

Newborn Screening Quality Assurance Program

2023 Set 2 Quality Control Report

In co-sponsorship with Association of Public Health Laboratories (APHL)
Provided by the Newborn Screening and Molecular Biology Branch
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Introduction

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 2 QC data 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, 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 alloisoleucine (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 June 27, 2023, we distributed DBS quality control (QC) materials to 527 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: A2200 – 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 2 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—101. 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 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
AutoDELFIATM Neonatal T4 PerkinElmer	6	54	1.7	0.6	0.3	0.4
DELFIATM Neonatal T4 PerkinElmer	7	63	2.1	1.4	0.6	1.3
GSP® T4 Neonatal PerkinElmer	18	165	1.7	0.5	0.3	0.4

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFIATM Neonatal T4 PerkinElmer	6	54	6.2	1.3	0.6	1.1
DELFIATM Neonatal T4 PerkinElmer	6	60	6.7	1.1	0.6	0.9
GSP® T4 Neonatal PerkinElmer	21	210	6.7	1.4	0.9	1.1

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFIATM Neonatal T4 PerkinElmer	6	54	9.5	2.3	1.1	2.0
DELFIATM Neonatal T4 PerkinElmer	6	60	10.3	1.4	0.9	1.1
GSP® T4 Neonatal PerkinElmer	21	210	11.1	2.0	1.3	1.5

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

Analyte: Thyroid-Stimulating Hormone (TSH) - Lot A2301 - Enrichment 25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal hTSH PerkinElmer	38	368	21.9	5.8	1.7	5.5
DELFI [®] A Neonatal TSH PerkinElmer	54	532	21.7	7.8	2.5	7.4
ZenTech ELISA Neonatal TSH	11	100	19.4	7.7	3.7	6.7
GSP [®] hTSH Neonatal PerkinElmer	95	936	21.7	4.3	2.1	3.7
Neonatal TSH LabSystems	14	140	21.0	7.3	2.8	6.7
DiaSorin Immunoassay TSH	7	70	18.7	5.2	2.2	4.7

Analyte: Thyroid-Stimulating Hormone (TSH) - Lot B2301 - Enrichment 40

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal hTSH PerkinElmer	38	368	37.4	9.9	3.2	9.3
DELFI [®] A Neonatal TSH PerkinElmer	54	531	36.1	12.7	3.6	12.2
ZenTech ELISA Neonatal TSH	11	100	32.9	12.6	6.5	10.8
GSP [®] hTSH Neonatal PerkinElmer	95	936	36.7	7.6	3.5	6.7
Neonatal TSH LabSystems	14	140	35.7	12.2	4.3	11.4
DiaSorin Immunoassay TSH	7	70	31.9	8.2	3.7	7.3

Analyte: Thyroid-Stimulating Hormone (TSH) - Lot C2301 - Enrichment 80

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal hTSH PerkinElmer	38	368	73.6	19.1	6.1	18.1
DELFI [®] A Neonatal TSH PerkinElmer	54	532	71.8	24.8	7.7	23.6
ZenTech ELISA Neonatal TSH	11	100	73.5	32.5	16.1	28.2
GSP [®] hTSH Neonatal PerkinElmer	95	930	74.0	14.3	6.9	12.5
Neonatal TSH LabSystems	14	140	69.0	23.3	6.8	22.3
DiaSorin Immunoassay TSH	7	70	59.9	15.7	6.5	14.3

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

Analyte: 17 α -Hydroxyprogesterone (17OHP) - Lot A2305 - Enrichment 25

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal 17OHP PerkinElmer	32	310	24.7	6.0	2.3	5.5
DELFI [®] A Neonatal 17OHP PerkinElmer	35	342	20.9	5.9	2.8	5.2
ZenTech ELISA Neonatal 17OHP	7	61	22.8	10.7	2.7	10.4
GSP [®] 17OHP Neonatal PerkinElmer	77	754	23.3	3.4	1.9	2.8
Neonatal 17OHP LabSystems	18	177	25.1	8.5	2.2	8.2

Analyte: 17 α -Hydroxyprogesterone (17OHP) - Lot B2305 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal 17OHP PerkinElmer	32	310	49.2	10.7	4.3	9.8
DELFI [®] A Neonatal 17OHP PerkinElmer	35	338	41.9	11.6	4.6	10.7
ZenTech ELISA Neonatal 17OHP	7	62	45.8	22.2	6.7	21.2
GSP [®] 17OHP Neonatal PerkinElmer	77	754	46.8	7.7	4.6	6.2
Neonatal 17OHP LabSystems	18	178	43.9	14.2	5.7	13.0

Analyte: 17 α -Hydroxyprogesterone (17OHP) - Lot C2305 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFI [®] A Neonatal 17OHP PerkinElmer	32	310	102.1	23.1	9.4	21.1
DELFI [®] A Neonatal 17OHP PerkinElmer	35	339	89.4	27.5	10.8	25.2
ZenTech ELISA Neonatal 17OHP	7	62	88.8	42.2	16.8	38.7
GSP [®] 17OHP Neonatal PerkinElmer	77	753	95.3	14.6	8.0	12.2
Neonatal 17OHP LabSystems	18	178	78.8	27.9	15.8	23.0

Total Galactose (TGal) (mg/dL blood)

Analyte: Total Galactose (TGal) - Lot A2305 - Enrichment 5

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
ZenTech Neonatal TGal Enzymatic Colorimetric	12	120	6.0	1.9	0.8	1.8
GSP® TGal Neonatal PerkinElmer	43	424	4.9	1.0	0.5	0.9
Fluorescence TGal Neonatal PerkinElmer	26	248	4.1	1.0	0.5	0.9

Analyte: Total Galactose (TGal) - Lot B2305 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
ZenTech Neonatal TGal Enzymatic Colorimetric	12	120	9.1	2.3	1.2	2.0
GSP® TGal Neonatal PerkinElmer	43	424	10.0	1.9	1.0	1.6
Fluorescence TGal Neonatal PerkinElmer	26	248	9.0	1.9	0.8	1.7

Analyte: Total Galactose (TGal) - Lot C2305 - Enrichment 30

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
ZenTech Neonatal TGal Enzymatic Colorimetric	12	120	19.9	3.3	1.7	2.8
GSP® TGal Neonatal PerkinElmer	42	414	31.8	4.9	3.1	3.8
Fluorescence TGal Neonatal PerkinElmer	26	248	25.2	5.1	2.7	4.3

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	27	252	1.5	0.6	0.3	0.5
Microplate Reagent Kit Spotcheck® GALT Astoria-Pacific, U/g Hb	5	44	0.7	0.1	0.1	0.1

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	27	264	3.7	0.8	0.4	0.7
Microplate Reagent Kit Spotcheck® GALT Astoria-Pacific, U/g Hb	5	44	2.9	0.4	0.3	0.3

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	27	262	9.1	1.7	0.8	1.5
Microplate Reagent Kit Spotcheck® GALT Astoria-Pacific, U/g Hb	5	44	7.4	1.2	0.6	1.1

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
Fluorometric GALT non-kit, qualitative	Insufficient data					
GSP® GALT Neonatal PerkinElmer, U/dL blood	16	134	0.5	0.7	0.2	0.6

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
Fluorometric GALT non-kit, qualitative	5	50	7.5	10.2	0.9	10.1
GSP® GALT Neonatal PerkinElmer, U/dL blood	31	308	4.5	1.1	0.5	0.9

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
Fluorometric GALT non-kit, qualitative	5	50	24.2	36.8	2.7	36.7
GSP® GALT Neonatal PerkinElmer, U/dL blood	31	308	18.6	4.9	1.4	4.7

Immunoreactive Trypsinogen (IRT) (ng/mL blood)

Analyte: Immunoreactive Trypsinogen (IRT) - Lot A2209 - Assayed Values 16.7

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
AutoDELFIATM Neonatal IRT PerkinElmer	35	350	16.9	2.5	1.5	2.0
DELFIATM Neonatal IRT	21	201	16.1	3.5	1.9	2.9
ZenTech ELISA Neonatal IRT	5	44	26.5	8.3	4.5	7.0
FEIA IRT Labsystems	9	89	16.4	10.1	6.3	7.9
GSP® IRT Neonatal PerkinElmer, ng/mL blood	64	623	16.8	2.2	1.3	1.8

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
AutoDELFIATM Neonatal IRT PerkinElmer	36	359	62.7	8.6	4.9	7.1
DELFIATM Neonatal IRT	21	202	58.3	10.2	6.0	8.3
ZenTech ELISA Neonatal IRT	5	44	113.4	21.5	12.1	17.8
FEIA IRT Labsystems	9	90	61.8	21.6	12.4	17.6
GSP® IRT Neonatal PerkinElmer, ng/mL blood	66	651	63.7	6.9	4.2	5.4

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
AutoDELFIATM Neonatal IRT PerkinElmer	36	360	130.7	15.8	9.2	12.8
DELFIATM Neonatal IRT	21	202	125.1	20.5	11.3	17.0
ZenTech ELISA Neonatal IRT	5	44	161.2	28.5	14.7	24.4
FEIA IRT Labsystems	9	83	139.0	40.9	20.1	35.6
GSP® IRT Neonatal PerkinElmer, ng/mL blood	66	652	132.3	15.5	9.3	12.4

