

Newborn Screening Quality Assurance Program

2023 Quality Control Report

In co-sponsorship with Association of Public Health Laboratories (APHL)
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Introduction

AMENDED REPORT This report replaces the 2023 Quality Control Report, Volume 34, No. 1. It adds the previously omitted Lot E2111 statistics for 2nd-tier CAHQC (pages 88-92), and Lot E2213 statistics for 2nd-tier MSUD-PKUQC (pages 97-102).

The NSQAP Quality Control (QC) dried blood spot (DBS) materials provide participants with external controls to assess method performance over time. The controls provide continuity and transcend changes in production lots of routinely used method- or kit-control materials. The external QC materials are intended to supplement the participants' method- or kit-control materials at periodic intervals to allow participants to monitor the long-term stability of their assays. NSQAP QC material is not a replacement for manufacturer kit controls or other daily QC and should not be used for routine analysis. This report contains a summary of the 2023 Set 1 QC data submitted during the first half of the year by state, contract, and private laboratories in the United States; international participants; and manufacturers of screening test products.

QC Material Production

QC specimen lots were provided as 6-month supplies of DBS on filter paper. DBS QC lots were prepared from whole blood of 50% hematocrit. The materials were enriched with predetermined quantities of selected analytes and dispensed in 100 µL aliquots on Grade 903 filter paper (Cytiva (Cardiff, United Kingdom)).

NSQAP provides QC materials for analysis of thyroxine (T4), thyroid-stimulating hormone (TSH), 17 α-hydroxyprogesterone (17OHP), total galactose (TGal), galactose-1-phosphate uridylyltransferase (GALT), immunoreactive trypsinogen (IRT), phenylalanine (Phe), leucine (Leu), methionine (Met), tyrosine (Tyr), valine (Val), citrulline (Cit), alanine (Ala), arginine (Arg), ornithine (Orn), glycine (Gly), succinylacetone (SUAC). The QC pool for Tandem Mass Spectrometry (MSMS1QC) included enrichments for twenty acylcarnitines - free carnitine (C0), acetylcarnitine (C2), propionylcarnitine (C3), malonylcarnitine (C3DC), butyrylcarnitine (C4), hydroxybutyrylcarnitine (C4OH), isovalerylcarnitine (C5), tiglylcarnitine (C5:1), glutarylcarnitine (C5DC), hydroxyisovalerylcarnitine (C5OH), hexanoylcarnitine (C6), octanoylcarnitine (C8), decanoylcarnitine (C10), dodecanoylcarnitine (C12), myristoylcarnitine (C14), tetradecenoylcarnitine (C14:1), palmitoylcarnitine (C16), hydroxypalmitoylcarnitine (C16OH), stearoylcarnitine (C18), hydroxystearoylcarnitine (C18OH), 20:0- 22:0- 24:0- and 26:0-lysophosphatidylcholine for the detection of X-linked Adrenoleukodystrophy (ALD), creatine (CRE), guanidinoacetic acid (GUAC), creatinine (CRN). We also provided materials for galactocerebrosidase (GALC), acid α-glucosidase (GAA), α-L-iduronidase (IDUA), α-galactosidase (GLA), β-glucocerebrosidase (ABG), and acid sphingomyelinase (ASM) for the detection of Lysosomal Storage Disorder (LSD).

T4, TSH, 17OHP and TGal, GALT consisted of DBS materials from three lots per analyte, with each lot containing a different concentration of analyte. The shipment for IRT, TGal, amino acids, SUAC, acylcarnitines, ALD, GAMT, and LSD consisted of DBS materials from four lots.

NSQAP also distributed certified QC materials for newborn screening analytes and disorders designed for second-tier testing by tandem mass spectrometry (MS/MS). These programs include Second-tier Congenital Adrenal Hyperplasia (CAHQC) by LC-MS/MS for the analytes 17 α -hydroxyprogesterone (17OHP2), 4-androstenedione (4AD2), cortisol (CORT2), 11-deoxycortisol (11D2), and 21-deoxycortisol (21D2); Second-tier Maple Syrup Urine Disease and Phenylketonuria (MSUD-PKUQC) by LC-MS/MS for the analytes alioisoleucine (ALE2), isoleucine (ILE2), leucine (LEU2), phenylalanine (PHE2), tyrosine (TYR2), and valine (VAL2); Second-tier Methylmalonic/Propionic Acidemia and QC Material Production (cont.)

Homocystinuria (MMA-tHCY) by LC-MS/MS for the analytes malonic acid (MA2), methylmalonic acid (MMA2), ethylmalonic acid (EMA2), 2-methylcitric acid (MCA2), and total homocysteine (tHCY2). The shipment for these analytes consisted of DBS materials from four or five lots.

QC Material Distribution

On January 10, 2023, we distributed DBS quality control (QC) materials to 531 participating laboratories.

QC Data Reporting Requirements

Participants used the NSQAP Participant Portal at <https://nbs.dynamics365portals.us/> to report results. Required input for QC data reporting included the following 1) analyte kit or method, 2) results of duplicate sample analysis from five independent runs in the analytic units and decimal places requested, and 3) ten data points for each lot and analyte.

The following criteria are required for successful data entry. Refer to the QC Data Entry Instructions posted in the Portal for information on how to correctly submit QC data.

The majority of errors occurred when the “upload” option was chosen and the pre-filled data entry template was used to submit results. For successful data entry:

- **Fill in ALL the required data on the pre-filled template (Lab code number, method, method code, analyte, analyte code, analyte abbreviation, Lot Numbers, and replicate data for each lot)**
- **When entering the Lot Number, only use the 5-digit alpha numeric, not the full number stamped on the card. (Example: A2005 – one letter followed by four numbers)**
- **Enter all results to the correct decimal point per analyte**
- **Do not create exact duplicate rows of data**
- **Assure that the method you are reporting is applicable to the analyte you are reporting**
- **Convert results to the requested units where applicable**

To avoid errors with the pre-filled template, use the manual entry option to enter all QC results.

Participant Results

For the Set 1 QC materials, we compiled the participant results from five analytic runs from each QC lot and calculated mean values and standard deviations (SD). Data values outside 4SD limits were reviewed, and if considered to be “blunders”, removed from the data set. For statistical analysis, we could not include qualitative data, data submitted in unidentified units, or data from less than five analytic runs per specimen lot per analyte.

To ensure that all results are appropriately reported, participants must convert their results to the requested units prior to data entry. For GALT analysis, where no conversion factor exists between units of U/g Hb and other reportable units, we included a separate table to provide participants with peer-group statistics. For LSDQC analysis, where mean activities differ based on method, we provided separate tables if sufficient data was submitted.

The reported QC data are summarized in tables on pages 4—102. Each analyte summary table provides the following:

- The name of the analyte, analyte abbreviation and reportable units of measure.
- Method – the reported method for which peer group statistics are provided
- Total mean - The average of the total number of data points reported by laboratories for a given lot within the specified method

- Number of labs - The total number of laboratories reporting analyte data for a given lot level within the specified method group. Note: Methods with less than five laboratories reporting data were not included in the tables.
- Total N – The total number of data points reported by laboratories reporting analyte data for a given lot within the specified method.
- Total SD: The standard deviation of data points reported by laboratories for a given lot within the specified method
- Intralaboratory SD: The within lab standard deviation of data points reported by laboratories for a given lot within the specified method.
- Interlaboratory SD: The between lab standard deviation of data points reported by laboratories for a given lot within the specified method

Thyroxine (T4) (µg/dL serum)

Analyte: Thyroxine (T4) - Lot A2200 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal T4 PerkinElmer	8	74	1.8	0.6	0.3	0.5
DELFI [®] A Neonatal T4 PerkinElmer	7	70	2.1	0.9	0.5	0.7
GSP [®] T4 Neonatal PerkinElmer	21	169	1.7	0.5	0.2	0.5

Analyte: Thyroxine (T4) - Lot B2200 - Enrichment 7

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal T4 PerkinElmer	8	74	6.6	1.5	0.6	1.3
DELFI [®] A Neonatal T4 PerkinElmer	7	70	7.1	1.3	0.8	1.0
GSP [®] T4 Neonatal PerkinElmer	22	212	6.5	1.7	0.9	1.4

Analyte: Thyroxine (T4) - Lot C2200 - Enrichment 11

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal T4 PerkinElmer	8	74	10.0	2.1	0.7	2.0
DELFI [®] A Neonatal T4 PerkinElmer	7	70	10.6	1.7	1.1	1.3
GSP [®] T4 Neonatal PerkinElmer	22	212	10.8	2.6	1.2	2.3

Thyroid-Stimulating Hormone (TSH) (μ IU/mL serum)

Analyte: Thyroid-Stimulating Hormone (TSH) - Lot A2201 - Enrichment 25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal hTSH PerkinElmer	43	407	32.5	6.1	2.4	5.6
DELFI [®] A Neonatal TSH PerkinElmer	46	444	27.5	8.9	2.9	8.5
ZenTech ELISA Neonatal TSH	8	100	26.6	8.6	4.2	7.6
GSP [®] hTSH Neonatal PerkinElmer	85	832	30.7	7.0	2.6	6.5
Neonatal TSH LabSystems	13	130	30.7	9.5	4.7	8.3
DiaSorin Immunoassay TSH	6	59	29.4	5.8	4.0	4.2

Analyte: Thyroid-Stimulating Hormone (TSH) - Lot B2201 - Enrichment 40

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal hTSH PerkinElmer	43	408	48.9	10.2	4.4	9.3
DELFI [®] A Neonatal TSH PerkinElmer	46	444	41.3	13.8	5.1	12.8
ZenTech ELISA Neonatal TSH	8	100	39.4	15.9	8.5	13.4
GSP [®] hTSH Neonatal PerkinElmer	85	831	46.8	11.0	4.3	10.1
Neonatal TSH LabSystems	13	130	46.5	16.7	9.0	14.1
DiaSorin Immunoassay TSH	6	59	44.1	8.1	5.6	5.8

Analyte: Thyroid-Stimulating Hormone (TSH) - Lot C2201 - Enrichment 80

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal hTSH PerkinElmer	43	408	98.9	20.2	7.4	18.8
DELFI [®] A Neonatal TSH PerkinElmer	46	444	80.5	25.8	6.8	24.9
ZenTech ELISA Neonatal TSH	8	100	88.0	31.1	14.4	27.6
GSP [®] hTSH Neonatal PerkinElmer	85	832	96.6	22.6	8.1	21.1
Neonatal TSH LabSystems	13	130	90.3	27.9	9.9	26.1
DiaSorin Immunoassay TSH	6	60	83.9	19.5	13.1	14.4

17 α -Hydroxyprogesterone (17OHP) (ng/mL serum)

Analyte: 17 α -Hydroxyprogesterone (17OHP) - Lot A2105 - Enrichment 25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal 17OHP PerkinElmer	36	350	23.5	5.2	2.4	4.7
DELFI [®] A Neonatal 17OHP PerkinElmer	28	280	22.8	8.5	2.6	8.1
ZenTech ELISA Neonatal 17OHP	5	50	23.6	13.1	6.9	11.2
GSP [®] 17OHP Neonatal PerkinElmer	65	638	24.4	4.2	2.4	3.5
Neonatal 17OHP LabSystems	14	140	25.9	5.9	2.3	5.5

Analyte: 17 α -Hydroxyprogesterone (17OHP) - Lot B2105 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal 17OHP PerkinElmer	36	350	50.0	10.5	4.6	9.4
DELFI [®] A Neonatal 17OHP PerkinElmer	28	280	48.8	19.2	5.4	18.5
ZenTech ELISA Neonatal 17OHP	5	50	48.3	13.1	6.3	11.5
GSP [®] 17OHP Neonatal PerkinElmer	65	638	50.5	7.5	3.9	6.4
Neonatal 17OHP LabSystems	14	140	44.4	9.1	3.7	8.3

