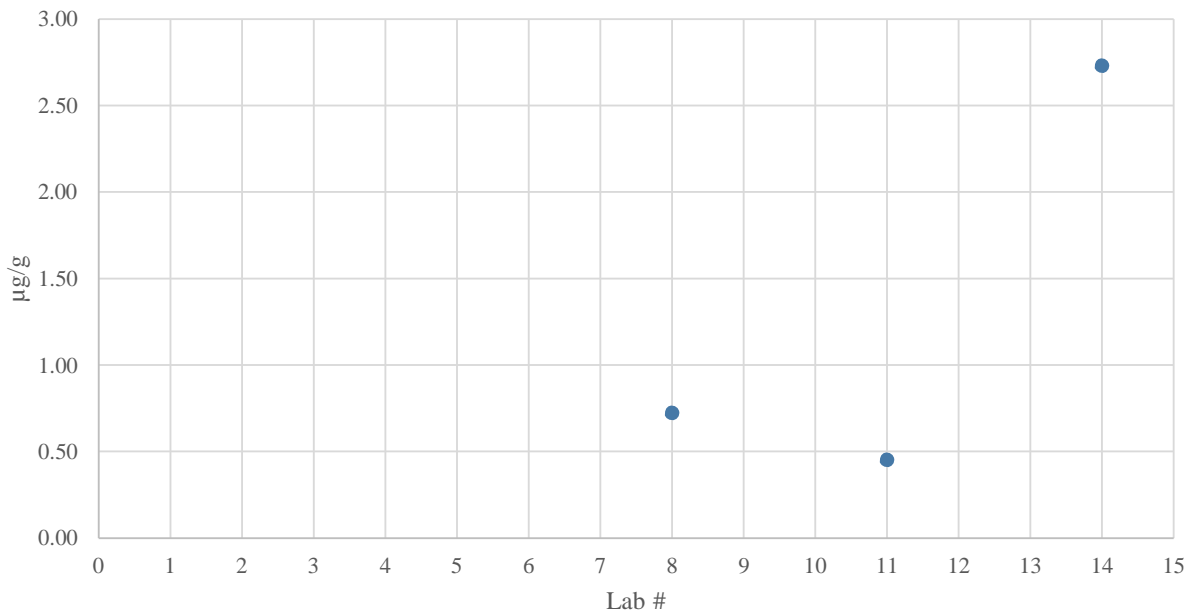
SRM 2378-1 - C21:0
No ref value



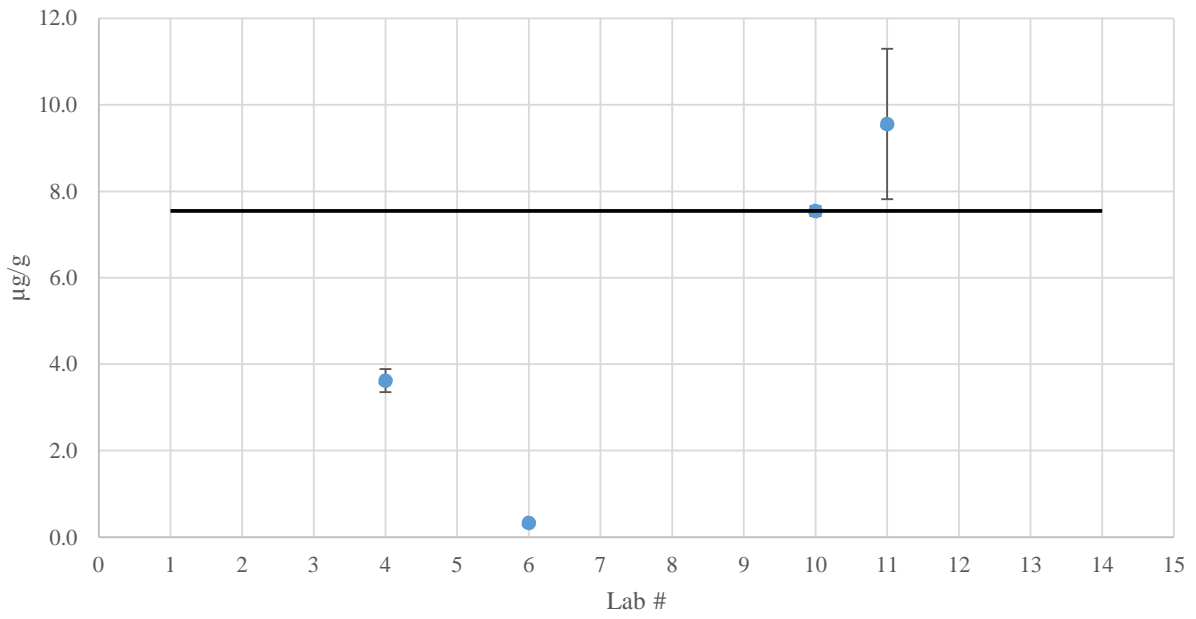
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No ref value



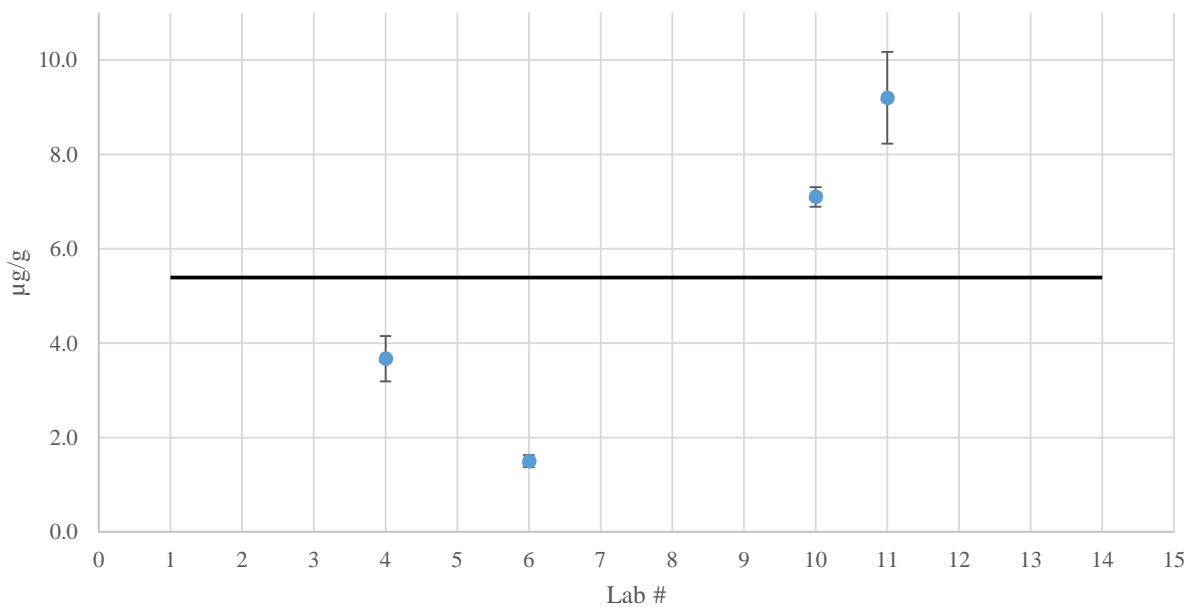
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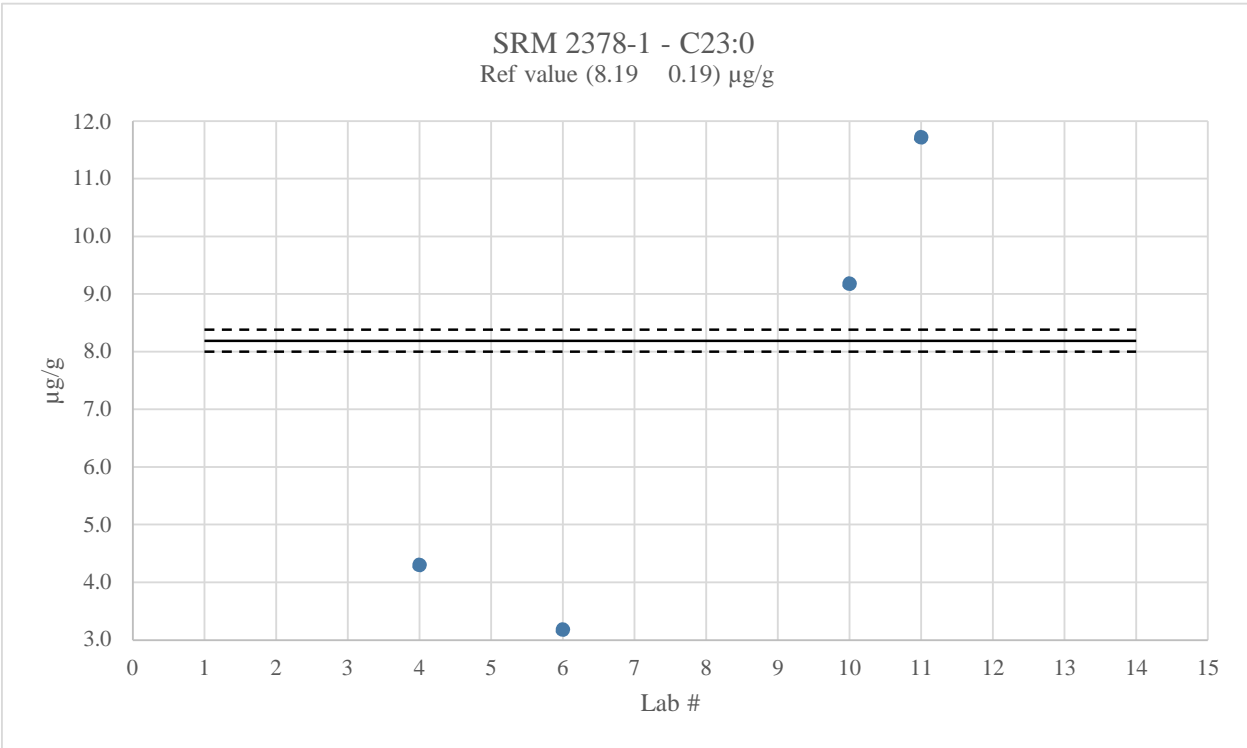
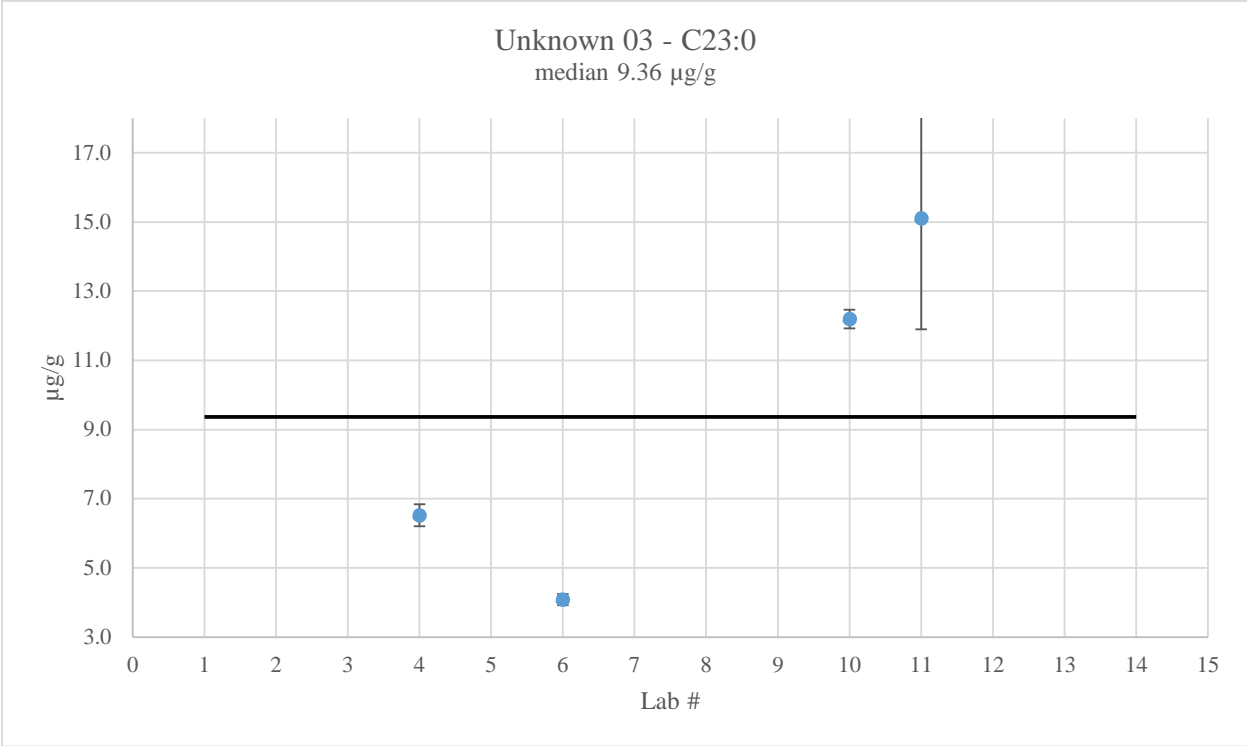


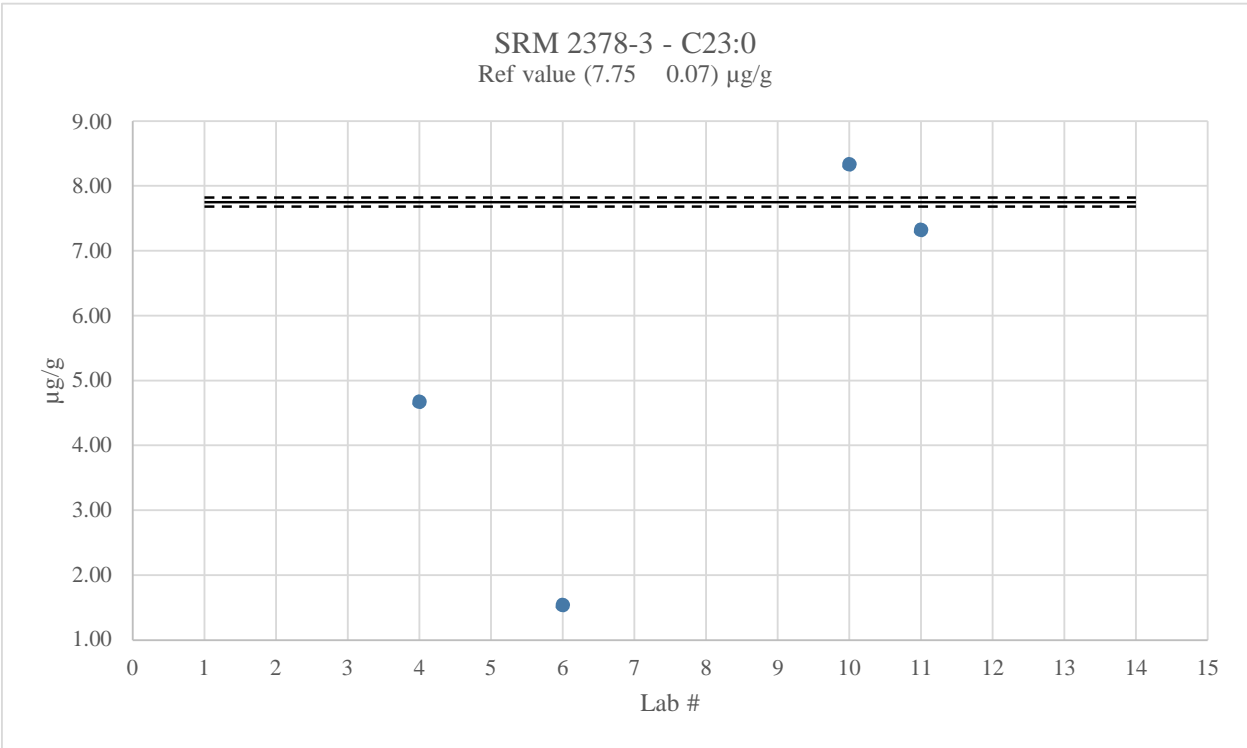
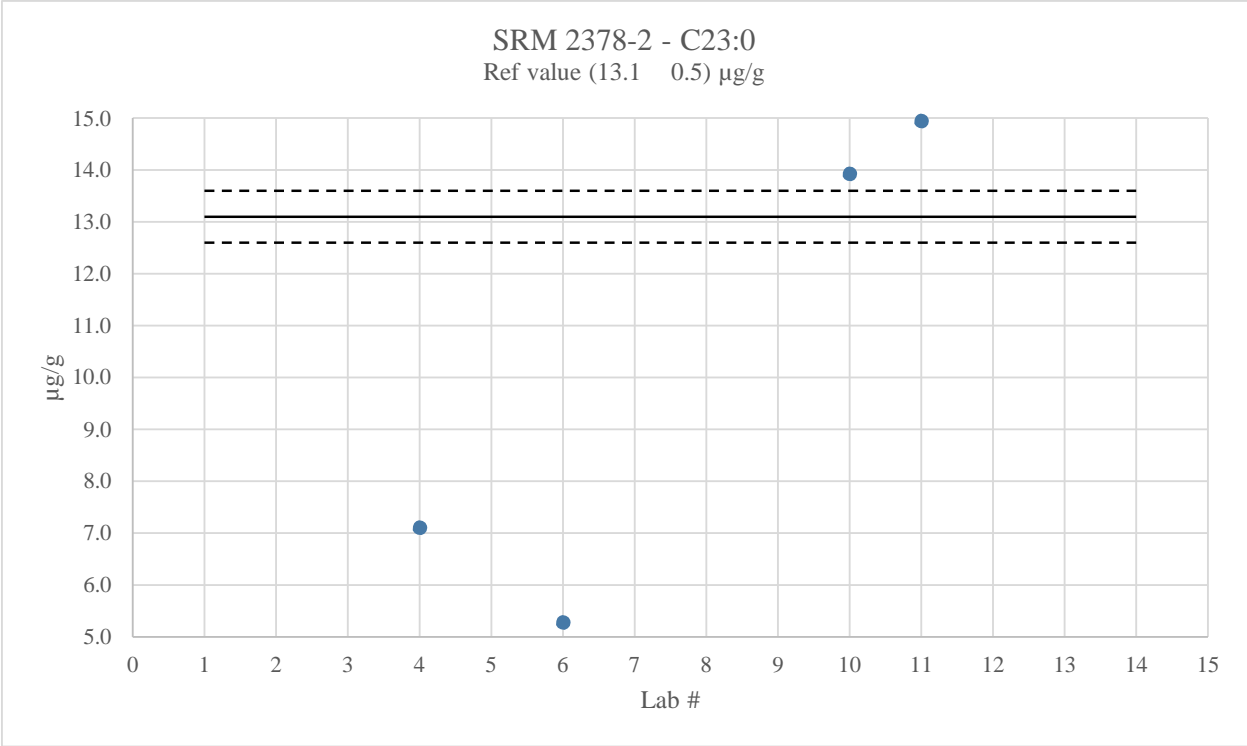
Unknown 01 - C23:0
median 7.54 $\mu\text{g/g}$



Unknown 02 - C23:0
median 5.39 $\mu\text{g/g}$







Appendix C.

Participants in the second interlaboratory analytical comparison study of total fatty acid concentrations in human serum (alphabetical order unrelated to the laboratory numbering in this report)

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Appendix D.

Revised set of data received from lab 8 on September 8, 2015 following an initial review of the interlaboratory data. They found an error in the concentration of the surrogate (d_{31} C16:0) used for recovery corrections. These data used C22:1n9 for the recovery corrections instead of d_{31} C16:0 which they suspect did not go completely into solution. Table numbers refer to the tables shown in this report.

Lab 8 Revised data for Fatty Acid Mass Fractions in Human Serum (µg/g) Exercise 2												
	Table 2			Table 4			Table 6			Table 8	Table 10	Table 12
	Unknown 1			Unknown 2			Unknown 3			SRM 2378		
Code	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	2378-1	2378-2	2378-3
C14:0	11.0	0.3	3.12%	15.9	0.5	2.97%	40.4	1.7	4.20%	43.0	29.7	30.0
C14:1n5	0.504	0.070	13.98%	1.15	0.04	3.53%	2.58	0.10	3.98%	2.57	1.88	2.10
C16:0	487	19	3.83%	481	6	1.21%	778	32	4.15%	734	678	540
C16:1n7	29.0	1.0	3.56%	43.3	1.5	3.37%	40.2	1.6	4.09%	51.8	62.3	39.2
C18:0	174	7	4.12%	166	4	2.35%	274	10	3.71%	216	222	178
C18:1n7	30.5	1.9	6.25%	28.6	0.4	1.38%	30.4	1.4	4.73%	36.2	35.4	26.5
C18:1n9	449	16	3.65%	430	7	1.51%	638	24	3.70%	599	747	500
C18:2n6	769	30	3.96%	708	9	1.28%	916	36	3.95%	898	1077	767