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
AutoDELFIATM Neonatal IRT PerkinElmer	36	360	240.0	30.1	17.4	24.6
DELFIATM Neonatal IRT	20	200	219.5	38.6	22.2	31.6
ZenTech ELISA Neonatal IRT	5	44	186.9	37.4	19.7	31.8
FEIA IRT Labsystems	9	90	268.7	64.1	35.0	53.8
GSP® IRT Neonatal PerkinElmer, ng/mL blood	66	652	242.9	27.9	16.8	22.3

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	8	74	192.39	44.08	14.29	41.70
Derivatized - MS/MS non-kit	34	335	236.32	66.43	26.46	60.93
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	163.95	44.79	13.05	42.85
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	273.63	45.59	23.26	39.21
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	441	255.50	52.92	29.31	44.06
Non-derivatized - MS/MS non-kit	15	144	219.45	45.91	19.72	41.46

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	8	74	297.60	58.58	18.83	55.48
Derivatized - MS/MS non-kit	34	338	370.46	95.11	40.28	86.15
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	252.32	64.14	17.97	61.57
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	430.61	64.42	29.41	57.32
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	443	400.38	80.89	40.60	69.96
Non-derivatized - MS/MS non-kit	15	144	357.37	73.33	30.78	66.56

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	8	74	433.11	91.12	36.67	83.42
Derivatized - MS/MS non-kit	34	337	521.41	127.93	49.03	118.16
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	360.91	82.71	26.73	78.27
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	623.19	98.04	43.74	87.74
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	444	579.19	112.91	56.82	97.57
Non-derivatized - MS/MS non-kit	15	144	503.63	113.11	43.08	104.59

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	8	74	533.35	97.35	35.49	90.65
Derivatized - MS/MS non-kit	34	338	660.02	163.95	58.47	153.17
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	463.10	111.73	31.45	107.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	783.96	109.86	49.75	97.95
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	46	443	723.01	153.79	79.26	131.80
Non-derivatized - MS/MS non-kit	15	143	632.85	126.58	49.35	116.57

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	9	84	6.11	2.13	0.72	2.00
Derivatized - MS/MS non-kit	37	368	5.53	6.16	4.12	4.58
Non-derivatized - MS/MS MassChrom® Chromsystems	10	99	5.64	3.94	2.27	3.22
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	334	4.06	1.10	0.47	0.99
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	508	4.24	1.36	0.78	1.11
Non-derivatized - MS/MS non-kit	15	141	4.74	1.94	0.64	1.83

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	9	84	80.73	15.13	5.33	14.16
Derivatized - MS/MS non-kit	37	370	63.87	25.82	7.60	24.67
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	79.04	16.39	9.22	13.55
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	77.12	11.41	4.74	10.38
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	518	82.71	13.68	6.76	11.89
Non-derivatized - MS/MS non-kit	15	142	76.97	18.31	6.69	17.04

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	9	84	152.93	23.13	9.93	20.89
Derivatized - MS/MS non-kit	37	370	125.05	50.54	15.96	47.95
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	157.44	40.64	18.98	35.94
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	337	155.43	25.04	11.15	22.42
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	518	164.56	30.34	16.74	25.31
Non-derivatized - MS/MS non-kit	15	142	154.42	35.82	14.63	32.69

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	9	84	208.02	27.38	13.50	23.83
Derivatized - MS/MS non-kit	37	370	182.13	72.57	22.48	69.00
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	226.36	52.85	25.89	46.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	337	230.50	37.45	15.08	34.28
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	514	243.25	34.07	15.90	30.13
Non-derivatized - MS/MS non-kit	15	142	261.40	143.83	20.43	142.37

Citrulline (Cit) ($\mu\text{mol/L}$ 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	9	84	12.46	2.06	1.14	1.72
Derivatized - MS/MS non-kit	38	378	11.92	3.36	1.89	2.78
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	13.01	2.52	1.68	1.87
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	357	13.31	2.45	1.47	1.96
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	56	547	12.52	2.17	1.27	1.76
Non-derivatized - MS/MS non-kit	21	204	12.49	3.63	2.04	3.00

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	9	84	30.62	4.69	2.60	3.90
Derivatized - MS/MS non-kit	38	379	29.07	6.66	2.79	6.05
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	33.06	6.19	3.18	5.32
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	358	32.77	4.94	3.00	3.92
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	557	32.44	4.67	2.71	3.80
Non-derivatized - MS/MS non-kit	21	203	32.14	6.98	3.86	5.82

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	9	84	87.30	13.58	6.17	12.10
Derivatized - MS/MS non-kit	38	380	81.72	19.05	8.24	17.18
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	94.28	14.82	6.93	13.09
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	358	93.63	12.13	6.76	10.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	556	91.56	12.79	6.45	11.04
Non-derivatized - MS/MS non-kit	21	204	90.50	18.12	9.03	15.71

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	9	84	191.60	27.75	11.03	25.46
Derivatized - MS/MS non-kit	38	380	185.32	40.93	16.32	37.54
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	211.28	33.34	13.81	30.35
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	358	212.66	25.36	13.98	21.15
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	557	203.31	26.66	14.15	22.59
Non-derivatized - MS/MS non-kit	21	204	204.40	44.60	21.68	38.97

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	5	50	184.43	24.13	13.42	20.05

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	6	60	183.46	89.78	21.56	87.15

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	5	50	318.92	47.42	24.57	40.55

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	5	47	432.81	70.79	30.63	63.81

Glycine (Gly) ($\mu\text{mol/L}$ 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	8	74	228.74	40.91	18.29	36.60
Derivatized - MS/MS non-kit	29	285	257.20	68.58	26.31	63.33
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	180.34	30.39	13.35	27.30
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	305	285.32	61.98	24.53	56.92
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	40	384	268.64	50.06	22.85	44.54
Non-derivatized - MS/MS non-kit	10	94	206.86	70.13	39.31	58.07

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	8	74	416.61	77.29	36.41	68.17
Derivatized - MS/MS non-kit	29	284	471.48	123.35	48.59	113.37
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	318.56	55.83	25.27	49.78
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	305	512.46	95.34	35.60	88.44
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	40	384	492.85	87.59	43.32	76.13
Non-derivatized - MS/MS non-kit	10	94	371.01	120.79	69.32	98.92

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	8	74	644.66	121.64	57.58	107.15
Derivatized - MS/MS non-kit	29	285	716.10	193.99	66.80	182.13
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	483.52	72.24	29.02	66.16
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	304	778.21	152.45	61.67	139.42
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	40	384	758.28	130.34	65.47	112.71
Non-derivatized - MS/MS non-kit	10	94	547.93	140.11	60.34	126.45

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	8	74	817.98	146.74	61.50	133.23
Derivatized - MS/MS non-kit	29	282	927.78	237.83	86.19	221.67
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	624.78	96.33	36.91	88.98
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	306	1015.96	186.83	69.36	173.48
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	40	384	969.43	167.85	74.21	150.56
Non-derivatized - MS/MS non-kit	10	94	744.87	193.01	88.65	171.45

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	8	80	0.99	0.49	0.14	0.47

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	8	80	4.53	1.89	0.38	1.85

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	8	80	8.04	3.39	0.58	3.34

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	8	80	15	6.52	1.35	6.38

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
LC-MS/MS non-kit	6	60	79.69	17.21	5.99	16.13
Derivatized - MS/MS MassChrom® Chromsystems	9	86	65.00	11.07	5.51	9.60
Derivatized - MS/MS non-kit	37	368	74.05	19.91	8.60	17.96
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	81.15	12.50	6.00	10.96
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	89.65	13.90	6.74	12.16
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	600	81.69	11.45	6.02	9.74
Non-derivatized - MS/MS non-kit	21	202	82.49	13.09	6.76	11.22

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	6	60	192.93	31.03	14.68	27.34
Derivatized - MS/MS MassChrom® Chromsystems	9	86	152.80	27.99	11.83	25.37
Derivatized - MS/MS non-kit	37	368	176.37	32.79	13.77	29.76
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	179.05	24.71	12.25	21.47
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	203.46	27.93	13.01	24.71
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	599	186.54	24.74	13.40	20.80
Non-derivatized - MS/MS non-kit	21	202	187.16	26.44	13.38	22.81

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	6	60	302.50	47.15	31.27	35.29
Derivatized - MS/MS MassChrom® Chromsystems	9	86	255.86	45.67	16.88	42.44
Derivatized - MS/MS non-kit	37	368	281.71	58.72	22.74	54.14
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	286.48	36.92	21.15	30.26
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	325.75	44.52	21.84	38.79
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	599	299.21	38.67	20.83	32.58
Non-derivatized - MS/MS non-kit	21	202	297.64	46.11	22.96	39.99

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	6	60	558.82	71.80	43.70	56.97
Derivatized - MS/MS MassChrom® Chromsystems	9	86	453.62	85.52	30.67	79.83
Derivatized - MS/MS non-kit	37	368	509.92	101.74	38.78	94.06
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	514.34	77.97	45.61	63.23
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	592.42	85.57	38.60	76.37
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	600	530.94	73.94	40.39	61.93
Non-derivatized - MS/MS non-kit	21	202	527.95	95.62	42.52	85.64