Analyte: 17 α -Hydroxyprogesterone (17OHP) - Lot C2105 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal 17OHP PerkinElmer	36	350	100.1	23.0	9.8	20.7
DELFI [®] A Neonatal 17OHP PerkinElmer	28	280	99.3	36.4	11.4	34.6
ZenTech ELISA Neonatal 17OHP	5	50	81.4	20.4	11.7	16.7
GSP [®] 17OHP Neonatal PerkinElmer	65	638	98.6	16.0	8.4	13.6
Neonatal 17OHP LabSystems	14	140	83.6	21.9	10.0	19.5

Total Galactose (TGal) (mg/dL blood)

Analyte: Total Galactose (TGal) - Lot A2105 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
ZenTech Neonatal TGal Enzymatic Colorimetric	11	110	5.9	1.8	0.8	1.6
Fluorometric manual TGal - non-kit	8	80	5.5	1.2	0.3	1.2
GSP® TGal Neonatal PerkinElmer	37	368	4.8	0.9	0.5	0.7
Fluorescence TGal Neonatal PerkinElmer	24	238	4.3	1.0	0.6	0.9

Analyte: Total Galactose (TGal) - Lot B2105 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
ZenTech Neonatal TGal Enzymatic Colorimetric	11	110	9.9	2.1	1.1	1.7
Fluorometric manual TGal - non-kit	8	80	9.8	1.1	0.6	0.9
GSP® TGal Neonatal PerkinElmer	37	368	9.3	1.6	0.9	1.3
Fluorescence TGal Neonatal PerkinElmer	24	238	8.7	1.8	1.1	1.5

Analyte: Total Galactose (TGal) - Lot C2105 - Enrichment 30

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
ZenTech Neonatal TGal Enzymatic Colorimetric	11	110	22.1	3.9	1.9	3.3
Fluorometric manual TGal - non-kit	8	79	27.7	4.0	1.0	3.9
GSP® TGal Neonatal PerkinElmer	37	368	29.1	4.6	2.8	3.7
Fluorescence TGal Neonatal PerkinElmer	24	238	24.3	3.7	2.2	3.0

GALT/Galactose-1-phosphate Uridyltransferase (GALT) (U/g Hb)

Analyte: GALT/Galactose-1-phosphate Uridyltransferase (GALT) - Lot A2203 - Mean Activity 1.6

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluorescence GALT Neonatal PerkinElmer, U/g Hb	29	282	1.5	0.5	0.3	0.4
Microplate Reagent Kit Spotcheck® GALT Astoria-Pacific, U/g Hb	7	70	0.7	0.3	0.2	0.2

Analyte: GALT/Galactose-1-phosphate Uridyltransferase (GALT) - Lot B2203 - Mean Activity 4.7

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluorescence GALT Neonatal PerkinElmer, U/g Hb	30	292	4.0	0.8	0.5	0.6
Microplate Reagent Kit Spotcheck® GALT Astoria-Pacific, U/g Hb	7	70	3.1	0.8	0.5	0.7

Analyte: GALT/Galactose-1-phosphate Uridyltransferase (GALT) - Lot C2203 - Mean Activity 11.1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluorescence GALT Neonatal PerkinElmer, U/g Hb	30	292	9.9	1.8	1.1	1.4
Microplate Reagent Kit Spotcheck® GALT Astoria-Pacific, U/g Hb	7	70	7.9	2.1	1.4	1.5

GALT/Galactose-1-phosphate Uridyltransferase (GALT) – Other units

Analyte: GALT/Galactose-1-phosphate Uridyltransferase (GALT) - Lot A2203

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
GSP® GALT Neonatal PerkinElmer, U/dL blood	7	62	0.6	0.9	0.1	0.9

Analyte: GALT/Galactose-1-phosphate Uridyltransferase (GALT) - Lot B2203

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluormetric GALT non-kit, qualitative	5	42	7.7	10.0	1.4	9.9
GSP® GALT Neonatal PerkinElmer, U/dL blood	24	232	4.3	0.9	0.5	0.7

Analyte: GALT/Galactose-1-phosphate Uridyltransferase (GALT) - Lot C2203

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluormetric GALT non-kit, qualitative	5	42	21.8	35.4	3.1	35.3
GSP® GALT Neonatal PerkinElmer, U/dL blood	24	232	19.3	4.0	1.2	3.8

Immunoreactive Trypsinogen (IRT) (ng/mL blood)

Analyte: Immunoreactive Trypsinogen (IRT) - Lot A2209 - Assayed Values 16.8

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal IRT PerkinElmer	32	320	16.5	2.4	1.5	1.9
DELFI [®] A Neonatal IRT	17	170	16.7	4.7	2.5	4.0
FEIA IRT Labsystems	5	50	17.9	7.0	4.8	5.1
GSP [®] IRT Neonatal PerkinElmer, ng/mL blood	55	542	17.3	2.1	1.3	1.7

Analyte: Immunoreactive Trypsinogen (IRT) - Lot B2209 - Assayed Values 66.6

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal IRT PerkinElmer	33	330	63.2	8.4	5.2	6.7
DELFI [®] A Neonatal IRT	18	180	60.3	9.6	5.2	8.1
FEIA IRT Labsystems	5	50	73.1	12.2	8.0	9.3
GSP [®] IRT Neonatal PerkinElmer, ng/mL blood	56	552	65.8	7.4	4.4	6.0

Analyte: Immunoreactive Trypsinogen (IRT) - Lot C2209 - Assayed Values 138.9

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal IRT PerkinElmer	33	330	135.5	17.1	10.1	13.8
DELFI [®] A Neonatal IRT	18	180	131.0	18.6	10.1	15.7
FEIA IRT Labsystems	5	50	152.8	27.2	16.0	21.9
GSP [®] IRT Neonatal PerkinElmer, ng/mL blood	56	552	138.2	14.5	8.3	11.9

Analyte: Immunoreactive Trypsinogen (IRT) - Lot D2209 - Assayed Values 245.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] Neonatal IRT PerkinElmer	33	330	243.5	30.1	18.0	24.1
DELFI [®] Neonatal IRT	18	180	233.4	39.3	21.8	32.7
FEIA IRT Labsystems	5	50	253.2	45.3	22.1	39.6
GSP [®] IRT Neonatal PerkinElmer, ng/mL blood	56	552	254.2	32.5	20.3	25.4

Alanine (Ala) (µmol/L blood)

Analyte: Alanine (Ala) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	59	174.06	43.59	10.38	42.34
Derivatized - MS/MS non-kit	32	316	223.26	50.87	22.90	45.43
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	157.39	27.04	12.35	24.05
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	263.94	49.26	20.46	44.81
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	396	247.93	49.53	25.50	42.46
Non-derivatized - MS/MS non-kit	13	112	214.27	46.18	21.52	40.86

Analyte: Alanine (Ala) - Lot B2215 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	289.92	70.32	18.08	67.96
Derivatized - MS/MS non-kit	32	316	359.87	71.03	29.92	64.42
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	255.31	46.64	18.86	42.66
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	432.66	74.02	33.02	66.25
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	396	402.28	67.47	32.55	59.10
Non-derivatized - MS/MS non-kit	13	112	367.65	77.82	34.35	69.82

Analyte: Alanine (Ala) - Lot C2215 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	400.05	94.71	26.58	90.90
Derivatized - MS/MS non-kit	32	316	498.25	107.70	40.66	99.73
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	355.83	60.60	24.39	55.48
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	598.34	90.06	41.45	79.95
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	396	558.03	88.52	47.24	74.86
Non-derivatized - MS/MS non-kit	13	112	511.93	117.83	41.15	110.41

Analyte: Alanine (Ala) - Lot D2215 - Enrichment 600

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	514.34	136.07	42.16	129.37
Derivatized - MS/MS non-kit	32	316	644.08	136.01	55.31	124.25
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	449.35	82.80	31.63	76.52
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	786.52	133.92	57.62	120.89
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	396	725.67	121.93	62.06	104.96
Non-derivatized - MS/MS non-kit	13	112	676.50	156.04	55.20	145.95

Arginine (Arg) (µmol/L blood)

Analyte: Arginine (Arg) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	5.90	1.75	0.65	1.63
Derivatized - MS/MS non-kit	36	356	5.22	2.71	1.10	2.48
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	4.80	2.29	1.00	2.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	3.88	1.16	0.57	1.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	461	4.07	1.48	0.86	1.21
Non-derivatized - MS/MS non-kit	13	112	4.49	2.24	0.82	2.09

Analyte: Arginine (Arg) - Lot B2215 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	91.23	15.91	5.40	14.96
Derivatized - MS/MS non-kit	36	355	66.71	22.43	6.69	21.41
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	89.56	22.49	5.83	21.73
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	79.75	12.77	5.58	11.49
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	49	471	83.93	10.59	6.22	8.56
Non-derivatized - MS/MS non-kit	13	112	80.24	25.32	9.38	23.51

Analyte: Arginine (Arg) - Lot C2215 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	170.52	27.81	9.89	25.99
Derivatized - MS/MS non-kit	36	356	127.40	44.25	12.34	42.49
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	162.89	41.72	18.88	37.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	153.57	31.54	18.15	25.80
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	49	472	162.43	21.51	12.51	17.50
Non-derivatized - MS/MS non-kit	13	112	155.55	48.45	17.94	45.01

Analyte: Arginine (Arg) - Lot D2215 - Enrichment 300

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	238.15	31.86	17.42	26.68
Derivatized - MS/MS non-kit	36	356	191.55	69.28	18.36	66.80
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	227.49	49.99	14.91	47.72
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	231.06	36.34	16.63	32.31
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	49	472	244.88	30.48	15.26	26.39
Non-derivatized - MS/MS non-kit	13	112	235.84	74.31	24.11	70.29

Citrulline (Cit) (µmol/L blood)

Analyte: Citrulline (Cit) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	58	13.89	2.62	1.42	2.21
Derivatized - MS/MS non-kit	36	354	12.43	2.97	1.49	2.56
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	12.84	3.70	2.17	2.99
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	13.13	2.25	1.34	1.81
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	495	12.65	2.32	1.45	1.81
Non-derivatized - MS/MS non-kit	16	144	13.06	4.12	2.50	3.28

Analyte: Citrulline (Cit) - Lot B2215 - Enrichment 25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	58	32.93	5.85	2.88	5.10
Derivatized - MS/MS non-kit	36	354	30.34	6.02	2.79	5.33
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	33.91	6.85	3.18	6.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	33.64	5.63	3.62	4.31
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	504	33.26	4.78	2.84	3.85
Non-derivatized - MS/MS non-kit	16	144	33.58	7.69	4.11	6.50

Analyte: Citrulline (Cit) - Lot C2215 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	58	87.96	13.97	5.93	12.65
Derivatized - MS/MS non-kit	36	354	82.89	17.16	7.01	15.66
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	91.57	20.24	11.40	16.72
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	91.46	11.23	6.85	8.90
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	504	90.70	10.88	6.40	8.80
Non-derivatized - MS/MS non-kit	16	144	91.62	18.64	10.16	15.63

Analyte: Citrulline (Cit) - Lot D2215 - Enrichment 250

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	58	196.23	26.38	10.58	24.17
Derivatized - MS/MS non-kit	36	354	191.12	38.95	15.62	35.68
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	201.63	42.71	18.35	38.56
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	214.13	27.04	16.46	21.45
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	504	208.52	26.67	14.05	22.67
Non-derivatized - MS/MS non-kit	16	144	210.81	43.36	19.81	38.57

Glycine (Gly) (µmol/L blood)

Analyte: Glycine (Gly) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	221.01	23.53	12.56	19.90
Derivatized - MS/MS non-kit	29	284	250.46	59.90	20.81	56.17
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	175.29	63.98	23.19	59.63
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	317	284.34	53.22	28.99	44.63
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	37	356	273.95	54.93	30.11	45.94
Non-derivatized - MS/MS non-kit	8	68	199.34	64.54	30.57	56.84