C18:3n3	9.13	0.33	3.63%	13.1	0.6	4.32%	16.1	0.6	3.56%	26.5	26.2	12.9
C18:3n6	5.64	0.26	4.58%	9.99	0.39	3.94%	18.0	0.6	3.49%	11.4	20.9	12.7
C20:0	0.620	0.026	4.12%	0.715	0.029	4.02%	1.16	0.03	2.24%	2.04	1.19	1.61
C20:1n9	3.04	0.36	11.78%	2.03	0.26	12.94%	2.59	0.10	4.04%	3.99	3.24	3.38
C20:2n6	6.15	0.43	6.95%	5.77	0.39	6.73%	6.97	0.34	4.92%	4.90	5.81	4.24
C20:3n6	29.7	0.9	2.99%	37.5	0.7	1.80%	58.4	2.9	4.92%	29.5	52.1	28.1
C20:4n6	215	10	4.71%	159	4	2.74%	257	8	3.30%	225	284	239
C20:5n3	6.29	0.24	3.82%	34.26	1.27	3.70%	18.7	0.7	3.56%	83.1	18.8	15.1
C22:0	0.288	0.032	11.25%	0.287	0.028	9.85%	0.479	0.038	7.93%	1.03	0.618	1.26
C22:1n9	NA			NA			NA			NA	NA	NA
C22:4n6	4.92	0.31	6.35%	4.28	0.23	5.40%	6.03	0.40	6.62%	4.09	6.06	5.03
C22:5n3	7.07	0.25	3.56%	16.47	0.74	4.47%	12.5	0.1	0.71%	16.5	13.2	8.0
C22:5n6	3.82	0.19	4.98%	2.66	0.22	8.38%	6.43	0.25	3.81%	2.71	4.7	4.2
C22:6n3	38.8	1.9	4.94%	61.4	2.6	4.26%	80.7	2.5	3.15%	100	48.1	45.6
C24:0	0.268	0.054	20.06%	0.270	0.060	22.13%	0.575	0.008	1.37%	0.959	0.685	1.05