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
LC-MS/MS non-kit	5	50	10.39	4.85	2.12	4.36
Derivatized - MS/MS MassChrom® Chromsystems	9	82	9.33	2.74	0.98	2.56
Derivatized - MS/MS non-kit	38	370	9.68	2.85	1.50	2.42
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	7.77	1.75	0.83	1.54
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	364	9.52	2.16	1.00	1.91
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	570	7.79	1.33	0.80	1.07
Non-derivatized - MS/MS non-kit	22	212	8.71	1.96	1.03	1.67

Analyte: Methionine (Met) - Lot B2215 - 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	50.06	13.12	6.76	11.25
Derivatized - MS/MS MassChrom® Chromsystems	9	82	41.38	11.78	3.60	11.22
Derivatized - MS/MS non-kit	38	373	44.99	8.41	4.23	7.27
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	35.99	5.62	2.69	4.94
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	366	43.19	5.73	3.06	4.84
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	570	39.22	5.89	3.35	4.85
Non-derivatized - MS/MS non-kit	22	212	41.96	7.89	3.58	7.04

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	130.94	17.85	9.27	15.26
Derivatized - MS/MS MassChrom® Chromsystems	9	82	111.50	30.74	8.82	29.45
Derivatized - MS/MS non-kit	38	374	118.44	22.36	10.00	20.00
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	99.64	13.54	6.71	11.76
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	366	119.24	14.68	7.90	12.38
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	569	108.13	15.11	8.27	12.65
Non-derivatized - MS/MS non-kit	22	212	115.00	22.54	9.33	20.52

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	211.35	36.87	16.85	32.79
Derivatized - MS/MS MassChrom® Chromsystems	9	82	176.96	45.93	12.54	44.18
Derivatized - MS/MS non-kit	38	374	191.73	36.29	16.02	32.57
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	165.43	24.22	10.46	21.84
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	366	200.18	24.22	13.12	20.36
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	570	180.61	31.55	19.33	24.93
Non-derivatized - MS/MS non-kit	22	212	191.10	38.62	15.68	35.29

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	8	74	111.01	17.35	9.80	14.32
Derivatized - MS/MS non-kit	31	309	79.02	33.62	11.01	31.77
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	138.68	48.36	18.64	44.63
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	304	104.04	17.56	8.98	15.09
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	398	101.97	18.36	7.39	16.81
Non-derivatized - MS/MS non-kit	14	132	88.59	24.52	8.62	22.95

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	8	74	178.98	31.03	14.61	27.37
Derivatized - MS/MS non-kit	31	310	132.18	56.13	16.99	53.50
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	200.97	51.44	13.18	49.72
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	304	173.69	27.07	12.11	24.21
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	398	169.09	31.45	13.14	28.57
Non-derivatized - MS/MS non-kit	14	132	146.83	37.82	13.11	35.47

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	8	74	250.75	43.46	21.40	37.82
Derivatized - MS/MS non-kit	31	310	185.19	77.58	20.09	74.93
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	283.85	62.88	18.41	60.13
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	304	240.29	38.57	17.77	34.23
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	398	236.57	42.17	16.35	38.87
Non-derivatized - MS/MS non-kit	14	132	200.39	51.96	19.26	48.26

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	8	74	315.73	47.34	21.90	41.96
Derivatized - MS/MS non-kit	31	310	241.20	94.88	26.00	91.25
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	359.62	86.61	16.27	85.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	304	310.65	46.39	21.83	40.93
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	398	301.48	54.31	21.03	50.08
Non-derivatized - MS/MS non-kit	14	132	261.76	64.23	21.69	60.45

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
LC-MS/MS non-kit	6	56	37.64	7.03	4.08	5.73
Derivatized - MS/MS MassChrom® Chromsystems	10	94	35.66	5.57	2.61	4.91
Derivatized - MS/MS non-kit	39	387	34.82	6.22	3.10	5.40
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	35.76	4.77	2.87	3.81
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo) Siemens	5	50	35.07	2.84	1.69	2.28
Non-derivatized - MS/MS NeoBase™ PerkinElmer	41	396	36.62	5.62	2.86	4.85
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	598	32.40	4.21	2.31	3.52
Non-derivatized - MS/MS non-kit	22	210	34.55	5.20	2.69	4.45
Neonatal Phe LabSystems	9	86	37.44	23.26	5.35	22.64
Neonatal® Phe Kit PerkinElmer	6	59	51.34	20.20	11.93	16.30

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	6	56	169.03	25.50	13.90	21.38
Derivatized - MS/MS MassChrom® Chromsystems	10	94	156.04	18.20	8.61	16.04
Derivatized - MS/MS non-kit	39	388	157.44	31.62	16.47	27.00
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	160.20	18.90	10.69	15.58
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo) Siemens	5	50	162.62	16.30	9.39	13.32
Non-derivatized - MS/MS NeoBase™ PerkinElmer	41	396	166.60	26.08	13.87	22.09
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	599	150.70	19.47	10.68	16.27
Non-derivatized - MS/MS non-kit	22	210	157.47	20.25	10.96	17.02
Neonatal Phe LabSystems	10	100	175.84	40.25	14.58	37.51
Neonatal® Phe Kit PerkinElmer	6	60	162.87	27.04	18.14	20.06

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	6	56	298.39	38.16	17.23	34.04
Derivatized - MS/MS MassChrom® Chromsystems	10	94	285.59	36.30	18.88	31.00
Derivatized - MS/MS non-kit	39	386	277.17	49.27	22.54	43.81
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	291.85	34.53	17.79	29.60
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo) Siemens	5	50	285.80	30.89	16.30	26.24
Non-derivatized - MS/MS NeoBase™ PerkinElmer	41	396	298.10	44.98	24.77	37.55
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	600	270.07	34.22	17.54	29.38
Non-derivatized - MS/MS non-kit	22	210	282.07	40.14	22.00	33.58
Neonatal Phe LabSystems	10	100	317.32	74.48	28.08	68.99
Neonatal® Phe Kit PerkinElmer	6	60	282.66	54.25	34.87	41.55

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	6	56	443.10	71.22	23.48	67.24
Derivatized - MS/MS MassChrom® Chromsystems	10	94	402.62	50.87	26.05	43.70
Derivatized - MS/MS non-kit	39	386	397.04	69.79	31.45	62.30
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	420.05	50.45	26.49	42.93
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo)Siemens	5	50	400.01	32.06	20.77	24.42
Non-derivatized - MS/MS NeoBase™ PerkinElmer	41	396	432.04	55.53	27.29	48.35
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	599	384.22	50.10	27.66	41.77
Non-derivatized - MS/MS non-kit	22	208	403.70	62.98	30.24	55.25
Neonatal Phe LabSystems	10	100	478.06	119.27	41.59	111.79
Neonatal® Phe Kit PerkinElmer	6	60	394.08	60.02	36.33	47.78

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	6	52	0.49	0.23	0.09	0.22
Derivatized - MS/MS non-kit	19	184	0.57	0.51	0.18	0.47
Non-derivatized - MS/MS MassChrom® Chromsystems	6	56	0.63	0.23	0.09	0.22
Non-derivatized - MS/MS NeoBase™ PerkinElmer	29	276	0.61	0.37	0.13	0.34
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	41	380	0.22	0.18	0.07	0.17
Non-derivatized - MS/MS non-kit	13	127	0.70	0.81	0.21	0.79

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	6	52	1.66	0.40	0.16	0.36
Derivatized - MS/MS non-kit	19	186	1.76	1.03	0.31	0.98
Non-derivatized - MS/MS MassChrom® Chromsystems	6	60	1.50	0.26	0.15	0.22
Non-derivatized - MS/MS NeoBase™ PerkinElmer	29	276	1.28	0.49	0.19	0.46
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	42	406	0.69	0.31	0.14	0.27
Non-derivatized - MS/MS non-kit	13	128	1.64	0.97	0.37	0.89

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	6	52	5.67	1.54	0.75	1.35
Derivatized - MS/MS non-kit	19	186	5.39	3.50	0.66	3.44
Non-derivatized - MS/MS MassChrom® Chromsystems	6	60	4.34	0.84	0.36	0.77
Non-derivatized - MS/MS NeoBase™ PerkinElmer	29	276	3.52	1.07	0.42	0.98
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	42	405	2.33	0.80	0.38	0.71
Non-derivatized - MS/MS non-kit	13	128	4.90	2.41	0.70	2.31

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	6	52	10.49	3.26	1.76	2.74
Derivatized - MS/MS non-kit	19	186	9.87	6.44	1.24	6.32
Non-derivatized - MS/MS MassChrom® Chromsystems	6	60	8.11	1.96	0.70	1.83
Non-derivatized - MS/MS NeoBase™ PerkinElmer	29	276	6.07	1.81	0.64	1.69
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	42	406	4.26	1.20	0.59	1.05
Non-derivatized - MS/MS non-kit	13	128	8.27	4.75	0.95	4.65