Analyte: Glycine (Gly) - Lot B2215 - Enrichment 300

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	430.24	46.59	26.00	38.66
Derivatized - MS/MS non-kit	29	286	470.92	104.63	33.07	99.27
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	314.75	81.81	31.77	75.38
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	318	523.53	96.81	50.76	82.43
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	37	356	511.96	79.37	42.27	67.18
Non-derivatized - MS/MS non-kit	8	68	412.76	154.17	85.86	128.05

Analyte: Glycine (Gly) - Lot C2215 - Enrichment 600

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	627.79	50.46	27.70	42.18
Derivatized - MS/MS non-kit	29	286	690.91	162.71	56.79	152.48
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	449.33	104.52	34.55	98.65
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	318	766.77	130.33	66.57	112.04
Non-derivatized - MS/MS NeoBase™ 2 PerkinElmer	37	355	754.83	125.11	62.31	108.48
Non-derivatized - MS/MS non-kit	8	68	602.40	219.60	114.98	187.09

Analyte: Glycine (Gly) - Lot D2215 - Enrichment 900

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	822.01	81.04	44.12	67.98
Derivatized - MS/MS non-kit	29	286	924.37	217.86	63.73	208.33
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	593.73	156.87	50.69	148.46
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	318	1017.55	185.14	103.47	153.53
Non-derivatized - MS/MS NeoBase™ 2 PerkinElmer	37	356	1000.87	167.94	86.16	144.16
Non-derivatized - MS/MS non-kit	8	68	840.62	348.07	182.67	296.29

Leucine (Leu) (µmol/L blood)

Analyte: Leucine (Leu) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	66.59	13.05	6.34	11.40
Derivatized - MS/MS non-kit	35	342	67.94	14.92	5.64	13.82
Non-derivatized - MS/MS MassChrom® Chromsystems	17	160	77.94	12.16	5.44	10.88
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	84.34	10.95	5.59	9.42
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	78.49	12.30	6.21	10.62
Non-derivatized - MS/MS non-kit	18	164	77.64	11.07	5.24	9.75

Analyte: Leucine (Leu) - Lot B2215 - Enrichment 150

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	167.05	18.87	8.98	16.60
Derivatized - MS/MS non-kit	35	342	173.80	34.72	12.13	32.54
Non-derivatized - MS/MS MassChrom® Chromsystems	17	160	185.16	26.41	12.63	23.20
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	203.22	27.10	13.71	23.37
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	188.27	25.08	13.61	21.07
Non-derivatized - MS/MS non-kit	18	164	195.17	26.50	13.68	22.69

Analyte: Leucine (Leu) - Lot C2215 - Enrichment 300

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	266.22	30.55	13.92	27.20
Derivatized - MS/MS non-kit	35	342	275.28	52.58	18.95	49.04
Non-derivatized - MS/MS MassChrom® Chromsystems	17	160	288.83	38.62	18.97	33.64
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	312.37	38.96	20.92	32.86
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	291.09	38.03	19.57	32.61
Non-derivatized - MS/MS non-kit	18	164	300.93	37.47	20.09	31.63

Analyte: Leucine (Leu) - Lot D2215 - Enrichment 600

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	482.05	61.40	28.65	54.31
Derivatized - MS/MS non-kit	35	342	507.79	97.94	40.38	89.23
Non-derivatized - MS/MS MassChrom® Chromsystems	17	160	510.70	68.51	33.96	59.50
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	581.71	71.67	38.69	60.33
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	533.96	68.29	34.67	58.84
Non-derivatized - MS/MS non-kit	18	164	564.07	74.74	40.54	62.80

Methionine (Met) (µmol/L blood)

Analyte: Methionine (Met) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	9.76	3.54	1.98	2.93
Derivatized - MS/MS non-kit	36	352	9.42	2.55	1.35	2.16
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	9.72	5.34	1.35	5.16
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	9.26	1.67	0.93	1.38
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	490	7.88	1.52	0.89	1.23
Non-derivatized - MS/MS non-kit	18	164	8.48	1.66	0.95	1.36

Analyte: Methionine (Met) - Lot B2215 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	41.19	7.72	3.54	6.86
Derivatized - MS/MS non-kit	36	352	45.52	8.09	3.79	7.15
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	42.68	7.02	3.33	6.18
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	44.83	6.15	2.95	5.39
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	490	41.25	5.57	3.20	4.56
Non-derivatized - MS/MS non-kit	18	164	45.51	7.08	3.43	6.19

Analyte: Methionine (Met) - Lot C2215 - Enrichment 150

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	104.65	18.60	7.11	17.18
Derivatized - MS/MS non-kit	36	352	118.12	23.21	10.23	20.83
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	112.57	19.78	8.85	17.69
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	118.93	15.09	8.27	12.62
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	490	110.32	13.94	7.74	11.60
Non-derivatized - MS/MS non-kit	18	164	122.35	18.90	8.44	16.91

Analyte: Methionine (Met) - Lot D2215 - Enrichment 250

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	167.94	29.81	14.06	26.28
Derivatized - MS/MS non-kit	36	352	195.77	34.88	14.32	31.81
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	183.52	33.46	12.72	30.95
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	201.87	26.38	13.43	22.70
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	490	185.99	23.96	13.02	20.12
Non-derivatized - MS/MS non-kit	18	164	208.91	35.36	15.54	31.76

Ornithine (Orn) (µmol/L blood)

Analyte: Ornithine (Orn) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	113.15	18.33	6.57	17.12
Derivatized - MS/MS non-kit	28	270	76.48	30.05	8.29	28.88
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	127.87	39.55	14.29	36.88
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	106.56	19.61	9.18	17.33
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	38	368	100.24	17.91	8.91	15.53
Non-derivatized - MS/MS non-kit	11	94	85.99	18.59	5.91	17.62

Analyte: Ornithine (Orn) - Lot B2215 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	198.75	36.40	15.08	33.13
Derivatized - MS/MS non-kit	28	274	133.47	49.51	14.05	47.47
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	195.91	43.28	17.07	39.78
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	184.97	34.10	15.57	30.34
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	38	368	171.27	23.41	11.50	20.39
Non-derivatized - MS/MS non-kit	11	94	151.31	29.44	11.49	27.11

Analyte: Ornithine (Orn) - Lot C2215 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	258.58	46.28	19.56	41.94
Derivatized - MS/MS non-kit	28	274	176.82	66.64	19.80	63.63
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	261.11	54.35	19.28	50.82
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	245.47	41.75	19.54	36.89
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	38	367	228.35	32.20	16.18	27.84
Non-derivatized - MS/MS non-kit	11	94	199.26	45.24	13.38	43.22

Analyte: Ornithine (Orn) - Lot D2215 - Enrichment 300

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	334.89	65.43	25.26	60.36
Derivatized - MS/MS non-kit	28	274	240.91	89.09	23.73	85.87
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	348.89	75.10	28.45	69.50
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	328.94	56.17	26.24	49.66
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	38	368	301.97	43.74	20.50	38.64
Non-derivatized - MS/MS non-kit	11	94	264.28	55.89	19.89	52.23

Phenylalanine (Phe) (µmol/L blood)

Analyte: Phenylalanine (Phe) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS ClinSpot® Complete Kit RECIPE	5	50	34.31	4.90	2.29	4.34
Derivatized - MS/MS MassChrom® Chromsystems	8	80	33.28	4.73	2.22	4.17
Derivatized - MS/MS non-kit	37	364	33.85	7.67	3.65	6.75
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	35.74	5.79	2.41	5.26
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	388	35.06	4.90	2.63	4.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	514	31.65	4.89	2.85	3.98
Non-derivatized - MS/MS non-kit	18	164	34.11	4.37	2.38	3.66
GSP® Phe Neonatal PerkinElmer	6	60	32.09	12.26	7.31	9.85
Neonatal Phe LabSystems	5	50	50.55	22.59	5.12	22.00
Neonatal® Phe Kit PerkinElmer	5	48	39.29	22.57	14.86	16.98

Analyte: Phenylalanine (Phe) - Lot B2215 - Enrichment 150

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS ClinSpot® Complete Kit RECIPE	5	50	157.00	15.96	6.39	14.63
Derivatized - MS/MS MassChrom® Chromsystems	8	80	154.92	16.03	9.59	12.84
Derivatized - MS/MS non-kit	37	364	157.89	25.37	10.05	23.29
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	170.30	24.06	11.23	21.28
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	388	168.58	20.78	11.25	17.47
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	514	153.18	17.12	9.64	14.15
Non-derivatized - MS/MS non-kit	18	164	170.09	23.62	12.44	20.08
GSP® Phe Neonatal PerkinElmer	6	60	161.83	19.97	13.36	14.84
Neonatal Phe LabSystems	5	50	195.36	35.95	20.67	29.41
Neonatal® Phe Kit PerkinElmer	5	50	151.10	28.88	18.53	22.14

Analyte: Phenylalanine (Phe) - Lot C2215 - Enrichment 300

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS ClinSpot® Complete Kit RECIPE	5	50	282.52	30.73	15.65	26.45
Derivatized - MS/MS MassChrom® Chromsystems	8	80	272.33	30.78	18.50	24.60
Derivatized - MS/MS non-kit	37	364	273.77	44.18	17.82	40.42
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	298.82	43.06	21.07	37.55
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	388	292.77	36.07	20.59	29.62
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	514	268.02	28.63	16.18	23.62
Non-derivatized - MS/MS non-kit	18	164	296.87	38.57	22.63	31.24
GSP® Phe Neonatal PerkinElmer	6	60	292.73	39.16	25.05	30.11
Neonatal Phe LabSystems	5	50	332.52	58.40	32.97	48.20
Neonatal® Phe Kit PerkinElmer	5	50	265.62	40.09	26.82	29.80

Analyte: Phenylalanine (Phe) - Lot D2215 - Enrichment 450

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS ClinSpot® Complete Kit RECIPE	5	50	395.39	58.94	23.40	54.10
Derivatized - MS/MS MassChrom® Chromsystems	8	80	392.74	51.01	25.69	44.07
Derivatized - MS/MS non-kit	37	364	402.37	62.24	25.75	56.66
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	424.35	60.58	27.91	53.77
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	388	432.44	51.29	28.50	42.64
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	514	392.34	44.49	23.74	37.62
Non-derivatized - MS/MS non-kit	18	164	440.21	51.01	25.91	43.94
GSP® Phe Neonatal PerkinElmer	6	60	446.27	55.44	36.20	42.00
Neonatal Phe LabSystems	5	50	492.26	106.44	51.06	93.39
Neonatal® Phe Kit PerkinElmer	5	49	377.28	51.13	34.06	38.14

Creatine (CRE) ($\mu\text{mol/L}$ blood)

Analyte: Creatine (CRE) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	7	70	194.5	48.97	25.15	42.02

Analyte: Creatine (CRE) - Lot B2215 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	7	70	227.47	51.86	21.83	47.04

Analyte: Creatine (CRE) - Lot C2215 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	7	70	332.95	63.9	24.07	59.2

Analyte: Creatine (CRE) - Lot D2215 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	7	70	498.71	85.38	37.94	76.49

Guanidinoacetic Acid (GUAC) ($\mu\text{mol/L}$ blood)

Analyte: Guanidinoacetic Acid (GUAC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	9	90	1.17	0.38	0.11	0.36

Analyte: Guanidinoacetic Acid (GUAC) - Lot B2215 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	9	90	4.77	1.17	0.4	1.1

Analyte: Guanidinoacetic Acid (GUAC) - Lot C2215 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	9	90	8.4	2.29	0.66	2.19

Analyte: Guanidinoacetic Acid (GUAC) - Lot D2215 - Enrichment 20

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS non-kit	9	90	16.24	5.3	1.51	5.08

Succinylacetone (SUAC) ($\mu\text{mol/L}$ blood)