C24:1n9	<LOD			<LOD			<LOD			<LOD	<LOD	<LOD
List any additional information such as known coelutions or results for additional fatty acids below:												
C8:0												
C10:0												
C10:1												
C12:0	1.12	0.07	6.24%	1.37	0.06	4.19%	3.85	0.19	4.90%	6.63	2.59	5.86
C12:1n1												
C12:1n7												
C14:2												
C15:0	2.70	0.11	4.13%	3.15	0.19	5.91%	8.77	0.28	3.15%	5.12	6.40	4.23
C16:1n9												
C16:2												
C17:0	4.78	0.21	4.43%	5.38	0.28	5.20%	9.55	0.35	3.67%	5.97	7.03	5.08
C17:1												
C18:1n9t												
9c,11t-CLA	2.35	0.08	3.27%	3.16	0.15	4.78%	6.78	0.28	4.09%	2.17	3.83	2.65
C18:4n3	0.174	0.038	21.87%	0.605	0.045	7.36%	0.833	0.064	7.71%	2.97	1.43	0.87
C19:0	0.347	0.028	8.12%	0.376	0.005	1.40%	0.692	0.016	2.32%	0.666	0.484	0.506
C20:3n3	0.378	0.070	18.41%	0.532	0.045	8.52%	0.830	0.089	10.69%	0.482	0.514	0.357
C20:3n9												
C20:4n3	0.536	0.063	11.76%	1.83	0.12	6.77%	2.18	0.03	1.33%	1.99	2.39	0.91
C21:0	0.237	0.005	2.17%	1.19	0.05	4.55%	0.676	0.017	2.56%	2.94	0.67	0.56