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
LC-MS/MS non-kit	5	46	26.83	5.86	3.98	4.30
Derivatized - MS/MS MassChrom® Chromsystems	10	96	29.84	5.14	2.52	4.47
Derivatized - MS/MS non-kit	38	374	27.63	6.42	3.20	5.57
Non-derivatized - MS/MS MassChrom® Chromsystems	11	109	30.86	5.68	2.07	5.29
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	31.57	5.92	3.34	4.89
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	572	28.10	4.36	2.29	3.71
Non-derivatized - MS/MS non-kit	21	202	27.15	5.12	2.35	4.55

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	46	247.32	45.02	22.05	39.25
Derivatized - MS/MS MassChrom® Chromsystems	10	96	271.84	37.88	17.06	33.81
Derivatized - MS/MS non-kit	38	374	257.00	53.17	26.04	46.35
Non-derivatized - MS/MS MassChrom® Chromsystems	11	109	276.55	40.77	14.31	38.18
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	284.60	39.87	20.94	33.93
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	572	256.38	35.05	18.63	29.69
Non-derivatized - MS/MS non-kit	21	202	253.88	36.72	17.99	32.02

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	46	493.40	69.50	39.42	57.24
Derivatized - MS/MS MassChrom® Chromsystems	10	95	533.30	81.96	39.30	71.92
Derivatized - MS/MS non-kit	38	374	495.59	103.51	48.44	91.48
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	540.56	77.19	30.92	70.73
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	554.61	82.07	43.81	69.41
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	572	496.92	66.10	34.68	56.28
Non-derivatized - MS/MS non-kit	21	202	490.09	82.52	40.03	72.16

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	46	712.35	56.50	34.26	44.93
Derivatized - MS/MS MassChrom® Chromsystems	10	96	754.51	107.51	50.17	95.09
Derivatized - MS/MS non-kit	38	373	720.72	158.80	75.59	139.66
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	789.21	122.71	39.61	116.14
Non-derivatized - MS/MS NeoBase™ PerkinElmer	39	372	813.23	116.20	62.45	97.99
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	572	715.45	96.77	52.22	81.48
Non-derivatized - MS/MS non-kit	21	202	715.09	121.74	55.12	108.55

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
LC-MS/MS non-kit	5	48	79.11	11.95	6.18	10.23
Derivatized - MS/MS MassChrom® Chromsystems	9	86	72.62	15.55	4.52	14.88
Derivatized - MS/MS non-kit	36	346	94.53	54.65	18.01	51.59
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	66.39	13.13	5.28	12.02
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	368	83.87	15.30	7.05	13.57
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	543	78.14	10.62	5.79	8.90
Non-derivatized - MS/MS non-kit	20	192	69.08	14.11	6.11	12.72

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	212.42	51.96	22.51	46.83
Derivatized - MS/MS MassChrom® Chromsystems	9	86	191.21	34.14	12.91	31.60
Derivatized - MS/MS non-kit	36	346	220.25	67.22	35.97	56.78
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	182.33	34.12	14.99	30.65
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	368	236.77	37.58	16.54	33.74
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	544	222.43	29.26	15.51	24.81
Non-derivatized - MS/MS non-kit	20	192	194.00	34.28	14.38	31.12

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	329.11	73.29	28.40	67.56
Derivatized - MS/MS MassChrom® Chromsystems	9	86	306.03	54.15	22.15	49.41
Derivatized - MS/MS non-kit	36	349	332.42	86.01	42.56	74.75
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	290.51	55.42	21.01	51.28
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	368	374.77	62.56	26.98	56.45
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	544	351.82	47.38	26.02	39.60
Non-derivatized - MS/MS non-kit	20	192	301.54	55.64	24.45	49.98

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

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	5	50	431.61	76.19	27.16	71.18
Derivatized - MS/MS MassChrom® Chromsystems	9	86	395.06	62.61	24.79	57.49
Derivatized - MS/MS non-kit	36	350	426.59	90.77	41.99	80.48
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	381.52	65.82	20.34	62.60
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	368	494.17	80.03	34.81	72.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	544	460.79	60.47	31.64	51.54
Non-derivatized - MS/MS non-kit	20	192	398.01	76.26	33.47	68.52

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	10	94	11.64	2.21	0.83	2.05
Derivatized - MS/MS non-kit	39	387	13.93	3.40	1.42	3.09
Non-derivatized - MS/MS MassChrom® Chromsystems	12	119	11.98	2.35	0.99	2.13
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	12.24	1.91	0.94	1.66
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	606	12.67	1.97	1.12	1.63
Non-derivatized - MS/MS non-kit	21	202	12.33	2.36	1.01	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	10	94	21.38	3.58	1.41	3.29
Derivatized - MS/MS non-kit	39	386	26.93	6.45	2.53	5.93
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	21.25	4.43	1.83	4.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	21.60	3.09	1.43	2.74
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	606	22.64	3.41	1.85	2.86
Non-derivatized - MS/MS non-kit	21	202	21.87	3.76	1.54	3.44

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	10	94	32.77	6.28	2.34	5.83
Derivatized - MS/MS non-kit	39	385	40.17	9.53	3.70	8.78
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	31.15	5.80	2.32	5.32
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	31.92	4.73	2.17	4.20
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	606	33.36	5.24	2.94	4.34
Non-derivatized - MS/MS non-kit	21	202	32.19	5.93	2.51	5.37

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	10	94	42.62	7.99	2.90	7.44
Derivatized - MS/MS non-kit	39	383	53.30	12.43	5.19	11.29
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	41.13	7.80	2.92	7.24
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	42.28	6.19	2.96	5.44
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	605	43.01	6.56	3.56	5.51
Non-derivatized - MS/MS non-kit	21	202	42.29	8.18	3.42	7.43

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	10	94	7.65	1.82	0.51	1.75
Derivatized - MS/MS non-kit	38	369	9.45	2.19	0.91	1.99
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	6.17	1.05	0.47	0.94
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	6.90	0.99	0.54	0.83
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	548	6.38	0.84	0.39	0.74
Non-derivatized - MS/MS non-kit	20	191	7.25	1.85	0.74	1.70

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	10	94	14.58	2.47	1.04	2.24
Derivatized - MS/MS non-kit	38	372	18.34	4.95	2.13	4.46
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	13.17	1.74	0.68	1.60
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	15.05	1.76	1.00	1.44
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	547	14.02	1.95	1.05	1.64
Non-derivatized - MS/MS non-kit	20	192	15.98	3.67	1.27	3.45

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	10	94	22.14	3.37	1.51	3.01
Derivatized - MS/MS non-kit	38	372	27.15	7.34	2.74	6.81
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	20.65	3.17	1.60	2.73
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	23.47	3.05	1.64	2.57
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	548	21.85	2.86	1.48	2.45
Non-derivatized - MS/MS non-kit	20	192	24.74	5.88	2.35	5.39

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	10	94	28.63	4.24	2.11	3.68
Derivatized - MS/MS non-kit	38	372	35.41	9.36	3.37	8.73
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	27.89	4.11	1.90	3.65
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	350	31.47	3.88	2.07	3.28
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	544	28.79	3.38	1.65	2.95
Non-derivatized - MS/MS non-kit	20	192	32.76	7.80	2.93	7.23

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	9	84	0.91	0.15	0.07	0.13
Derivatized - MS/MS non-kit	39	382	1.11	0.36	0.16	0.32
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	0.84	0.15	0.07	0.13
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	342	0.96	0.14	0.08	0.12
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	587	1.08	0.17	0.09	0.15
Non-derivatized - MS/MS non-kit	20	200	1.04	0.24	0.09	0.23

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	9	84	3.41	0.53	0.22	0.49
Derivatized - MS/MS non-kit	39	383	4.23	0.98	0.43	0.88
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	3.19	0.50	0.20	0.46
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	342	3.70	0.46	0.25	0.39
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	595	4.29	0.68	0.34	0.59
Non-derivatized - MS/MS non-kit	20	200	4.05	0.94	0.34	0.87

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	9	84	6.29	1.06	0.49	0.95
Derivatized - MS/MS non-kit	39	378	7.35	1.57	0.71	1.40
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	5.82	0.98	0.42	0.89
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	342	6.73	0.88	0.48	0.74
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	596	7.71	1.14	0.60	0.97
Non-derivatized - MS/MS non-kit	20	200	7.20	1.56	0.64	1.42

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	9	84	8.44	1.32	0.51	1.21
Derivatized - MS/MS non-kit	39	381	10.20	2.20	0.98	1.97
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	8.08	1.19	0.51	1.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	36	342	9.36	1.18	0.63	0.99
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	596	10.52	1.55	0.76	1.36
Non-derivatized - MS/MS non-kit	20	200	9.91	2.13	0.93	1.92

Malonylcarnitine (C3DC) (µmol/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	64	0.04	0.03	0.01	0.03
Derivatized - MS/MS non-kit	36	350	0.03	0.04	0.02	0.03

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	64	0.47	0.13	0.05	0.12
Derivatized - MS/MS non-kit	38	377	0.36	0.21	0.07	0.20

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	64	1.36	0.42	0.15	0.39
Derivatized - MS/MS non-kit	38	376	1.04	0.60	0.15	0.58