Analyte: Succinylacetone (SUAC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	0.50	0.20	0.12	0.15
Derivatized - MS/MS non-kit	13	128	0.56	0.40	0.10	0.39
Non-derivatized - MS/MS MassChrom® Chromsystems	8	74	0.61	0.26	0.16	0.20
Non-derivatized - MS/MS NeoBase™ PerkinElmer	28	280	0.55	0.28	0.10	0.26
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	32	304	0.19	0.12	0.06	0.11
Non-derivatized - MS/MS non-kit	7	58	0.59	0.34	0.14	0.32

Analyte: Succinylacetone (SUAC) - Lot B2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	1.48	0.35	0.21	0.28
Derivatized - MS/MS non-kit	13	128	1.73	0.63	0.22	0.59
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	1.55	0.37	0.17	0.33
Non-derivatized - MS/MS NeoBase™ PerkinElmer	28	279	1.22	0.37	0.16	0.34
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	322	0.67	0.21	0.11	0.18
Non-derivatized - MS/MS non-kit	8	68	1.52	0.63	0.27	0.57

Analyte: Succinylacetone (SUAC) - Lot C2215 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	4.27	1.40	0.63	1.26
Derivatized - MS/MS non-kit	13	128	4.89	1.86	0.49	1.79
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	4.61	1.04	0.42	0.96
Non-derivatized - MS/MS NeoBase™ PerkinElmer	28	280	3.28	0.96	0.38	0.88
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	322	2.17	0.57	0.28	0.50
Non-derivatized - MS/MS non-kit	8	68	4.28	1.69	0.70	1.54

Analyte: Succinylacetone (SUAC) - Lot D2215 - Enrichment 20

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	7.29	2.19	0.81	2.04
Derivatized - MS/MS non-kit	13	128	9.39	3.91	0.92	3.80
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	7.96	1.50	0.54	1.40
Non-derivatized - MS/MS NeoBase™ PerkinElmer	28	280	5.59	1.54	0.62	1.40
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	322	3.91	0.90	0.43	0.79
Non-derivatized - MS/MS non-kit	8	68	8.03	3.08	1.12	2.87

Tyrosine (Tyr) ($\mu\text{mol/L}$ blood)

Analyte: Tyrosine (Tyr) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	28.32	4.17	2.10	3.60
Derivatized - MS/MS non-kit	36	356	27.40	6.38	2.94	5.66
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	31.95	8.33	3.62	7.50
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	30.24	4.94	2.77	4.09
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	27.24	4.56	2.63	3.72
Non-derivatized - MS/MS non-kit	16	142	26.90	4.03	2.09	3.44

Analyte: Tyrosine (Tyr) - Lot B2215 - Enrichment 300

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	266.36	30.43	19.38	23.46
Derivatized - MS/MS non-kit	36	356	256.91	44.18	18.61	40.07
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	290.07	44.33	21.50	38.76
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	288.96	36.87	19.39	31.36
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	258.70	29.08	15.59	24.55
Non-derivatized - MS/MS non-kit	16	142	269.15	39.61	19.31	34.58

Analyte: Tyrosine (Tyr) - Lot C2215 - Enrichment 600

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	500.10	51.99	31.14	41.63
Derivatized - MS/MS non-kit	36	356	481.18	86.73	34.31	79.65
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	549.88	82.32	43.39	69.96
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	542.31	68.55	36.76	57.86
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	490.38	53.95	28.42	45.86
Non-derivatized - MS/MS non-kit	16	142	505.80	67.50	30.29	60.33

Analyte: Tyrosine (Tyr) - Lot D2215 - Enrichment 900

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	719.84	100.63	48.65	88.09
Derivatized - MS/MS non-kit	36	356	717.26	135.77	53.87	124.62
Non-derivatized - MS/MS MassChrom® Chromsystems	17	162	788.11	121.57	60.48	105.46
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	811.81	103.01	54.72	87.27
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	508	721.97	86.25	44.39	73.95
Non-derivatized - MS/MS non-kit	16	142	758.51	110.95	46.20	100.88

Valine (Val) (µmol/L blood)

Analyte: Valine (Val) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	67.76	9.96	3.75	9.22
Derivatized - MS/MS non-kit	33	326	85.60	32.19	18.22	26.54
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	65.05	11.21	4.24	10.38
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	82.67	13.20	6.19	11.66
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	496	77.05	13.25	7.86	10.66
Non-derivatized - MS/MS non-kit	15	132	70.54	11.06	4.79	9.97

Analyte: Valine (Val) - Lot B2215 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	178.19	21.21	11.45	17.85
Derivatized - MS/MS non-kit	33	326	214.41	45.76	20.90	40.71
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	194.56	34.93	17.25	30.38
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	242.16	40.82	19.34	35.95
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	498	227.97	29.89	17.39	24.31
Non-derivatized - MS/MS non-kit	15	132	214.53	34.66	17.13	30.13

Analyte: Valine (Val) - Lot C2215 - Enrichment 350

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	284.35	28.49	15.85	23.67
Derivatized - MS/MS non-kit	33	326	318.59	62.63	25.64	57.14
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	296.53	53.04	23.48	47.57
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	368.87	59.05	27.70	52.15
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	498	349.07	44.19	25.74	35.93
Non-derivatized - MS/MS non-kit	15	132	325.70	49.98	23.56	44.08

Analyte: Valine (Val) - Lot D2215 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	383.99	61.23	22.28	57.04
Derivatized - MS/MS non-kit	33	326	425.93	74.67	31.17	67.85
Non-derivatized - MS/MS MassChrom® Chromsystems	12	112	384.29	62.94	28.98	55.87
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	499.11	80.79	36.16	72.24
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	498	466.73	60.61	32.05	51.45
Non-derivatized - MS/MS non-kit	15	132	441.62	70.51	34.09	61.72

Free carnitine (C0) ($\mu\text{mol/L}$ blood)

Analyte: Free carnitine (C0) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	11.09	2.87	1.02	2.68
Derivatized - MS/MS non-kit	40	386	13.49	3.08	1.44	2.72
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	12.22	2.16	0.95	1.94
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	368	11.99	1.87	1.04	1.56
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	12.58	2.13	1.17	1.78
Non-derivatized - MS/MS non-kit	17	150	12.48	2.33	0.96	2.13

Analyte: Free carnitine (C0) - Lot B2215 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	20.91	5.41	1.71	5.13
Derivatized - MS/MS non-kit	40	386	25.57	4.74	2.09	4.25
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	22.06	3.71	1.61	3.34
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	368	21.76	3.18	1.63	2.74
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	22.89	3.24	1.70	2.76
Non-derivatized - MS/MS non-kit	17	150	23.25	3.95	1.98	3.42

Analyte: Free carnitine (C0) - Lot C2215 - Enrichment 20

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	30.35	7.99	2.55	7.58
Derivatized - MS/MS non-kit	40	386	37.34	7.54	3.26	6.80
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	31.43	5.42	2.43	4.85
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	367	30.72	4.43	2.29	3.79
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	32.27	4.54	2.37	3.87
Non-derivatized - MS/MS non-kit	17	150	32.99	4.92	2.46	4.26

Analyte: Free carnitine (C0) - Lot D2215 - Enrichment 30

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	40.43	11.59	3.70	10.99
Derivatized - MS/MS non-kit	40	386	50.65	11.52	5.27	10.24
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	40.59	6.81	2.99	6.11
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	368	41.28	5.72	3.04	4.85
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	43.16	6.24	3.10	5.42
Non-derivatized - MS/MS non-kit	17	150	45.00	6.70	3.41	5.77

Acetylcarnitine (C2) (µmol/L blood)

Analyte: Acetylcarnitine (C2) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	7.76	1.41	0.58	1.28
Derivatized - MS/MS non-kit	39	378	8.90	2.54	0.89	2.38
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	6.23	1.04	0.41	0.95
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	378	6.99	0.85	0.53	0.67
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	486	6.49	0.83	0.47	0.69
Non-derivatized - MS/MS non-kit	16	142	7.44	1.57	0.44	1.51

Analyte: Acetylcarnitine (C2) - Lot B2215 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	15.32	2.09	1.13	1.76
Derivatized - MS/MS non-kit	39	378	17.06	3.66	1.45	3.36
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	14.04	2.04	0.91	1.83
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	378	15.62	1.68	0.99	1.35
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	486	14.62	1.88	1.11	1.52
Non-derivatized - MS/MS non-kit	16	142	16.52	2.56	1.13	2.30

Analyte: Acetylcarnitine (C2) - Lot C2215 - Enrichment 20

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	21.84	2.95	1.46	2.57
Derivatized - MS/MS non-kit	39	378	24.31	4.95	1.87	4.58
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	20.87	3.72	2.26	2.96
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	377	23.29	3.03	1.93	2.33
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	486	22.10	2.47	1.40	2.03
Non-derivatized - MS/MS non-kit	16	142	24.79	3.36	1.51	3.01

Analyte: Acetylcarnitine (C2) - Lot D2215 - Enrichment 30

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	29.72	5.22	2.15	4.75
Derivatized - MS/MS non-kit	39	378	32.36	6.67	2.56	6.16
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	26.97	4.20	1.93	3.73
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	378	32.01	3.32	2.00	2.64
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	486	29.91	3.47	1.87	2.93
Non-derivatized - MS/MS non-kit	16	142	34.31	4.73	2.10	4.24

Propionylcarnitine (C3) (µmol/L blood)

Analyte: Propionylcarnitine (C3) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.91	0.12	0.08	0.09
Derivatized - MS/MS non-kit	40	388	1.04	0.22	0.11	0.19
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	0.86	0.13	0.06	0.12
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	366	0.95	0.13	0.08	0.10
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	507	1.12	0.18	0.11	0.15
Non-derivatized - MS/MS non-kit	17	154	1.05	0.18	0.09	0.16

Analyte: Propionylcarnitine (C3) - Lot B2215 - Enrichment 4

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	3.57	0.54	0.35	0.41
Derivatized - MS/MS non-kit	40	388	4.04	0.81	0.35	0.73
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	3.43	0.46	0.22	0.41
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	366	3.84	0.46	0.26	0.37
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	516	4.49	0.59	0.31	0.50
Non-derivatized - MS/MS non-kit	17	154	4.29	0.72	0.32	0.65

Analyte: Propionylcarnitine (C3) - Lot C2215 - Enrichment 8

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	6.03	1.00	0.57	0.83
Derivatized - MS/MS non-kit	40	388	7.00	1.49	0.67	1.34
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	6.02	0.81	0.38	0.71
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	366	6.65	0.72	0.42	0.59
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	516	7.81	1.00	0.55	0.83
Non-derivatized - MS/MS non-kit	17	154	7.40	1.07	0.50	0.94

Analyte: Propionylcarnitine (C3) - Lot D2215 - Enrichment 12

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	8.49	1.49	0.65	1.34
Derivatized - MS/MS non-kit	40	388	9.80	2.11	0.81	1.95
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	8.22	1.16	0.52	1.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	366	9.44	1.11	0.64	0.91
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	516	11.01	1.45	0.77	1.23
Non-derivatized - MS/MS non-kit	17	154	10.41	1.54	0.72	1.36

Malonylcarnitine (C3DC) ($\mu\text{mol/L}$ blood)

Analyte: Malonylcarnitine (C3DC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.05	0.04	0.01	0.04
Derivatized - MS/MS non-kit	39	376	0.03	0.03	0.01	0.02

Analyte: Malonylcarnitine (C3DC) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.47	0.17	0.05	0.16
Derivatized - MS/MS non-kit	40	388	0.33	0.16	0.05	0.16

Analyte: Malonylcarnitine (C3DC) - Lot C2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	1.24	0.58	0.14	0.56
Derivatized - MS/MS non-kit	40	388	0.94	0.47	0.12	0.45