C22:2n6												
C23:0												
C26:0												
C26:1												
PhA												
PtA												
density (g/mL)	1.03			1.03			1.03			1.03	1.03	1.03

Lab 8 Revised data for Fatty Acid Concentrations in Human Serum (µM) Exercise 2												
Code	Table 3			Table 5			Table 7			Table 9	Table 11	Table 13
	mean	stdev	rsd	mean	stdev	rsd	mean	stdev	rsd	2378-1	SRM 2378	2378-3
C14:0	47.4	1.5	3.12%	68.7	2.0	2.97%	174.4	7.3	4.20%	186	128	130
C14:1n5	2.29	0.32	13.98%	5.24	0.19	3.53%	11.73	0.47	3.98%	11.7	8.5	9.6
C16:0	1,958	75	3.83%	1,930	23	1.21%	3,124	130	4.15%	2947	2723	2171
C16:1n7	117	4	3.56%	175	6	3.37%	163	7	4.09%	210	252	159
C18:0	629	26	4.12%	601	14	2.35%	993	37	3.71%	782	803	645
C18:1n7	111	7	6.25%	104	1	1.38%	111	5	4.73%	132	129	97
C18:1n9	1,636	60	3.65%	1,569	24	1.51%	2,327	86	3.70%	2186	2722	1824
C18:2n6	2,824	112	3.96%	2,599	33	1.28%	3,364	133	3.95%	3298	3955	2816
C18:3n3	33.8	1.2	3.63%	48.6	2.1	4.32%	59.5	2.1	3.56%	97.9	96.8	47.6