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	64	2.52	0.71	0.20	0.69
Derivatized - MS/MS non-kit	38	375	2.03	1.10	0.27	1.07

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	34	324	0.04	0.03	0.02	0.03
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	496	0.04	0.03	0.02	0.02
Non-derivatized - MS/MS non-kit	11	104	0.06	0.04	0.01	0.04

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	34	325	0.36	0.07	0.03	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	507	0.56	4.39	2.86	3.33
Non-derivatized - MS/MS non-kit	12	114	0.47	0.33	0.08	0.32

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	34	326	0.76	0.16	0.06	0.14
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	506	0.90	0.23	0.11	0.20
Non-derivatized - MS/MS non-kit	12	113	0.99	0.71	0.17	0.69

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	34	326	1.69	0.34	0.12	0.32
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	504	1.94	0.43	0.17	0.40
Non-derivatized - MS/MS non-kit	12	114	2.15	1.48	0.27	1.46

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	9	84	0.10	0.02	0.01	0.02
Derivatized - MS/MS non-kit	38	378	0.12	0.07	0.03	0.06
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.09	0.03	0.02	0.03
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	332	0.12	0.03	0.02	0.03
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	552	0.09	0.02	0.01	0.02
Non-derivatized - MS/MS non-kit	17	164	0.11	0.09	0.03	0.09

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	9	84	0.63	0.12	0.05	0.10
Derivatized - MS/MS non-kit	38	378	0.76	0.22	0.12	0.18
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.63	0.09	0.04	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	332	0.71	0.09	0.05	0.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	562	0.65	0.08	0.05	0.07
Non-derivatized - MS/MS non-kit	18	174	0.66	0.16	0.06	0.15

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	9	84	1.79	0.29	0.16	0.25
Derivatized - MS/MS non-kit	38	378	2.03	0.53	0.26	0.46
Non-derivatized - MS/MS MassChrom® Chromsystems	9	89	1.75	0.24	0.10	0.22
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	1.95	0.27	0.14	0.23
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	562	1.80	0.23	0.12	0.19
Non-derivatized - MS/MS non-kit	18	174	1.79	0.41	0.16	0.37

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	9	84	2.85	0.40	0.20	0.35
Derivatized - MS/MS non-kit	38	375	3.20	0.72	0.36	0.62
Non-derivatized - MS/MS MassChrom® Chromsystems	9	89	2.85	0.39	0.21	0.32
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	332	3.17	0.39	0.21	0.33
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	562	2.94	0.77	0.51	0.58
Non-derivatized - MS/MS non-kit	18	174	2.88	0.63	0.24	0.58

Hydroxybutyrylcarnitine (C4OH) ($\mu\text{mol/L}$ 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	7	64	0.06	0.03	0.01	0.02
Derivatized - MS/MS non-kit	33	323	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	7	64	0.35	0.11	0.05	0.10
Derivatized - MS/MS non-kit	33	325	0.35	0.14	0.06	0.13

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	7	64	0.68	0.19	0.09	0.16
Derivatized - MS/MS non-kit	33	325	0.66	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	7	64	1.52	0.40	0.15	0.37
Derivatized - MS/MS non-kit	33	326	1.54	0.66	0.24	0.61

Isovalerylcarnitine (C5) ($\mu\text{mol/L}$ 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	10	96	0.07	0.02	0.01	0.02
Derivatized - MS/MS non-kit	39	387	0.07	0.04	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	12	119	0.08	0.08	0.02	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	362	0.06	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	60	588	0.05	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	20	190	0.06	0.02	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	10	96	0.45	0.07	0.05	0.06
Derivatized - MS/MS non-kit	39	387	0.46	0.11	0.05	0.09
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	0.43	0.07	0.04	0.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	362	0.44	0.07	0.03	0.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	598	0.42	0.06	0.03	0.05
Non-derivatized - MS/MS non-kit	22	210	0.44	0.09	0.04	0.08

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	10	96	1.29	0.22	0.13	0.18
Derivatized - MS/MS non-kit	39	388	1.26	0.32	0.16	0.28
Non-derivatized - MS/MS MassChrom® Chromsystems	12	119	1.19	0.18	0.10	0.15
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	362	1.25	0.18	0.09	0.16
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	598	1.19	0.17	0.09	0.14
Non-derivatized - MS/MS non-kit	22	210	1.25	0.24	0.10	0.22

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	10	96	2.39	0.36	0.20	0.30
Derivatized - MS/MS non-kit	39	388	2.38	0.52	0.25	0.46
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	2.26	0.42	0.21	0.36
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	362	2.44	0.37	0.17	0.32
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	598	2.25	0.30	0.16	0.25
Non-derivatized - MS/MS non-kit	21	208	2.40	0.47	0.21	0.42

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	9	84	0.02	0.02	0.01	0.02
Derivatized - MS/MS non-kit	38	368	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	6	60	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	0.01	0.01	0.00	0.00
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	50	486	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS non-kit	16	152	0.02	0.02	0.01	0.02

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	9	84	0.32	0.13	0.04	0.12
Derivatized - MS/MS non-kit	38	376	0.39	0.14	0.06	0.13
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	0.26	0.09	0.03	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	0.27	0.07	0.02	0.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	505	0.29	0.07	0.03	0.06
Non-derivatized - MS/MS non-kit	18	171	0.45	0.39	0.05	0.39

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	9	84	1.00	0.40	0.12	0.38
Derivatized - MS/MS non-kit	38	372	1.09	0.31	0.11	0.29
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	0.78	0.23	0.05	0.22
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	0.81	0.19	0.07	0.18
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	506	0.87	0.19	0.08	0.17
Non-derivatized - MS/MS non-kit	18	168	1.09	0.82	0.10	0.82

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	9	84	1.91	0.74	0.18	0.71
Derivatized - MS/MS non-kit	38	372	2.11	0.61	0.22	0.57
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	1.52	0.47	0.09	0.46
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	1.62	0.39	0.14	0.36
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	506	1.69	0.38	0.15	0.34
Non-derivatized - MS/MS non-kit	18	172	2.39	1.99	0.20	1.98

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	10	94	0.04	0.03	0.01	0.03
Derivatized - MS/MS non-kit	39	380	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	10	99	0.06	0.03	0.01	0.02
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	316	0.04	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	509	0.03	0.02	0.01	0.02
Non-derivatized - MS/MS non-kit	20	190	0.04	0.03	0.01	0.03

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	10	94	0.63	0.12	0.07	0.10
Derivatized - MS/MS non-kit	40	400	0.32	0.15	0.05	0.14
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	0.73	0.13	0.07	0.11
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	317	0.55	0.08	0.05	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	540	0.46	0.08	0.04	0.07
Non-derivatized - MS/MS non-kit	21	202	0.52	0.14	0.07	0.12

Analyte: Glutaryl carnitine (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	10	94	1.28	0.26	0.14	0.22
Derivatized - MS/MS non-kit	40	400	0.64	0.29	0.09	0.28
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	1.44	0.30	0.15	0.26
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	318	1.08	0.17	0.09	0.14
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	540	0.91	0.15	0.07	0.13
Non-derivatized - MS/MS non-kit	21	202	1.01	0.26	0.13	0.22

Analyte: Glutaryl carnitine (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	10	94	3.04	0.56	0.31	0.47
Derivatized - MS/MS non-kit	40	400	1.56	0.69	0.17	0.67
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	3.40	0.55	0.26	0.48
Non-derivatized - MS/MS NeoBase™ PerkinElmer	33	318	2.64	0.40	0.21	0.34
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	538	2.18	0.33	0.15	0.29
Non-derivatized - MS/MS non-kit	21	202	2.42	0.62	0.31	0.54

Hydroxyisovalerylcarnitine (C5OH) ($\mu\text{mol/L}$ 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	8	76	0.31	0.12	0.06	0.11
Derivatized - MS/MS non-kit	40	397	0.32	0.10	0.05	0.09
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	0.31	0.06	0.02	0.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	308	0.41	0.07	0.03	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	506	0.51	0.12	0.04	0.11
Non-derivatized - MS/MS non-kit	20	189	0.55	0.26	0.12	0.23

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	8	76	0.88	0.25	0.08	0.23
Derivatized - MS/MS non-kit	40	398	0.89	0.25	0.11	0.23
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	0.63	0.12	0.04	0.11
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	308	0.82	0.14	0.06	0.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	506	0.97	0.23	0.09	0.21
Non-derivatized - MS/MS non-kit	20	189	1.15	0.31	0.17	0.26

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	8	76	1.51	0.48	0.24	0.42
Derivatized - MS/MS non-kit	40	398	1.49	0.41	0.18	0.37
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	1.00	0.21	0.05	0.20
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	307	1.26	0.25	0.10	0.22
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	499	1.47	0.31	0.13	0.28
Non-derivatized - MS/MS non-kit	20	190	1.84	0.49	0.21	0.44

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	8	76	2.12	0.66	0.34	0.57
Derivatized - MS/MS non-kit	40	397	2.04	0.53	0.22	0.48
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	1.30	0.23	0.08	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	32	308	1.67	0.31	0.12	0.28
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	496	1.92	0.34	0.15	0.31
Non-derivatized - MS/MS non-kit	20	187	2.39	0.59	0.26	0.53