Analyte: Malonylcarnitine (C3DC) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	2.44	1.07	0.20	1.05
Derivatized - MS/MS non-kit	40	388	1.86	0.94	0.24	0.90

Malonylcarnitine (C3DC) + Hydroxybutyrylcarnitine (C4OH) (µmol/L blood)

Analyte: Malonylcarnitine (C3DC) + Hydroxybutyrylcarnitine (C4OH) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	312	0.04	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	45	438	0.04	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	8	76	0.05	0.03	0.01	0.03

Analyte: Malonylcarnitine (C3DC) + Hydroxybutyrylcarnitine (C4OH) - Lot B2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	312	0.37	0.07	0.03	0.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	448	0.44	0.11	0.03	0.10
Non-derivatized - MS/MS non-kit	8	76	0.46	0.27	0.05	0.26

Analyte: Malonylcarnitine (C3DC) + Hydroxybutyrylcarnitine (C4OH) - Lot C2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	312	0.76	0.14	0.07	0.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	448	0.92	0.23	0.09	0.21
Non-derivatized - MS/MS non-kit	8	76	0.92	0.53	0.08	0.53

Analyte: Malonylcarnitine (C3DC) + Hydroxybutyrylcarnitine (C4OH) - Lot D2215 - Enrichment 5.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	312	1.71	0.34	0.14	0.31
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	448	2.03	0.46	0.16	0.43
Non-derivatized - MS/MS non-kit	8	76	2.13	1.25	0.18	1.23

Butyrylcarnitine (C4) (µmol/L blood)

Analyte: Butyrylcarnitine (C4) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.11	0.04	0.02	0.03
Derivatized - MS/MS non-kit	39	372	0.13	0.10	0.04	0.09
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.10	0.05	0.01	0.05
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	356	0.12	0.07	0.05	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	49	475	0.09	0.03	0.01	0.03
Non-derivatized - MS/MS non-kit	14	121	0.09	0.03	0.01	0.03

Analyte: Butyrylcarnitine (C4) - Lot B2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.67	0.11	0.08	0.08
Derivatized - MS/MS non-kit	39	372	0.77	0.21	0.09	0.19
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.67	0.10	0.05	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	356	0.73	0.10	0.05	0.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	0.68	0.08	0.05	0.07
Non-derivatized - MS/MS non-kit	14	122	0.73	0.14	0.06	0.12

Analyte: Butyrylcarnitine (C4) - Lot C2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.75	0.25	0.15	0.20
Derivatized - MS/MS non-kit	39	372	1.94	0.46	0.19	0.42
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	1.78	0.25	0.13	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	356	1.92	0.23	0.13	0.19
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	1.84	0.22	0.12	0.18
Non-derivatized - MS/MS non-kit	14	122	2.02	0.38	0.15	0.35

Analyte: Butyrylcarnitine (C4) - Lot D2215 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	2.81	0.62	0.32	0.53
Derivatized - MS/MS non-kit	39	372	3.13	0.66	0.29	0.59
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	2.80	0.46	0.20	0.41
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	356	3.18	0.41	0.21	0.35
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	485	3.00	0.36	0.20	0.30
Non-derivatized - MS/MS non-kit	14	122	3.31	0.59	0.20	0.56

Hydroxybutyrylcarnitine (C4OH) (µmol/L blood)

Analyte: Hydroxybutyrylcarnitine (C4OH) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	0.08	0.03	0.02	0.03
Derivatized - MS/MS non-kit	37	358	0.06	0.04	0.02	0.04

Analyte: Hydroxybutyrylcarnitine (C4OH) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	0.40	0.12	0.06	0.10
Derivatized - MS/MS non-kit	37	358	0.35	0.12	0.05	0.12

Analyte: Hydroxybutyrylcarnitine (C4OH) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	0.72	0.20	0.09	0.17
Derivatized - MS/MS non-kit	37	358	0.65	0.26	0.10	0.24

Analyte: Hydroxybutyrylcarnitine (C4OH) - Lot D2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	5	50	1.58	0.43	0.18	0.39
Derivatized - MS/MS non-kit	37	358	1.52	0.54	0.18	0.51

Isovalerylcarnitine (C5) (µmol/L blood)

Analyte: Isovalerylcarnitine (C5) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	0.10	0.07	0.02	0.07
Derivatized - MS/MS non-kit	40	385	0.07	0.03	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	0.10	0.16	0.03	0.16
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	0.05	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	506	0.05	0.05	0.03	0.04
Non-derivatized - MS/MS non-kit	19	168	0.06	0.03	0.01	0.02

Analyte: Isovalerylcarnitine (C5) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	0.49	0.10	0.06	0.08
Derivatized - MS/MS non-kit	40	386	0.45	0.11	0.05	0.10
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	0.48	0.13	0.05	0.12
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	0.45	0.07	0.03	0.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	0.43	0.05	0.03	0.04
Non-derivatized - MS/MS non-kit	19	174	0.47	0.07	0.04	0.06

Analyte: Isovalerylcarnitine (C5) - Lot C2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	1.27	0.19	0.12	0.15
Derivatized - MS/MS non-kit	40	386	1.22	0.26	0.11	0.24
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	1.22	0.20	0.08	0.18
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	1.21	0.19	0.10	0.16
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	1.17	0.13	0.08	0.11
Non-derivatized - MS/MS non-kit	19	174	1.31	0.17	0.10	0.15

Analyte: Isovalerylcarnitine (C5) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	2.42	0.49	0.26	0.42
Derivatized - MS/MS non-kit	40	386	2.36	0.48	0.19	0.44
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	2.28	0.42	0.16	0.39
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	2.41	0.36	0.18	0.31
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	2.29	0.28	0.16	0.24
Non-derivatized - MS/MS non-kit	19	174	2.56	0.31	0.17	0.26

Tiglyl carnitine (C5:1) (µmol/L blood)

Analyte: Tiglyl carnitine (C5:1) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.04	0.04	0.02	0.04
Derivatized - MS/MS non-kit	39	373	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.03	0.04	0.01	0.03
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	320	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	47	447	0.01	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	9	84	0.01	0.01	0.00	0.01

Analyte: Tiglyl carnitine (C5:1) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.38	0.13	0.06	0.12
Derivatized - MS/MS non-kit	39	376	0.37	0.13	0.05	0.12
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.25	0.14	0.04	0.13
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	0.28	0.06	0.03	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	459	0.29	0.05	0.03	0.04
Non-derivatized - MS/MS non-kit	10	90	0.31	0.08	0.03	0.08

Analyte: Tiglyl carnitine (C5:1) - Lot C2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.99	0.29	0.10	0.27
Derivatized - MS/MS non-kit	39	376	1.06	0.37	0.13	0.35
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.68	0.36	0.11	0.35
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	0.81	0.16	0.07	0.14
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	460	0.84	0.14	0.07	0.12
Non-derivatized - MS/MS non-kit	10	90	0.89	0.21	0.06	0.20

Analyte: Tiglyl carnitine (C5:1) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.91	0.57	0.23	0.52
Derivatized - MS/MS non-kit	39	376	2.12	0.81	0.23	0.78
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	1.36	0.69	0.19	0.66
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	1.65	0.32	0.15	0.28
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	460	1.69	0.29	0.15	0.24
Non-derivatized - MS/MS non-kit	10	90	1.83	0.40	0.13	0.37

Glutaryl carnitine (C5DC) ($\mu\text{mol/L}$ blood)

Analyte: Glutaryl carnitine (C5DC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	0.05	0.04	0.02	0.04
Derivatized - MS/MS non-kit	40	384	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	0.08	0.06	0.02	0.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	31	310	0.04	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	47	451	0.03	0.02	0.01	0.02
Non-derivatized - MS/MS non-kit	14	132	0.04	0.02	0.01	0.02

Analyte: Glutaryl carnitine (C5DC) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	0.67	0.18	0.09	0.16
Derivatized - MS/MS non-kit	40	386	0.33	0.15	0.05	0.14
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	0.76	0.19	0.08	0.18
Non-derivatized - MS/MS NeoBase™ PerkinElmer	31	310	0.56	0.09	0.05	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	470	0.45	0.08	0.04	0.07
Non-derivatized - MS/MS non-kit	17	150	0.54	0.12	0.05	0.11

Analyte: Glutarylcarnitine (C5DC) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	1.24	0.23	0.13	0.19
Derivatized - MS/MS non-kit	40	386	0.65	0.31	0.11	0.29
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	1.39	0.42	0.26	0.33
Non-derivatized - MS/MS NeoBase™ PerkinElmer	31	310	1.07	0.16	0.09	0.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	470	0.87	0.13	0.06	0.11
Non-derivatized - MS/MS non-kit	17	150	1.03	0.22	0.07	0.21

Analyte: Glutarylcarnitine (C5DC) - Lot D2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	8	80	2.94	0.54	0.28	0.47
Derivatized - MS/MS non-kit	40	386	1.60	0.68	0.19	0.66
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	3.15	0.81	0.31	0.75
Non-derivatized - MS/MS NeoBase™ PerkinElmer	31	310	2.60	0.38	0.20	0.32
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	472	2.15	0.35	0.17	0.31
Non-derivatized - MS/MS non-kit	17	150	2.56	0.55	0.19	0.52

Hydroxyisovalerylcarnitine (C5OH) (µmol/L blood)

Analyte: Hydroxyisovalerylcarnitine (C5OH) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.34	0.09	0.04	0.08
Derivatized - MS/MS non-kit	41	396	0.30	0.09	0.04	0.08
Non-derivatized - MS/MS MassChrom® Chromsystems	8	72	0.31	0.05	0.03	0.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	30	300	0.40	0.06	0.03	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	45	442	0.51	0.12	0.04	0.11
Non-derivatized - MS/MS non-kit	14	122	0.50	0.12	0.05	0.11

Analyte: Hydroxyisovalerylcarnitine (C5OH) - Lot B2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.91	0.20	0.10	0.18
Derivatized - MS/MS non-kit	41	396	0.85	0.21	0.09	0.19
Non-derivatized - MS/MS MassChrom® Chromsystems	8	72	0.64	0.10	0.05	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	30	300	0.84	0.14	0.07	0.12
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	45	442	1.00	0.19	0.06	0.18
Non-derivatized - MS/MS non-kit	14	122	1.15	0.27	0.09	0.25

Analyte: Hydroxyisovalerylcarnitine (C5OH) - Lot C2215 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.49	0.33	0.15	0.30
Derivatized - MS/MS non-kit	41	396	1.36	0.33	0.12	0.31
Non-derivatized - MS/MS MassChrom® Chromsystems	8	72	0.96	0.21	0.14	0.16
Non-derivatized - MS/MS NeoBase™ PerkinElmer	30	300	1.26	0.24	0.11	0.22
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	45	442	1.45	0.28	0.11	0.26
Non-derivatized - MS/MS non-kit	14	122	1.73	0.40	0.13	0.38

Analyte: Hydroxyisovalerylcarnitine (C5OH) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.97	0.40	0.21	0.34
Derivatized - MS/MS non-kit	41	396	1.96	0.45	0.18	0.42
Non-derivatized - MS/MS MassChrom® Chromsystems	8	72	1.29	0.22	0.13	0.18
Non-derivatized - MS/MS NeoBase™ PerkinElmer	30	300	1.66	0.29	0.13	0.26
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	45	442	1.94	0.36	0.14	0.33
Non-derivatized - MS/MS non-kit	14	122	2.38	0.53	0.16	0.51

Hexanoylcarnitine (C6) (µmol/L blood)

Analyte: Hexanoylcarnitine (C6) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.05	0.04	0.01	0.04
Derivatized - MS/MS non-kit	39	375	0.03	0.07	0.02	0.06
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.02	0.04	0.01	0.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	485	0.01	0.02	0.01	0.02
Non-derivatized - MS/MS non-kit	13	114	0.01	0.01	0.01	0.01

