Analytical Biochemistry Services Offered

If you have any questions about the services offered or a custom-designed chemical analysis, please contact:
Adrian Franke, PhD at adrian@cc.hawaii.edu or (808) 586-3008.

Untargeted Anayses: Small Molecules ("Q300 assay") by LC/MS

Compound Name	Full name
L-Arginine	L-Arginine
L-Histidine	L-Histidine
L-Lysine	L-Lysine
Ornithine	Ornithine
Glycine	Glycine
L-Glutamine	L-Glutamine
L-Serine	L-Serine
Sarcosine	Sarcosine
Beta-Alanine	Beta-Alanine
L-Alanine	L-Alanine
Citrulline	Citrulline
L-threonine	L-threonine
Creatine	Creatine
L-Proline	L-Proline
L-Glutamic acid	L-Glutamic acid
L-Tyrosine	L-Tyrosine
L-Valine	L-Valine
Pyroglutamic acid	Pyroglutamic acid
L-Asparagine	L-Asparagine
L-Methionine	L-Methionine
L-Alloisoleucine	L-Alloisoleucine
L-Isoleucine	L-Isoleucine
L-Leucine	L-Leucine
L-Kynurenine	L-Kynurenine
L-Norleucine	L-Norleucine
L-Aspartic acid	L-Aspartic acid
L-Phenylalanine	L-Phenylalanine
L-Tryptophan	L-Tryptophan
L-Alpha-aminobutyric acid	L-Alpha-aminobutyric acid
2,3-Diaminopropionic acid	2,3-Diaminopropionic acid
2-Phenylglycine	2-Phenylglycine
3-Chlorotyrosine	3-Chlorotyrosine
3-Nitrotyrosine	3-Nitrotyrosine
5-Aminolevulinic acid	5-Aminolevulinic acid
5-Hydroxy-L-tryptophan	5-Hydroxy-L-tryptophan

5-Hydroxylysine	5-Hydroxylysine
L-Thyronine	L-Thyronine
5-L-Glutamyl-L-alanine	5-L-Glutamyl-L-alanine
Acetylcysteine	Acetylcysteine
Acetylglycine	Acetylglycine
Alpha-N-Phenylacetyl-L-glutamine	Alpha-N-Phenylacetyl-L-glutamine
Aminoadipic acid	Aminoadipic acid
Dimethylglycine	Dimethylglycine
Gamma-Aminobutyric acid	Gamma-Aminobutyric acid
Glycyl-L-leucine	Glycyl-L-leucine
Glycylproline	Glycylproline
Guanidoacetic acid	Guanidoacetic acid
L-Homocitrulline	L-Homocitrulline
L-Homoserine	L-Homoserine
L-Pipecolic acid	L-Pipecolic acid
Methylcysteine	Methylcysteine
N-Acetyl-L-alanine	N-Acetyl-L-alanine
N-Acetyl-L-aspartic acid	N-Acetyl-L-aspartic acid
N-Acetyl-L-tyrosine	N-Acetyl-L-tyrosine
N-Acetylglutamine	N-Acetylglutamine
N-Acetylserine	N-Acetylserine
N-acetyltryptophan	N-acetyltryptophan
N-Phenylacetylphenylalanine	N-Phenylacetylphenylalanine
12-DHCA	12-Dehydrocholic acid
12-ketoLCA	12-ketolithocholic acid
3-DHCA	3-Dehydrocholic Acid
6-ketoLCA	6-ketolithocholic acid
7-ketoDCA	7-Dehydrocholic acid
7-ketoLCA	7-ketolithocholic acid
alloLCA	allolithocholic acid
apoCA	apocholic acid
ωMCA	ω-muricholic acid
αMCA	α-muricholic acid
βMCA	β-muricholic acid
βUDCA	β-Ursodeoxycholic acid
βHDCA	β-Hyodeoxycholic acid
CDCA	Chenodeoxycholic acid
CDCA-24G	Chenodeoxycholic Acid 24-Acyl-β-D-glucuronide
CA	Cholic acid
dehydroLCA	dehydrolithocholic acid
DCA	Deoxycholic acid
GCDCA	Glycochenodeoxycholic acid
GCA	Glycocholic acid
GDCA	Glycodeoxycholic acid
GHCA	Glycohyocholic acid