Hexanoylcarnitine (C6) ($\mu\text{mol/L}$ 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	9	84	0.03	0.02	0.01	0.02
Derivatized - MS/MS non-kit	38	366	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	0.02	0.03	0.01	0.02
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	340	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	55	535	0.01	0.00	0.00	0.00
Non-derivatized - MS/MS non-kit	18	169	0.02	0.05	0.02	0.05

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	9	84	0.31	0.06	0.03	0.05
Derivatized - MS/MS non-kit	39	386	0.33	0.10	0.05	0.08
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.31	0.05	0.02	0.05
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	340	0.33	0.04	0.02	0.03
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	566	0.32	0.06	0.04	0.05
Non-derivatized - MS/MS non-kit	20	192	0.33	0.06	0.04	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	9	84	0.58	0.09	0.05	0.07
Derivatized - MS/MS non-kit	39	385	0.64	0.16	0.08	0.14
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.59	0.10	0.04	0.09
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	340	0.65	0.08	0.05	0.07
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	565	0.62	0.08	0.04	0.07
Non-derivatized - MS/MS non-kit	20	192	0.66	0.11	0.06	0.09

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	9	84	1.31	0.17	0.09	0.14
Derivatized - MS/MS non-kit	39	386	1.56	0.36	0.17	0.32
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	1.41	0.23	0.10	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	340	1.60	0.21	0.10	0.18
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	566	1.46	0.17	0.08	0.15
Non-derivatized - MS/MS non-kit	20	192	1.58	0.33	0.16	0.28

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	10	93	0.02	0.02	0.01	0.02
Derivatized - MS/MS non-kit	38	371	0.02	0.02	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	11	109	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	364	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	60	584	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	20	190	0.04	0.04	0.01	0.04

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	10	94	0.37	0.12	0.08	0.09
Derivatized - MS/MS non-kit	39	381	0.49	0.15	0.07	0.13
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	0.38	0.06	0.04	0.05
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	364	0.45	0.06	0.04	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	602	0.41	0.05	0.03	0.04
Non-derivatized - MS/MS non-kit	22	210	0.46	0.13	0.04	0.12

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	10	94	0.72	0.13	0.07	0.12
Derivatized - MS/MS non-kit	39	385	0.96	0.28	0.12	0.25
Non-derivatized - MS/MS MassChrom® Chromsystems	12	120	0.75	0.12	0.06	0.10
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	364	0.87	0.11	0.06	0.09
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	603	0.80	0.10	0.06	0.08
Non-derivatized - MS/MS non-kit	22	210	0.89	0.25	0.09	0.23

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	10	94	1.73	0.30	0.13	0.27
Derivatized - MS/MS non-kit	39	386	2.34	0.58	0.24	0.53
Non-derivatized - MS/MS MassChrom® Chromsystems	12	119	1.88	0.24	0.11	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	38	364	2.20	0.28	0.15	0.23
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	62	603	1.95	0.24	0.14	0.20
Non-derivatized - MS/MS non-kit	22	210	2.18	0.57	0.17	0.54

Decanoylcarnitine (C10) ($\mu\text{mol/L}$ 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	9	84	0.02	0.01	0.00	0.01
Derivatized - MS/MS non-kit	39	380	0.03	0.03	0.02	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	10	99	0.03	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	360	0.03	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	558	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	20	191	0.06	0.05	0.02	0.05

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	9	84	0.26	0.07	0.03	0.06
Derivatized - MS/MS non-kit	39	387	0.43	0.20	0.09	0.18
Non-derivatized - MS/MS MassChrom® Chromsystems	11	109	0.35	0.07	0.03	0.06
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	359	0.37	0.06	0.03	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	60	578	0.34	0.06	0.03	0.05
Non-derivatized - MS/MS non-kit	21	202	0.43	0.10	0.05	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	9	84	0.55	0.11	0.04	0.11
Derivatized - MS/MS non-kit	39	384	0.81	0.29	0.12	0.26
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	0.68	0.15	0.07	0.13
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	360	0.72	0.12	0.06	0.10
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	60	578	0.67	0.11	0.06	0.10
Non-derivatized - MS/MS non-kit	21	202	0.84	0.21	0.09	0.19

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	9	84	1.37	0.38	0.12	0.36
Derivatized - MS/MS non-kit	39	385	2.01	0.71	0.29	0.65
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	1.68	0.40	0.23	0.33
Non-derivatized - MS/MS NeoBase™ PerkinElmer	37	360	1.83	0.28	0.15	0.23
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	60	578	1.66	0.29	0.15	0.25
Non-derivatized - MS/MS non-kit	21	202	2.02	0.54	0.24	0.49

Dodecanoylcarnitine (C12) (µmol/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	8	76	0.02	0.01	0.01	0.01
Derivatized - MS/MS non-kit	36	353	0.03	0.03	0.01	0.02
Non-derivatized - MS/MS MassChrom® Chromsystems	9	89	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo)Siemens	5	50	0.01	0.01	0.00	0.00
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	328	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	51	488	0.01	0.01	0.00	0.00
Non-derivatized - MS/MS non-kit	19	179	0.02	0.03	0.01	0.03

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	8	76	0.66	0.10	0.06	0.08
Derivatized - MS/MS non-kit	36	359	0.76	0.26	0.12	0.23
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.62	0.12	0.06	0.11
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo)Siemens	5	50	0.84	0.12	0.07	0.10
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	326	0.70	0.09	0.06	0.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	500	0.67	0.09	0.05	0.08
Non-derivatized - MS/MS non-kit	20	192	0.78	0.26	0.08	0.25

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	8	76	1.36	0.20	0.11	0.16
Derivatized - MS/MS non-kit	36	360	1.52	0.50	0.22	0.44
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	1.28	0.26	0.11	0.24
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo)Siemens	5	50	1.65	0.27	0.12	0.24
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	326	1.43	0.19	0.11	0.15
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	500	1.35	0.18	0.10	0.15
Non-derivatized - MS/MS non-kit	20	192	1.57	0.48	0.17	0.45

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	8	76	2.03	0.29	0.18	0.23
Derivatized - MS/MS non-kit	36	360	2.30	0.67	0.30	0.60
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	1.95	0.31	0.13	0.28
Non-derivatized - MS/MS MS2 Screening Neo (MS-Neo)Siemens	5	50	2.47	0.42	0.19	0.37
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	327	2.21	0.28	0.16	0.22
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	500	2.04	0.28	0.15	0.23
Non-derivatized - MS/MS non-kit	20	192	2.37	0.72	0.25	0.68

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	10	94	0.05	0.02	0.01	0.02
Derivatized - MS/MS non-kit	39	384	0.06	0.03	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	9	89	0.04	0.02	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	0.04	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	555	0.04	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	19	176	0.06	0.05	0.01	0.05

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	10	94	0.46	0.08	0.04	0.07
Derivatized - MS/MS non-kit	39	388	0.56	0.18	0.09	0.16
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.43	0.09	0.04	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	0.50	0.06	0.04	0.05
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	556	0.49	0.07	0.04	0.05
Non-derivatized - MS/MS non-kit	20	190	0.52	0.13	0.06	0.11

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	10	94	1.34	0.23	0.13	0.19
Derivatized - MS/MS non-kit	39	385	1.53	0.43	0.18	0.39
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	1.28	0.27	0.13	0.23
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	1.47	0.19	0.11	0.16
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	556	1.41	0.18	0.11	0.15
Non-derivatized - MS/MS non-kit	20	190	1.49	0.33	0.15	0.30

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	10	94	2.54	0.36	0.21	0.29
Derivatized - MS/MS non-kit	39	387	3.02	0.85	0.35	0.77
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	2.52	0.53	0.25	0.46
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	2.95	0.36	0.22	0.28
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	556	2.78	0.36	0.20	0.29
Non-derivatized - MS/MS non-kit	20	190	2.90	0.67	0.29	0.60

Tetradecenoyl carnitine (C14:1) ($\mu\text{mol/L}$ 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	9	84	0.03	0.01	0.01	0.01
Derivatized - MS/MS non-kit	37	366	0.04	0.04	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	0.02	0.02	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	0.03	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	568	0.02	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	18	170	0.02	0.01	0.01	0.01

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	9	84	0.24	0.08	0.04	0.07
Derivatized - MS/MS non-kit	37	366	0.28	0.09	0.05	0.08
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	0.20	0.04	0.02	0.04
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	328	0.24	0.04	0.02	0.04
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	59	578	0.24	0.04	0.02	0.03
Non-derivatized - MS/MS non-kit	19	180	0.27	0.09	0.03	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	9	84	0.69	0.22	0.11	0.19
Derivatized - MS/MS non-kit	37	366	0.76	0.22	0.11	0.19
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	0.59	0.12	0.07	0.10
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	0.68	0.12	0.06	0.10
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	59	577	0.70	0.11	0.06	0.09
Non-derivatized - MS/MS non-kit	19	180	0.75	0.22	0.07	0.20