Analyte: Hexanoylcarnitine (C6) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.33	0.07	0.05	0.05
Derivatized - MS/MS non-kit	40	387	0.34	0.09	0.05	0.08
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.33	0.05	0.02	0.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	0.34	0.04	0.03	0.04
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	496	0.33	0.04	0.02	0.03
Non-derivatized - MS/MS non-kit	15	130	0.36	0.06	0.03	0.05

Analyte: Hexanoylcarnitine (C6) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.56	0.09	0.06	0.07
Derivatized - MS/MS non-kit	40	388	0.63	0.14	0.08	0.11
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.62	0.08	0.04	0.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	0.66	0.08	0.05	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	496	0.63	0.07	0.04	0.06
Non-derivatized - MS/MS non-kit	15	130	0.70	0.11	0.05	0.10

Analyte: Hexanoylcarnitine (C6) - Lot D2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.22	0.22	0.11	0.19
Derivatized - MS/MS non-kit	40	388	1.54	0.32	0.17	0.27
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	1.44	0.24	0.12	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	1.66	0.20	0.11	0.17
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	496	1.52	0.18	0.09	0.15
Non-derivatized - MS/MS non-kit	15	130	1.76	0.26	0.13	0.22

Octanoylcarnitine (C8) (µmol/L blood)

Analyte: Octanoylcarnitine (C8) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.02	0.02	0.01	0.02
Derivatized - MS/MS non-kit	39	373	0.02	0.04	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	15	142	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	364	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	498	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	16	148	0.03	0.03	0.02	0.02

Analyte: Octanoylcarnitine (C8) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.35	0.07	0.04	0.06
Derivatized - MS/MS non-kit	40	386	0.48	0.13	0.07	0.11
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	0.42	0.06	0.03	0.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	0.46	0.06	0.04	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	518	0.42	0.05	0.03	0.04
Non-derivatized - MS/MS non-kit	18	164	0.48	0.09	0.04	0.08

Analyte: Octanoylcarnitine (C8) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.67	0.14	0.07	0.12
Derivatized - MS/MS non-kit	40	386	0.90	0.21	0.10	0.19
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	0.81	0.13	0.06	0.11
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	0.87	0.10	0.07	0.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	518	0.81	0.10	0.06	0.08
Non-derivatized - MS/MS non-kit	18	164	0.90	0.16	0.08	0.14

Analyte: Octanoylcarnitine (C8) - Lot D2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	1.58	0.33	0.15	0.30
Derivatized - MS/MS non-kit	40	386	2.25	0.49	0.22	0.44
Non-derivatized - MS/MS MassChrom® Chromsystems	16	152	1.96	0.31	0.14	0.27
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	370	2.21	0.26	0.15	0.21
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	518	2.04	0.26	0.15	0.21
Non-derivatized - MS/MS non-kit	18	164	2.32	0.38	0.18	0.33

Decanoylcarnitine (C10) (µmol/L blood)

Analyte: Decanoylcarnitine (C10) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.02	0.01	0.01	0.01
Derivatized - MS/MS non-kit	40	388	0.03	0.03	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	13	130	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	354	0.03	0.03	0.02	0.02
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	484	0.02	0.01	0.00	0.01
Non-derivatized - MS/MS non-kit	16	142	0.04	0.03	0.01	0.03

Analyte: Decanoylcarnitine (C10) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.29	0.07	0.03	0.06
Derivatized - MS/MS non-kit	40	387	0.41	0.16	0.06	0.14
Non-derivatized - MS/MS MassChrom® Chromsystems	14	140	0.38	0.09	0.05	0.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	0.39	0.06	0.03	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	504	0.38	0.06	0.03	0.05
Non-derivatized - MS/MS non-kit	17	152	0.46	0.10	0.04	0.09

Analyte: Decanoylcarnitine (C10) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.56	0.13	0.05	0.12
Derivatized - MS/MS non-kit	40	388	0.80	0.30	0.12	0.28
Non-derivatized - MS/MS MassChrom® Chromsystems	14	140	0.73	0.15	0.09	0.12
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	0.74	0.12	0.07	0.10
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	502	0.73	0.12	0.06	0.10
Non-derivatized - MS/MS non-kit	17	152	0.86	0.17	0.08	0.15

Analyte: Decanoylcarnitine (C10) - Lot D2215 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	1.32	0.32	0.11	0.30
Derivatized - MS/MS non-kit	40	388	2.01	0.69	0.24	0.65
Non-derivatized - MS/MS MassChrom® Chromsystems	14	140	1.78	0.30	0.16	0.26
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	1.88	0.26	0.14	0.22
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	504	1.83	0.31	0.14	0.27
Non-derivatized - MS/MS non-kit	17	152	2.24	0.56	0.32	0.46

Dodecanoylcarnitine (C12) ($\mu\text{mol/L}$ blood)

Analyte: Dodecanoylcarnitine (C12) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.03	0.02	0.01	0.02
Derivatized - MS/MS non-kit	37	352	0.03	0.03	0.02	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	0.01	0.01	0.00	0.00
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	330	0.01	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	47	446	0.01	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	12	106	0.01	0.02	0.01	0.01

Analyte: Dodecanoylcarnitine (C12) - Lot B2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.65	0.18	0.08	0.16
Derivatized - MS/MS non-kit	37	357	0.76	0.27	0.11	0.24
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	0.68	0.13	0.06	0.11
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	0.73	0.11	0.06	0.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	456	0.69	0.09	0.05	0.07
Non-derivatized - MS/MS non-kit	13	112	0.79	0.16	0.07	0.15

Analyte: Dodecanoylcarnitine (C12) - Lot C2215 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.29	0.39	0.20	0.33
Derivatized - MS/MS non-kit	37	358	1.48	0.48	0.20	0.44
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	1.34	0.28	0.16	0.23
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	339	1.44	0.21	0.12	0.16
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	456	1.38	0.19	0.12	0.14
Non-derivatized - MS/MS non-kit	13	110	1.54	0.27	0.14	0.23

Analyte: Dodecanoylcarnitine (C12) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.85	0.57	0.22	0.53
Derivatized - MS/MS non-kit	37	358	2.30	0.68	0.25	0.63
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	1.94	0.32	0.18	0.27
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	2.25	0.30	0.17	0.25
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	456	2.11	0.27	0.16	0.22
Non-derivatized - MS/MS non-kit	13	112	2.42	0.46	0.20	0.42

Myristoylcarnitine (C14) (µmol/L blood)

Analyte: Myristoylcarnitine (C14) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.06	0.03	0.02	0.03
Derivatized - MS/MS non-kit	40	388	0.06	0.04	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.04	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	0.05	0.02	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	488	0.04	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	16	142	0.06	0.02	0.01	0.02

Analyte: Myristoylcarnitine (C14) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.45	0.09	0.06	0.07
Derivatized - MS/MS non-kit	40	387	0.55	0.14	0.07	0.13
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.46	0.08	0.04	0.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	357	0.53	0.07	0.04	0.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	498	0.51	0.07	0.05	0.06
Non-derivatized - MS/MS non-kit	16	142	0.56	0.11	0.05	0.09

Analyte: Myristoylcarnitine (C14) - Lot C2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	1.23	0.25	0.14	0.21
Derivatized - MS/MS non-kit	40	388	1.49	0.37	0.16	0.33
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	1.28	0.23	0.11	0.20
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	1.49	0.18	0.11	0.14
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	498	1.45	0.19	0.11	0.15
Non-derivatized - MS/MS non-kit	16	142	1.56	0.26	0.13	0.23

Analyte: Myristoylcarnitine (C14) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	2.36	0.54	0.24	0.48
Derivatized - MS/MS non-kit	40	388	2.98	0.70	0.30	0.63
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	2.46	0.42	0.23	0.35
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	3.01	0.37	0.23	0.30
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	498	2.90	0.37	0.21	0.30
Non-derivatized - MS/MS non-kit	16	142	3.21	0.57	0.25	0.51

Tetradecenoyl carnitine (C14:1) (µmol/L blood)

Analyte: Tetradecenoyl carnitine (C14:1) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.05	0.04	0.01	0.04
Derivatized - MS/MS non-kit	39	370	0.03	0.03	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	0.03	0.02	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	0.03	0.02	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	490	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	12	113	0.03	0.02	0.01	0.02

Analyte: Tetradecenoyl carnitine (C14:1) - Lot B2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.27	0.09	0.05	0.08
Derivatized - MS/MS non-kit	39	375	0.29	0.11	0.05	0.10
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	0.21	0.07	0.03	0.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	0.26	0.05	0.02	0.04
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	500	0.25	0.04	0.02	0.03
Non-derivatized - MS/MS non-kit	13	120	0.30	0.10	0.04	0.09

Analyte: Tetradecenoyl carnitine (C14:1) - Lot C2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.70	0.16	0.08	0.14
Derivatized - MS/MS non-kit	39	376	0.79	0.26	0.11	0.23
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	0.58	0.15	0.06	0.14
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	0.72	0.12	0.06	0.10
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	500	0.73	0.11	0.06	0.09
Non-derivatized - MS/MS non-kit	13	120	0.83	0.26	0.09	0.24

Analyte: Tetradecenoyl carnitine (C14:1) - Lot D2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.31	0.32	0.12	0.30
Derivatized - MS/MS non-kit	39	376	1.60	0.50	0.17	0.47
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	1.15	0.31	0.12	0.28
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	1.48	0.23	0.11	0.20
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	500	1.49	0.22	0.11	0.19
Non-derivatized - MS/MS non-kit	13	120	1.74	0.57	0.18	0.54

Palmitoylcarnitine (C16) (µmol/L blood)

Analyte: Palmitoylcarnitine (C16) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.61	0.11	0.07	0.08
Derivatized - MS/MS non-kit	40	388	0.68	0.17	0.09	0.14
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	0.63	0.55	0.39	0.39
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	355	0.68	0.14	0.07	0.12
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	498	0.77	0.14	0.08	0.12
Non-derivatized - MS/MS non-kit	17	154	0.69	0.18	0.06	0.17

Analyte: Palmitoylcarnitine (C16) - Lot B2215 - Enrichment 4

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	3.19	0.51	0.30	0.41
Derivatized - MS/MS non-kit	40	388	3.54	0.65	0.32	0.57
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	3.03	0.39	0.22	0.32
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	359	3.57	0.54	0.29	0.46
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	507	4.16	0.69	0.33	0.61
Non-derivatized - MS/MS non-kit	17	154	3.68	0.64	0.32	0.55

Analyte: Palmitoylcarnitine (C16) - Lot C2215 - Enrichment 8

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	5.71	0.61	0.33	0.52
Derivatized - MS/MS non-kit	40	388	6.36	1.17	0.54	1.03
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	5.51	0.75	0.40	0.64
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	6.48	0.89	0.48	0.75
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	508	7.52	1.20	0.59	1.05
Non-derivatized - MS/MS non-kit	17	154	6.63	1.03	0.57	0.86

Analyte: Palmitoylcarnitine (C16) - Lot D2215 - Enrichment 12

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	8.13	1.27	0.64	1.09
Derivatized - MS/MS non-kit	40	388	9.37	1.89	0.86	1.68
Non-derivatized - MS/MS MassChrom® Chromsystems	10	92	7.91	1.16	0.70	0.93
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	360	9.60	1.36	0.73	1.15
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	508	11.00	1.83	0.86	1.61
Non-derivatized - MS/MS non-kit	17	154	9.88	1.50	0.71	1.32

Hydroxypalmitoylcarnitine (C16OH) (µmol/L blood)

Analyte: Hydroxypalmitoylcarnitine (C16OH) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.02	0.02	0.01	0.01
Derivatized - MS/MS non-kit	38	359	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	348	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	503	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS non-kit	13	122	0.01	0.01	0.00	0.01