C18:3n6	20.9	1.0	4.58%	37.0	1.5	3.94%	66.5	2.3	3.49%	42.3	77.3	46.8
C20:0	2.04	0.08	4.12%	2.36	0.09	4.02%	3.83	0.09	2.24%	6.73	3.93	5.32
C20:1n9	10.1	1.2	11.78%	6.7	0.9	12.94%	8.6	0.3	4.04%	13.2	10.7	11.2
C20:2n6	20.5	1.4	6.95%	19.2	1.3	6.73%	23.3	1.1	4.92%	16.4	19.4	14.1
C20:3n6	99.7	3.0	2.99%	126.0	2.3	1.80%	196.2	9.7	4.92%	99.0	175	94.4
C20:4n6	727	34	4.71%	538	15	2.74%	869	29	3.30%	761	961	807
C20:5n3	21.4	0.8	3.82%	116.6	4.3	3.70%	63.6	2.3	3.56%	283	63.8	51.5
C22:0	0.87	0.10	11.25%	0.87	0.09	9.85%	1.45	0.11	7.93%	3.11	1.87	3.81
C22:1n9	NA			NA			NA			NA	NA	NA
C22:4n6	15.2	1.0	6.35%	13.3	0.7	5.40%	18.7	1.2	6.62%	12.7	18.8	15.6
C22:5n3	22.0	0.8	3.56%	51.3	2.3	4.47%	39.0	0.3	0.71%	51.3	41.2	25.0
C22:5n6	11.9	0.6	4.98%	8.3	0.7	8.38%	20.0	0.8	3.81%	8.44	14.5	13.2
C22:6n3	122	6	4.94%	192	8	4.26%	253	8	3.15%	315	151	143
C24:0	0.75	0.15	20.06%	0.75	0.17	22.13%	1.61	0.02	1.37%	2.68	1.91	2.92
C24:1n9	<LOD			<LOD			<LOD			<LOD	<LOD	<LOD

List any additional information such as known coelutions or results for additional fatty acids below:

C8:0												
C10:0												
C10:1												
C12:0	5.76	0.36	6.24%	7.02	0.29	4.19%	19.80	0.97	4.90%	34.1	13.3	30.1
C12:1n1												
C12:1n7												
C14:2												
C15:0	11.5	0.5	4.13%	13.4	0.8	5.91%	37.2	1.2	3.15%	21.8	27.2	18.0
C16:1n9												
C16:2												
C17:0	18.2	0.8	4.43%	20.5	1.1	5.20%	36.4	1.3	3.67%	22.7	26.8	19.4
C17:1												
C18:1n9t												
9c,11t-CLA	8.65	0.28	3.27%	11.59	0.55	4.78%	24.92	1.02	4.09%	7.95	14.08	9.73
C18:4n3	0.65	0.14	21.87%	2.25	0.17	7.36%	3.10	0.24	7.71%	11.1	5.34	3.22
C19:0	1.20	0.10	8.12%	1.30	0.02	1.40%	2.39	0.06	2.32%	2.30	1.67	1.74
C20:3n3	1.27	0.23	18.41%	1.79	0.15	8.52%	2.79	0.30	10.69%	1.62	1.73	1.20
C20:3n9												
C20:4n3	1.81	0.21	11.76%	6.19	0.42	6.77%	7.36	0.10	1.33%	6.71	8.08	3.07
C21:0	0.75	0.02	2.17%	3.76	0.17	4.55%	2.13	0.05	2.56%	9.27	2.11	1.76
C22:2n6												
C23:0												
C26:0												
C26:1												
PhA												
PtA												
density (g/mL)	1.03			1.03			1.03			1.0	1.03	1.03