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	9	84	1.36	0.47	0.26	0.40
Derivatized - MS/MS non-kit	37	366	1.52	0.40	0.19	0.35
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	1.20	0.30	0.18	0.24
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	330	1.40	0.23	0.12	0.20
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	59	578	1.41	0.22	0.11	0.19
Non-derivatized - MS/MS non-kit	19	180	1.54	0.44	0.16	0.41

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	10	94	0.60	0.12	0.07	0.10
Derivatized - MS/MS non-kit	39	386	0.68	0.18	0.10	0.15
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.57	0.17	0.10	0.14
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	0.66	0.12	0.06	0.10
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	553	0.72	0.13	0.07	0.11
Non-derivatized - MS/MS non-kit	21	198	0.64	0.15	0.08	0.13

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	10	94	3.11	0.49	0.27	0.41
Derivatized - MS/MS non-kit	39	386	3.44	0.74	0.39	0.62
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	2.89	0.59	0.27	0.53
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	3.48	0.46	0.25	0.39
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	566	3.87	0.69	0.35	0.59
Non-derivatized - MS/MS non-kit	21	200	3.34	0.59	0.28	0.52

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	10	94	5.84	0.84	0.47	0.69
Derivatized - MS/MS non-kit	39	386	6.27	1.30	0.62	1.14
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	5.60	1.16	0.45	1.07
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	6.54	0.92	0.47	0.79
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	566	7.20	1.28	0.67	1.09
Non-derivatized - MS/MS non-kit	21	200	6.15	1.05	0.54	0.90

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	10	94	8.35	1.08	0.56	0.93
Derivatized - MS/MS non-kit	38	376	9.12	1.85	0.88	1.62
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	7.96	1.53	0.67	1.37
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	338	9.55	1.27	0.67	1.08
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	566	10.27	1.76	0.93	1.50
Non-derivatized - MS/MS non-kit	21	200	9.00	1.57	0.80	1.35

Hydroxypalmitoylcarnitine (C16OH) ($\mu\text{mol/L}$ 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	10	96	0.02	0.02	0.01	0.02
Derivatized - MS/MS non-kit	37	367	0.02	0.04	0.02	0.03
Non-derivatized - MS/MS MassChrom® Chromsystems	10	100	0.01	0.01	0.01	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	0.01	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	58	562	0.01	0.01	0.01	0.01
Non-derivatized - MS/MS non-kit	20	192	0.01	0.01	0.01	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	10	96	0.19	0.05	0.02	0.04
Derivatized - MS/MS non-kit	38	376	0.21	0.10	0.05	0.09
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	0.15	0.05	0.01	0.05
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	0.16	0.04	0.02	0.04
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	592	0.17	0.04	0.02	0.04
Non-derivatized - MS/MS non-kit	21	202	0.20	0.07	0.02	0.06

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	10	96	0.76	0.17	0.06	0.16
Derivatized - MS/MS non-kit	38	378	0.76	0.25	0.10	0.23
Non-derivatized - MS/MS MassChrom® Chromsystems	11	110	0.61	0.22	0.05	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	0.64	0.14	0.05	0.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	594	0.69	0.15	0.06	0.14
Non-derivatized - MS/MS non-kit	21	202	0.82	0.26	0.09	0.25

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	10	96	1.07	0.25	0.09	0.23
Derivatized - MS/MS non-kit	38	378	1.13	0.36	0.13	0.33
Non-derivatized - MS/MS MassChrom® Chromsystems	11	108	0.90	0.33	0.08	0.32
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	344	0.96	0.21	0.08	0.20
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	61	594	0.99	0.22	0.10	0.20
Non-derivatized - MS/MS non-kit	21	202	1.19	0.37	0.12	0.35

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	10	94	0.51	0.11	0.07	0.09
Derivatized - MS/MS non-kit	36	359	0.50	0.16	0.07	0.14
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	0.50	0.09	0.05	0.08
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	341	0.51	0.07	0.04	0.06
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	548	0.53	0.08	0.04	0.07
Non-derivatized - MS/MS non-kit	19	186	0.51	0.11	0.05	0.10

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	10	94	1.21	0.20	0.12	0.16
Derivatized - MS/MS non-kit	36	358	1.15	0.33	0.14	0.30
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	1.17	0.22	0.12	0.19
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	341	1.22	0.16	0.10	0.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	547	1.25	0.16	0.09	0.13
Non-derivatized - MS/MS non-kit	19	184	1.21	0.25	0.11	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	10	94	2.89	0.42	0.25	0.34
Derivatized - MS/MS non-kit	36	359	2.59	0.78	0.29	0.72
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	2.84	0.55	0.26	0.48
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	341	2.87	0.39	0.22	0.32
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	548	2.92	0.36	0.20	0.30
Non-derivatized - MS/MS non-kit	19	186	2.79	0.56	0.26	0.50

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	10	94	4.22	0.56	0.33	0.45
Derivatized - MS/MS non-kit	36	359	3.94	1.12	0.44	1.04
Non-derivatized - MS/MS MassChrom® Chromsystems	9	90	4.25	0.76	0.37	0.67
Non-derivatized - MS/MS NeoBase™ PerkinElmer	35	341	4.39	0.57	0.32	0.47
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	57	548	4.40	0.56	0.33	0.45
Non-derivatized - MS/MS non-kit	19	186	4.23	0.87	0.40	0.77

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	10	94	0.01	0.01	0.01	0.01
Derivatized - MS/MS non-kit	30	294	0.01	0.02	0.01	0.01
Non-derivatized - MS/MS MassChrom® Chromsystems	7	70	0.00	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	328	0.00	0.01	0.00	0.01
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	489	0.00	0.01	0.00	0.00
Non-derivatized - MS/MS non-kit	14	132	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	10	94	0.15	0.04	0.02	0.03
Derivatized - MS/MS non-kit	30	297	0.16	0.07	0.03	0.06
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	0.11	0.05	0.01	0.05
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	328	0.13	0.02	0.01	0.02
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	53	506	0.14	0.03	0.01	0.03
Non-derivatized - MS/MS non-kit	15	134	0.16	0.10	0.02	0.09

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	10	94	0.64	0.13	0.07	0.11
Derivatized - MS/MS non-kit	30	300	0.63	0.31	0.11	0.29
Non-derivatized - MS/MS MassChrom® Chromsystems	8	80	0.46	0.22	0.06	0.21
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	327	0.55	0.11	0.05	0.09
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	504	0.55	0.11	0.04	0.10
Non-derivatized - MS/MS non-kit	15	142	0.64	0.32	0.07	0.31

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	10	94	0.92	0.17	0.09	0.15
Derivatized - MS/MS non-kit	30	298	0.92	0.42	0.14	0.39
Non-derivatized - MS/MS MassChrom® Chromsystems	8	79	0.67	0.30	0.08	0.29
Non-derivatized - MS/MS NeoBase™ PerkinElmer	34	328	0.81	0.15	0.07	0.13
Non-derivatized - MS/MS NeoBase™2 PerkinElmer	52	504	0.81	0.16	0.06	0.15
Non-derivatized - MS/MS non-kit	15	140	0.94	0.47	0.12	0.45

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	26	245	0.19	0.12	0.06	0.1

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	26	246	0.45	0.22	0.09	0.2

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	26	244	0.7	0.32	0.14	0.28

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	26	244	2.3	1	0.41	0.91

C22:0-lysophosphatidylcholine (C22-LPC) ($\mu\text{mol/L}$ 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	27	251	0.12	0.08	0.04	0.08

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	27	253	0.36	0.16	0.08	0.14

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	27	253	0.61	0.25	0.1	0.23

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	27	252	2.03	0.75	0.34	0.67

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	36	348	0.21	0.19	0.07	0.18

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	36	348	0.48	0.27	0.1	0.25

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	36	348	0.77	0.35	0.12	0.33

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	36	348	2.68	1.11	0.41	1.03

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	41	394	0.14	0.07	0.04	0.06
LC-MS/MS negative ion mode	11	110	0.01	0.01	0.01	0.01

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	41	393	0.38	0.11	0.06	0.09
LC-MS/MS negative ion mode	11	110	0.21	0.04	0.02	0.03

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	41	393	0.64	0.16	0.09	0.13
LC-MS/MS negative ion mode	11	110	0.43	0.09	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	41	394	2.29	0.47	0.25	0.40
LC-MS/MS negative ion mode	11	110	1.78	0.30	0.16	0.26

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

Analyte: Galactoceramidase (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	23	214	0.24	0.13	0.06	0.11

Analyte: Galactoceramidase (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	24	239	0.65	0.75	0.09	0.74

Analyte: Galactoceramidase (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	23	230	2.86	0.35	0.2	0.29

Analyte: Galactoceramidase (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	23	230	5.42	0.68	0.37	0.58

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	31	308	0.18	0.20	0.05	0.19

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	33	327	0.51	0.17	0.06	0.16

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	33	330	3.71	0.74	0.37	0.65

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	33	329	6.04	1.68	0.90	1.42

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

Analyte: Acid α -Glucosidase (GAA) - Lot A2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	5	50	1.36	0.56	0.34	0.44