Analyte: Hydroxypalmitoylcarnitine (C16OH) - Lot B2215 - Enrichment 0.25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.19	0.05	0.03	0.04
Derivatized - MS/MS non-kit	39	373	0.19	0.06	0.03	0.05
Non-derivatized - MS/MS MassChrom® Chromsystems	13	122	0.17	0.08	0.02	0.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	0.17	0.03	0.02	0.03
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	0.18	0.03	0.02	0.03
Non-derivatized - MS/MS non-kit	14	128	0.20	0.07	0.03	0.07

Analyte: Hydroxypalmitoylcarnitine (C16OH) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.70	0.17	0.08	0.15
Derivatized - MS/MS non-kit	39	374	0.73	0.22	0.10	0.19
Non-derivatized - MS/MS MassChrom® Chromsystems	13	122	0.66	0.28	0.07	0.28
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	0.65	0.13	0.05	0.11
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	0.69	0.12	0.06	0.11
Non-derivatized - MS/MS non-kit	14	128	0.77	0.25	0.09	0.24

Analyte: Hydroxypalmitoylcarnitine (C16OH) - Lot D2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.99	0.25	0.12	0.22
Derivatized - MS/MS non-kit	39	374	1.09	0.32	0.12	0.29
Non-derivatized - MS/MS MassChrom® Chromsystems	13	122	0.98	0.44	0.11	0.42
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	358	0.98	0.18	0.08	0.16
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	54	518	1.03	0.18	0.08	0.16
Non-derivatized - MS/MS non-kit	14	128	1.19	0.41	0.12	0.39

Stearoylcarnitine (C18) (µmol/L blood)

Analyte: Stearoylcarnitine (C18) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	0.50	0.10	0.06	0.08
Derivatized - MS/MS non-kit	38	368	0.50	0.17	0.06	0.16
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	0.57	0.13	0.06	0.12
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	0.51	0.10	0.06	0.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	0.53	0.08	0.05	0.06
Non-derivatized - MS/MS non-kit	14	124	0.49	0.09	0.04	0.08

Analyte: Stearoylcarnitine (C18) - Lot B2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	1.21	0.23	0.13	0.19
Derivatized - MS/MS non-kit	38	368	1.17	0.40	0.13	0.37
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	1.36	0.32	0.14	0.29
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	348	1.23	0.17	0.10	0.14
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	1.30	0.16	0.09	0.12
Non-derivatized - MS/MS non-kit	14	124	1.26	0.26	0.12	0.23

Analyte: Stearoylcarnitine (C18) - Lot C2215 - Enrichment 3

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	2.62	0.41	0.25	0.33
Derivatized - MS/MS non-kit	38	368	2.57	0.86	0.24	0.82
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	3.03	0.73	0.41	0.61
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	2.78	0.34	0.21	0.26
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	2.95	0.37	0.23	0.29
Non-derivatized - MS/MS non-kit	14	124	2.73	0.53	0.24	0.48

Analyte: Stearoylcarnitine (C18) - Lot D2215 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	7	70	4.04	0.69	0.34	0.59
Derivatized - MS/MS non-kit	38	368	3.99	1.34	0.40	1.28
Non-derivatized - MS/MS MassChrom® Chromsystems	11	102	4.48	1.10	0.61	0.92
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	350	4.37	0.58	0.37	0.45
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	4.56	0.55	0.33	0.44
Non-derivatized - MS/MS non-kit	14	124	4.39	0.86	0.34	0.78

Hydroxystearoylcarnitine (C18OH) (µmol/L blood)

Analyte: Hydroxystearoylcarnitine (C18OH) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.02	0.02	0.01	0.02
Derivatized - MS/MS non-kit	28	258	0.01	0.01	0.01	0.01
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.00	0.02	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	320	0.00	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	47	435	0.00	0.01	0.00	0.00
Non-derivatized - MS/MS non-kit	7	70	0.01	0.01	0.00	0.01

Analyte: Hydroxystearoylcarnitine (C18OH) - Lot B2215 - Enrichment 0.25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.18	0.05	0.03	0.04
Derivatized - MS/MS non-kit	29	276	0.16	0.06	0.03	0.06
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.12	0.04	0.02	0.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	0.13	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	454	0.14	0.02	0.01	0.02
Non-derivatized - MS/MS non-kit	8	76	0.18	0.10	0.03	0.10

Analyte: Hydroxystearoylcarnitine (C18OH) - Lot C2215 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	0.69	0.18	0.08	0.17
Derivatized - MS/MS non-kit	29	276	0.60	0.23	0.07	0.22
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.46	0.16	0.07	0.15
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	0.53	0.09	0.05	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	454	0.55	0.09	0.05	0.07
Non-derivatized - MS/MS non-kit	8	76	0.68	0.36	0.07	0.36

Analyte: Hydroxystearoylcarnitine (C18OH) - Lot D2215 - Enrichment 1.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Derivatized - MS/MS MassChrom® Chromsystems	6	60	1.02	0.25	0.13	0.22
Derivatized - MS/MS non-kit	29	276	0.92	0.36	0.10	0.34
Non-derivatized - MS/MS MassChrom® Chromsystems	9	82	0.69	0.28	0.14	0.24
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	340	0.81	0.13	0.06	0.11
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	48	454	0.82	0.13	0.08	0.11
Non-derivatized - MS/MS non-kit	8	76	1.05	0.59	0.12	0.57

C20:0-lysophosphatidylcholine (C20-LPC) (µmol/L blood)

Analyte: C20:0-lysophosphatidylcholine (C20-LPC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	0.17	0.08	0.04	0.07

Analyte: C20:0-lysophosphatidylcholine (C20-LPC) - Lot B2215 - Enrichment 0.25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	0.44	0.19	0.08	0.17

Analyte: C20:0-lysophosphatidylcholine (C20-LPC) - Lot C2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	0.7	0.36	0.15	0.33

Analyte: C20:0-lysophosphatidylcholine (C20-LPC) - Lot D2215 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	2.27	0.86	0.3	0.8

C22:0-lysophosphatidylcholine (C22-LPC) (µmol/L blood)

Analyte: C22:0-lysophosphatidylcholine (C22-LPC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	0.12	0.08	0.04	0.07

Analyte: C22:0-lysophosphatidylcholine (C22-LPC) - Lot B2215 - Enrichment 0.25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	0.36	0.14	0.06	0.12

Analyte: C22:0-lysophosphatidylcholine (C22-LPC) - Lot C2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	0.59	0.2	0.09	0.18

Analyte: C22:0-lysophosphatidylcholine (C22-LPC) - Lot D2215 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	25	226	2.1	0.62	0.23	0.58

C24:0-lysophosphatidylcholine (C24-LPC) (µmol/L blood)

Analyte: C24:0-lysophosphatidylcholine (C24-LPC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	305	0.18	0.08	0.04	0.07

Analyte: C24:0-lysophosphatidylcholine (C24-LPC) - Lot B2215 - Enrichment 0.25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	308	0.45	0.15	0.08	0.13

Analyte: C24:0-lysophosphatidylcholine (C24-LPC) - Lot C2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	308	0.73	0.25	0.1	0.22

Analyte: C24:0-lysophosphatidylcholine (C24-LPC) - Lot D2215 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	33	308	2.6	0.78	0.3	0.72

C26:0-lysophosphatidylcholine (C26-LPC) (µmol/L blood)

Analyte: C26:0-lysophosphatidylcholine (C26-LPC) - Lot A2215 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	39	361	0.15	0.08	0.04	0.06
LC-MS/MS negative ion mode	6	60	0.03	0.03	0.01	0.03

Analyte: C26:0-lysophosphatidylcholine (C26-LPC) - Lot B2215 - Enrichment 0.25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	39	366	0.39	0.11	0.06	0.09
LC-MS/MS negative ion mode	6	60	0.24	0.06	0.03	0.05

Analyte: C26:0-lysophosphatidylcholine (C26-LPC) - Lot C2215 - Enrichment 0.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	39	366	0.63	0.17	0.10	0.14
LC-MS/MS negative ion mode	6	60	0.46	0.08	0.05	0.07

Analyte: C26:0-lysophosphatidylcholine (C26-LPC) - Lot D2215 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	39	366	2.27	0.43	0.23	0.36
LC-MS/MS negative ion mode	6	60	1.95	0.31	0.18	0.26

Galactosylceramidase (GALC) ($\mu\text{mol/hr/L}$ blood)

Analyte: Galactosylceramidase (GALC) - Lot A2208 - Mean Activity 0.41

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	14	136	0.33	0.15	0.05	0.14

Analyte: Galactosylceramidase (GALC) - Lot B2208 - Mean Activity 0.82

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	16	156	0.6	0.23	0.07	0.22

Analyte: Galactosylceramidase (GALC) - Lot C2208 - Mean Activity 4.24

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	16	156	3.23	0.8	0.22	0.77

Analyte: Galactosylceramidase (GALC) - Lot D2208 - Mean Activity 8.76

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	16	156	6.12	1.67	0.5	1.59

Acid α -Glucosidase (GAA) ($\mu\text{mol/hr/L}$ blood)

Analyte: Acid α -Glucosidase (GAA) - Lot A2208 - Mean Activity 0.79

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	21	204	0.16	0.1	0.05	0.09

Analyte: Acid α -Glucosidase (GAA) - Lot B2208 - Mean Activity 1.38

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	23	226	0.54	0.21	0.09	0.19

Analyte: Acid α -Glucosidase (GAA) - Lot C2208 - Mean Activity 5.65

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	23	226	3.83	1.15	0.37	1.09

Analyte: Acid α -Glucosidase (GAA) - Lot D2208 - Mean Activity 9.26

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	23	226	6.08	1.77	0.56	1.68

Acid α -Glucosidase (GAA) ($\mu\text{mol/hr/L}$ blood)

Analyte: Acid α -Glucosidase (GAA) - Lot A2208 – Insufficient data

Analyte: Acid α -Glucosidase (GAA) - Lot B2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	55	2.58	0.60	0.41	0.44

Analyte: Acid α -Glucosidase (GAA) - Lot C2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	60	11.95	1.89	1.13	1.52

Analyte: Acid α -Glucosidase (GAA) - Lot D2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	60	18.98	2.47	1.58	1.90

α -L-Iduronidase (IDUA) (μ mol/hr/L blood)

Analyte: α -L-Iduronidase (IDUA) - Lot A2208 - Mean Activity 0.33

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	24	234	0.13	0.11	0.06	0.09

Analyte: α -L-Iduronidase (IDUA) - Lot B2208 - Mean Activity 0.76

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	26	254	0.42	0.17	0.08	0.15

Analyte: α -L-Iduronidase (IDUA) - Lot C2208 - Mean Activity 4.35

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	27	264	3.09	0.76	0.27	0.71

Analyte: α -L-Iduronidase (IDUA) - Lot D2208 - Mean Activity 8.57

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	27	264	5.76	1.48	0.47	1.41

α-L-Iduronidase (IDUA) (μmol/hr/L blood)

Analyte: α-L-Iduronidase (IDUA) - Lot A2208 – Insufficient data for Fluorometric manual

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	40	2.21	0.53	0.31	0.43

Analyte: α-L-Iduronidase (IDUA) - Lot B2208 – Insufficient data for Fluorometric manual

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	57	2.81	0.45	0.26	0.36

Analyte: α-L-Iduronidase (IDUA) - Lot C2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	58	9.90	1.33	0.78	1.08
Fluorometric manual LSD - non-kit	5	48	2.25	0.92	0.51	0.77

Analyte: α-L-Iduronidase (IDUA) - Lot D2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	58	18.06	2.08	1.30	1.62
Fluorometric manual LSD - non-kit	5	48	6.93	4.71	1.23	4.55

α -Galactosidase (GLA) ($\mu\text{mol/hr/L}$ blood)

Analyte: α -Galactosidase (GLA) - Lot A2208 - Mean Activity 3.7

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	20	190	0.97	0.45	0.21	0.4

Analyte: α -Galactosidase (GLA) - Lot B2208 - Mean Activity 4.61

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	20	196	1.68	0.67	0.26	0.62

Analyte: α -Galactosidase (GLA) - Lot C2208 - Mean Activity 11.62

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	20	195	8.10	2.50	0.50	2.45

Analyte: α -Galactosidase (GLA) - Lot D2208 - Mean Activity 20.17

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	20	196	15.23	4.81	0.94	4.71

α -Galactosidase (GLA) ($\mu\text{mol/hr/L}$ blood)

Analyte: α -Galactosidase (GLA) - Lot A2208 – Insufficient data

Analyte: α -Galactosidase (GLA) - Lot B2208 – Insufficient data

Analyte: α -Galactosidase (GLA) - Lot C2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluorometric manual LSD - non-kit	5	50	6.52	4.14	0.86	4.05

Analyte: α -Galactosidase (GLA) - Lot D2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Fluorometric manual LSD - non-kit	5	50	13.06	7.86	1.65	7.69

β -Glucocerebrosidase (ABG) ($\mu\text{mol/hr/L}$ blood)

Analyte: β -Glucocerebrosidase (ABG) - Lot A2208 - Mean Activity 0.72

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	18	170	0.6	0.39	0.16	0.35

Analyte: β -Glucocerebrosidase (ABG) - Lot B2208 - Mean Activity 1.15

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	19	185	0.76	0.41	0.12	0.39

Analyte: β -Glucocerebrosidase (ABG) - Lot C2208 - Mean Activity 4.57

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	19	186	2.83	0.97	0.31	0.91

Analyte: β -Glucocerebrosidase (ABG) - Lot D2208 - Mean Activity 9.76

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	19	186	5.33	1.88	0.53	1.81

Acid Sphingomyelinase (ASM) ($\mu\text{mol/hr/L}$ blood)

Analyte: Acid Sphingomyelinase (ASM) - Lot A2208 - Mean Activity 0.16

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	14	134	0.06	0.06	0.02	0.05

Analyte: Acid Sphingomyelinase (ASM) - Lot B2208 - Mean Activity 0.37

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	14	134	0.17	0.08	0.03	0.08

Analyte: Acid Sphingomyelinase (ASM) - Lot C2208 - Mean Activity 1.69

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	16	154	1.17	0.3	0.12	0.27

Analyte: Acid Sphingomyelinase (ASM) - Lot D2208 - Mean Activity 3.24

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
NeoLSD™ MSMS Kit PerkinElmer	16	154	2.04	0.55	0.21	0.51

17 α -Hydroxyprogesterone (17OHP2) (ng/mL serum)

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot A2111 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	9	71	0.84	1.39	0.67	1.22

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot B2111 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	8.92	2.01	1.17	1.64

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot C2111 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	48.3	8.61	3.97	7.64

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot D2111 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	96.92	20.07	9.14	17.87

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot E2111 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	496.94	75.58	36.69	65.19

4-Androstenedione (4AD) (ng/mL serum)

Analyte: 4-Androstenedione (4AD) - Lot A2111 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	10	80	0.35	0.43	0.28	0.33

Analyte: 4-Androstenedione (4AD) - Lot B2111 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	10.31	2.61	0.87	2.46

Analyte: 4-Androstenedione (4AD) - Lot C2111 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	48.82	8.19	3.44	7.44

Analyte: 4-Androstenedione (4AD) - Lot D2111 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	97.34	19.84	7.53	18.35

Analyte: 4-Androstenedione (4AD) - Lot E2111 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	170	484.95	78.00	28.09	74.83

Cortisol (CORT2) (ng/mL serum)

Analyte: Cortisol (CORT2) - Lot A2111 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	11	89	2.45	3.02	1.76	2.46

Analyte: Cortisol (CORT2) - Lot B2111 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	174	11.49	4.15	2.3	3.46

Analyte: Cortisol (CORT2) - Lot C2111 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	174	46.17	7.72	4.3	6.41

Analyte: Cortisol (CORT2) - Lot D2111 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	174	95.63	16.27	7.72	14.33

Analyte: Cortisol (CORT2) - Lot E2111 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	172	500.39	76.25	43.43	59.22

11-Deoxycortisol (11D2) (ng/mL serum)

Analyte: 11-Deoxycortisol (11D2) - Lot A2111 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	9	74	2.21	5.19	0.79	5.13

Analyte: 11-Deoxycortisol (11D2) - Lot B2111 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	130	11.53	4.65	1.78	4.3

Analyte: 11-Deoxycortisol (11D2) - Lot C2111 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	130	51.73	11.12	6.01	9.35

Analyte: 11-Deoxycortisol (11D2) - Lot D2111 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	130	103.08	21.72	10.47	19.03

Analyte: 11-Deoxycortisol (11D2) - Lot E2111 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	130	484.79	112.56	40.55	106.28

21-Deoxycortisol (21D2) (ng/mL serum)

Analyte: 21-Deoxycortisol (21D2) - Lot A2111 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	9	76	1.86	4.03	1.14	3.86

Analyte: 21-Deoxycortisol (21D2) - Lot B2111 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	134	11.4	4.81	2.24	4.25

Analyte: 21-Deoxycortisol (21D2) - Lot C2111 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	134	45.04	10.27	4.91	9.02

Analyte: 21-Deoxycortisol (21D2) - Lot D2111 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	134	96.65	21.89	9.58	19.68

Analyte: 21-Deoxycortisol (21D2) - Lot E2111 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	132	491.59	93.13	40.78	87.68

Methylmalonic Acid (MMA2) (µmol/L blood)

Analyte: Methylmalonic Acid (MMA2) - Lot A2214 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	178	1.99	0.74	0.38	0.63

Analyte: Methylmalonic Acid (MMA2) - Lot B2214 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	178	4.45	1.25	0.59	1.1

Analyte: Methylmalonic Acid (MMA2) - Lot C2214 - Enrichment 20

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	178	17.98	4.17	1.31	3.96

Analyte: Methylmalonic Acid (MMA2) - Lot D2214 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	178	44.03	10.86	3.32	10.35

Ethylmalonic Acid (EMA2) ($\mu\text{mol/L}$ blood)

Analyte: Ethylmalonic Acid (EMA2) - Lot A2214 - Enrichment 2

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	2.19	0.8	0.46	0.65

Analyte: Ethylmalonic Acid (EMA2) - Lot B2214 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	4.85	1.07	0.44	0.97

Analyte: Ethylmalonic Acid (EMA2) - Lot C2214 - Enrichment 20

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	17.9	4.19	2.2	3.56

Analyte: Ethylmalonic Acid (EMA2) - Lot D2214 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	43.19	7.76	3.14	7.09

2-Methylcitric Acid (MCA2) ($\mu\text{mol/L}$ blood)

Analyte: 2-Methylcitric Acid (MCA2) - Lot A2214 - Enrichment 1

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	12	120	0.96	0.58	0.27	0.51

Analyte: 2-Methylcitric Acid (MCA2) - Lot B2214 - Enrichment 2.5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	12	120	2.15	0.85	0.31	0.79

Analyte: 2-Methylcitric Acid (MCA2) - Lot C2214 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	12	120	8.16	2.49	0.7	2.39

Analyte: 2-Methylcitric Acid (MCA2) - Lot D2214 - Enrichment 25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	12	120	20.7	6.43	1.58	6.24

Total Homocysteine (tHCY2) ($\mu\text{mol/L}$ blood)

Analyte: Total Homocysteine (tHCY2) - Lot A2214 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	172	5.45	3.15	1.01	2.98

Analyte: Total Homocysteine (tHCY2) - Lot B2214 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	180	12.2	5.15	1.9	4.79

Analyte: Total Homocysteine (tHCY2) - Lot C2214 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	180	37.39	14.25	5.47	13.16

Analyte: Total Homocysteine (tHCY2) - Lot D2214 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	18	180	70.61	25.02	7.58	23.85

Alloisoleucine (ALE2) ($\mu\text{mol/L}$ blood)

Analyte: Alloisoleucine (ALE2) - Lot A2213 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	1.23	1.84	0.26	1.82

Analyte: Alloisoleucine (ALE2) - Lot B2213 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	85.86	10.78	6.57	8.55

Analyte: Alloisoleucine (ALE2) - Lot C2213 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	170.92	24.04	15.59	18.31

Analyte: Alloisoleucine (ALE2) - Lot D2213 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	327.73	44.05	24.99	36.28

Analyte: Alloisoleucine (ALE2) - Lot E2213 - Enrichment 800

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	648.53	74.41	35.91	72.68

Isoleucine (ILE2) ($\mu\text{mol/L}$ blood)

Analyte: Isoleucine (ILE2) - Lot A2213 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	116	17.6	4.22	1.87	3.78

Analyte: Isoleucine (ILE2) - Lot B2213 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	116	98.2	29.71	11.92	27.22

Analyte: Isoleucine (ILE2) - Lot C2213 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	116	178.37	44.09	12.82	42.18

Analyte: Isoleucine (ILE2) - Lot D2213 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	116	328.4	82.44	19.54	80.09

Analyte: Isoleucine (ILE2) - Lot E2213 - Enrichment 800

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	13	116	640.42	157.95	33.64	156.67

Leucine (LEU2) ($\mu\text{mol/L}$ blood)

Analyte: Leucine (LEU2) - Lot A2213 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	39.5	9.22	3.51	8.53

Analyte: Leucine (LEU2) - Lot B2213 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	144.14	56.05	9.46	55.24

Analyte: Leucine (LEU2) - Lot C2213 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	246.95	99.94	14.91	98.83

Analyte: Leucine (LEU2) - Lot D2213 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	434.97	194.8	28.95	192.63

Analyte: Leucine (LEU2) - Lot E2213 - Enrichment 800

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	711.55	83.81	33.36	83.14

Phenylalanine (PHE2) ($\mu\text{mol/L}$ blood)

Analyte: Phenylalanine (PHE2) - Lot A2213 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	10	92	25.98	5.91	2.85	5.18

Analyte: Phenylalanine (PHE2) - Lot B2213 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	11	102	116.98	15.27	7.26	13.43

Analyte: Phenylalanine (PHE2) - Lot C2213 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	10	92	205.32	23.56	13.69	19.17

Analyte: Phenylalanine (PHE2) - Lot D2213 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	11	102	379.35	43.88	17.43	40.27

Analyte: Phenylalanine (PHE2) - Lot E2213 - Enrichment 800

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	11	102	723.47	70.70	35.50	64.76

Tyrosine (TYR2) ($\mu\text{mol/L}$ blood)

Analyte: Tyrosine (TYR2) - Lot A2213 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	9	82	25.42	4.27	1.8	3.87

Analyte: Tyrosine (TYR2) - Lot B2213 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	10	92	110.89	20.33	7.7	18.81

Analyte: Tyrosine (TYR2) - Lot C2213 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	9	82	192.18	28.65	11.86	26.08

Analyte: Tyrosine (TYR2) - Lot D2213 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	10	92	363.92	51.88	19.44	48.1

Analyte: Tyrosine (TYR2) - Lot E2213 - Enrichment 800

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	10	92	698.31	85.64	32.23	81.32

Valine (VAL2) ($\mu\text{mol/L}$ blood)

Analyte: Valine (VAL2) - Lot A2213 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	48.99	18.03	6.29	16.89

Analyte: Valine (VAL2) - Lot B2213 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	130.62	36.79	9.96	35.41

Analyte: Valine (VAL2) - Lot C2213 - Enrichment 200

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	209.63	55.16	15.17	53.04

Table:

Analyte: Valine (VAL2) - Lot D2213 - Enrichment 400

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	356.72	91.63	21.12	89.17

Analyte: Valine (VAL2) - Lot E2213 - Enrichment 800

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	126	660.33	157.84	36.16	152.07

This *NEWBORN SCREENING QUALITY ASSURANCE PROGRAM* report is an internal publication distributed to program participants and selected program colleagues. The laboratory quality assurance program is a project cosponsored by the Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories.

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