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	7	67	2.34	0.55	0.30	0.46

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	7	70	11.25	1.82	1.12	1.43

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	7	69	17.93	4.30	2.55	3.46

α -L-Iduronidase (IDUA) ($\mu\text{mol/hr/L}$ 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	32	309	0.13	0.17	0.05	0.16

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	36	351	0.44	0.43	0.09	0.41

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	35	350	2.90	0.89	0.28	0.84

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	35	350	5.32	1.59	0.54	1.49

α -L-Iduronidase (IDUA) ($\mu\text{mol/hr/L}$ blood)

Analyte: α -L-Iduronidase (IDUA) - Lot A2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	51	2.01	0.68	0.35	0.59

Analyte: α -L-Iduronidase (IDUA) - Lot B2208

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
Digital Microfluidic Fluorescence	6	53	2.65	0.59	0.31	0.50

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	7	70	9.65	1.28	0.77	1.02

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
Digital Microfluidic Fluorescence	7	70	17.01	2.33	1.56	1.73

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	26	249	1.12	1.14	0.21	1.12

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	27	261	1.64	0.9	0.18	0.88

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	26	260	7.79	1.53	0.6	1.41

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	26	260	14.44	2.63	1.09	2.39

β-Glucocerebrosidase (ABG) (μmol/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	25	236	0.38	0.24	0.12	0.2

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	27	251	0.71	0.87	0.2	0.85

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	26	254	2.45	0.74	0.34	0.65

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	26	254	4.65	1.42	0.56	1.3

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	18	173	0.07	0.11	0.04	0.1

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	20	186	0.19	0.19	0.06	0.18

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	20	200	1.05	0.23	0.13	0.19

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	20	200	1.86	0.37	0.19	0.32

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

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot A2311 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	111	0.31	0.54	0.3	0.45

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot B2311 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	188	9.69	2.22	1.01	1.98
LC-MS/MS positive ion mode	5	50	8.65	2.61	1.24	2.30

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot C2311 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	187	45.34	9.47	3.63	8.75
LC-MS/MS positive ion mode	5	50	42.58	12.13	3.83	11.51

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot D2311 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	188	90.12	18.59	7.27	17.11
LC-MS/MS positive ion mode	5	50	81.56	22.98	5.55	22.30

Analyte: 17 α -Hydroxyprogesterone (17OHP2) - Lot E2311 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	188	474.35	95.47	37.96	87.59
LC-MS/MS positive ion mode	5	50	415.29	106.59	26.04	103.36

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

Analyte: 4-Androstenedione (4AD) - Lot A2311 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	119	0.31	0.44	0.23	0.37

Analyte: 4-Androstenedione (4AD) - Lot B2311 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	20	197	11.61	3.61	1.07	3.45
LC-MS/MS positive ion mode	5	50	9.83	2.89	0.76	2.79

Analyte: 4-Androstenedione (4AD) - Lot C2311 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	20	196	56.29	17.23	6.02	16.15
LC-MS/MS positive ion mode	5	50	48.25	13.20	3.34	12.77

Analyte: 4-Androstenedione (4AD) - Lot D2311 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	20	196	104.70	31.58	7.55	30.67
LC-MS/MS positive ion mode	5	50	87.35	23.37	5.66	22.67

Analyte: 4-Androstenedione (4AD) - Lot E2311 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	20	196	558.46	177.40	45.25	171.54
LC-MS/MS positive ion mode	5	50	463.50	110.62	27.74	107.09

Cortisol (CORT2) (ng/mL serum)

Analyte: Cortisol (CORT2) - Lot A2311 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	15	136	3.92	4.8	2.19	4.27

Analyte: Cortisol (CORT2) - Lot B2311 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	190	12.64	5.11	2.57	4.42
LC-MS/MS positive ion mode	5	50	11.07	3.76	1.63	3.39

Analyte: Cortisol (CORT2) - Lot C2311 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	188	51.2	9.88	4.44	8.83
LC-MS/MS positive ion mode	5	50	49.8	14.20	4.97	13.30

Analyte: Cortisol (CORT2) - Lot D2311 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	188	100.49	19.08	8.08	17.28
LC-MS/MS positive ion mode	5	50	95.09	24.65	7.68	23.42

Analyte: Cortisol (CORT2) - Lot E2311 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	19	188	532.17	83.74	37.82	74.71
LC-MS/MS positive ion mode	5	50	488.92	132.64	37.53	127.22

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

Analyte: 11-Deoxycortisol (11D2) - Lot A2311 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	12	110	1.87	4.74	1.06	4.62

Analyte: 11-Deoxycortisol (11D2) - Lot B2311 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	16	158	12.77	4.66	1.38	4.45

Analyte: 11-Deoxycortisol (11D2) - Lot C2311 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	16	156	53.92	12.3	5.09	11.2

Analyte: 11-Deoxycortisol (11D2) - Lot D2311 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	16	156	108.25	26.02	10.15	23.96

Analyte: 11-Deoxycortisol (11D2) - Lot E2311 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	16	158	549.58	151.39	60.78	138.65

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

Analyte: 21-Deoxycortisol (21D2) - Lot A2311 - Enrichment 0

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	14	110	2.02	5.95	1.07	5.86

Analyte: 21-Deoxycortisol (21D2) - Lot B2311 - Enrichment 10

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	165	10.75	4.96	1.52	4.72

Analyte: 21-Deoxycortisol (21D2) - Lot C2311 - Enrichment 50

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	166	46.79	11.74	5.04	10.61

Analyte: 21-Deoxycortisol (21D2) - Lot D2311 - Enrichment 100

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	166	97.29	31.1	15.53	26.95

Analyte: 21-Deoxycortisol (21D2) - Lot E2311 - Enrichment 500

Method	Number of Labs	Total N	Total Mean	Total SD	Intra Lab SD	Inter Lab SD
LC-MS/MS non-kit	17	167	527.35	150.76	63.88	136.55

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	22	220	1.80	0.87	0.34	0.80
LC-MS/MS negative ion mode	5	50	2.23	1.37	0.61	1.23

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	22	220	4.50	1.53	0.64	1.39
LC-MS/MS negative ion mode	5	50	5.11	2.24	0.91	2.05

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	22	220	17.47	5.75	1.88	5.44
LC-MS/MS negative ion mode	5	50	18.24	6.08	2.09	5.71

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	22	220	43.42	13.69	4.59	12.90
LC-MS/MS negative ion mode	5	50	45.07	13.03	4.39	12.27

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	9	88	2.32	0.99	0.39	0.91

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	9	88	5.28	1.75	0.67	1.62

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	9	88	18.82	6.41	2.14	6.05

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	9	88	46.97	13.98	5.41	12.89

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	17	169	0.98	0.65	0.24	0.61

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	17	169	2.17	0.91	0.32	0.85

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	17	170	8.03	2.58	0.66	2.49

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	17	170	20.51	6.58	1.59	6.39

Total Homocysteine (tHCY2) (µmol/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	180	5.53	2.76	0.88	2.61
LC-MS/MS positive ion mode	5	50	7.05	2.19	0.64	2.09

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	12.05	5.38	1.60	5.13
LC-MS/MS positive ion mode	5	50	14.41	3.26	1.18	3.04

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	37.45	14.69	4.34	14.04
LC-MS/MS positive ion mode	5	50	43.38	9.62	2.62	9.26

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	70.08	28.93	7.98	27.81
LC-MS/MS positive ion mode	5	50	80.19	19.12	6.90	17.83

Alloisoleucine (ALE2) (µmol/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	15	148	1.4	2.17	0.38	2.14

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	140	81.61	11.06	6.96	8.6

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	140	165.14	22.01	13.39	17.47

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	140	316.56	55.93	36.54	42.35

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	140	636.53	98.83	61.37	77.47

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	15	150	20.96	10.74	1.84	10.58

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	15	150	103.76	24.69	6.2	23.9

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	15	150	193.83	56.16	10.97	55.08

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	14	140	334.13	56.67	27.63	49.48

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	14	140	675.91	115.39	50.28	103.86

Leucine (LEU2) (µmol/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	17	166	43.64	13.09	3.22	12.69

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	17	168	146.01	56.81	8.94	56.1

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	17	168	256.73	118.1	13.96	117.28

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	17	168	450.79	198.31	27.93	196.33

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	16	160	855.91	377.54	50.65	374.12

Phenylalanine (PHE2) (µmol/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	16	159	27.77	10.24	3.52	9.62

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	17	170	113.8	18.18	10.26	15.01

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	16	160	198.66	23.99	14.44	19.16

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	17	170	367.85	46.08	26.91	37.4

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	17	170	704.72	78.26	38.18	68.31

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	13	130	24.3	5.11	1.71	4.81

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	14	140	103.15	17.63	8.06	15.67

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	13	130	184.17	30.32	16.92	25.16

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	14	140	338.86	48.1	25.96	40.49

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	14	140	674.89	88.11	49.48	72.91

Valine (VAL2) (µmol/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	16	160	53.74	12.85	4.36	12.09

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	16	160	130.82	27.41	10.03	25.51

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	16	160	211.02	42.8	16.12	39.65

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	16	160	377.49	128.41	47.56	119.28

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	15	150	687.04	134.24	54.72	122.59

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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