GHDCA	Glycohyodeoxycholic acid
GLCA	Glycolithocholic acid
GUDCA	Glycoursodeoxycholic acid
HCA	Hyocholic acid
HDCA	Hyodeoxycholic acid
isoLCA	isolithocholic acid
LCA	Lithocholic acid
LCA-3S	Lithocholic acid 3-sulfate
GLCA-3S	Glycolithocholic acid 3-Sulfate
muroCA	muro-cholic acid
NorCA	NorCholic acid
NorDCA	Nordeoxycholic acid
TωMCA	Tauro-ω-muricholic acid
TαMCA/TβMCA	Tauro-α-muricholic acid/Tauro-β-muricholic acid
TCDCA	Taurochenodeoxycholic acid
TCA	Taurocholic acid
TDCA	Taurodeoxycholic acid
THCA	Taurohyocholic acid
THDCA	Taurohyodeoxycholic acid
TLCA	Taurolithocholic acid
TUDCA	Tauroursodeoxycholic acid
UDCA	Ursodeoxycholic acid
3,4-Dihydroxymandelic acid	3,4-Dihydroxymandelic acid
3-Aminosalicylic acid	3-Aminosalicylic acid
3-Hydroxyanthranilic acid	3-Hydroxyanthranilic acid
3-Hydroxyphenylacetic acid	3-Hydroxyphenylacetic acid
4-Aminohippuric acid	4-Aminohippuric acid
4-Hydroxybenzoic acid	4-Hydroxybenzoic acid
4-Hydroxyhippuric acid	4-Hydroxyhippuric acid
4-Hydroxyphenylpyruvic acid	4-Hydroxyphenylpyruvic acid
Acetaminophen	Acetaminophen
Benzamide	Benzamide
Benzenebutanoic acid	Benzenebutanoic acid
Benzoic acid	Benzoic acid
Gallic acid	Gallic acid
Hippuric acid	Hippuric acid
Homovanillic acid	Homovanillic acid
m-Aminobenzoic acid	m-Aminobenzoic acid
m-Hydroxyhippuric acid	m-Hydroxyhippuric acid
Mandelic acid	Mandelic acid
Ortho-Hydroxyphenylacetic acid	Ortho-Hydroxyphenylacetic acid
p-Hydroxymandelic acid	p-Hydroxymandelic acid
p-Hydroxyphenylacetic acid	p-Hydroxyphenylacetic acid
Phenylacetic acid	Phenylacetic acid
Phenylpyruvic acid	Phenylpyruvic acid

Phthalic acid	Phthalic acid
Protocatechuic acid	Protocatechuic acid
Salicyluric acid	Salicyluric acid
Vanillic acid	Vanillic acid
Beta-D-Fucose	Beta-D-Fucose
D-Fructose	D-Fructose
D-Gluconolactone	D-Gluconolactone
D-Glucose	D-Glucose
D-Maltose	D-Maltose and Alpha-Lactose
D-Ribulose	D-Ribulose
D-Xylose	D-Xylose
D-Xylulose	D-Xylulose
Erythronic acid	Erythronic acid
Erythrose	Erythrose
Glucaric acid	Glucaric acid
Glyceraldehyde	Glyceraldehyde
Glyceric acid	Glyceric acid
Lactulose	Lactulose
Maltotriose	Maltotriose
Melibiose	Melibiose
N-Acetyl-D-glucosamine	N-Acetyl-D-glucosamine
N-Acetylneuraminic acid	N-Acetylneuraminic acid
Rhamnose	Rhamnose
Ribonic acid	Ribonic acid
Ribonolactone	Ribonolactone
Tartaric acid	Tartaric acid
2-Hydroxy-2-methylbutyric acid	2-Hydroxy-2-methylbutyric acid
2-Hydroxy-3-methylbutyric acid	2-Hydroxy-3-methylbutyric acid
2-Hydroxycaproic acid	2-Hydroxycaproic acid
2-Methyl-4-pentenoic acid	2-Methyl-4-pentenoic acid
2-Methylhexanoic acid	2-Methylhexanoic acid
2-Methylpentanoic acid	2-Methylpentanoic acid
3-Hydroxyisovaleric acid	3-Hydroxyisovaleric acid
3-Methyladipic acid	3-Methyladipic acid
3-Methylpentanoic acid	3-Methylpentanoic acid
4-Methylhexanoic acid	4-Methylhexanoic acid
Adipic acid	Adipic acid
Aminocaproic acid	Aminocaproic acid
But-2-enoic acid	But-2-enoic acid
C2:0	Acetic acid
C1:0	Formic acid
C4:0	Butyric acid
C5:0	Valeric acid
C6:0	Caproic acid
Citraconic acid	Citraconic acid
C10:0	Decanoic acid

5-Dodecenoic acid	5-Dodecenoic acid
Ethylmethylacetic acid	Ethylmethylacetic acid
C7:0	Heptanoic acid
C9:0	Nonanoic acid
C8:0	Octanoic acid
Pimelic acid	Pimelic acid
C3:0	Propanoic acid
Isobutyric acid	Isobutyric acid
Isocaproic acid	Isocaproic acid
Isovaleric acid	Isovaleric acid
Itaconic acid	Itaconic acid
Azelaic acid	Azelaic acid
Sebacic acid	Sebacic acid
Methylglutaric acid	Methylglutaric acid
Methylsuccinic acid	Methylsuccinic acid
Suberic acid	Suberic acid
C22:3 cis-13, 16, 19	13,16,19-docosatrienoic acid
C22:2 cis-13, 16	13,16-docosadienoic acid
C19:2 cis-10, 13	10,13 Nonadecadienoic Acid
C17:1 trans-10	10-Trans-Heptadecenoic acid
C15:1 cis-10	10-Pentadecenoic acid
C17:1 cis-10	10Z-Heptadecenoic acid
C20:1 cis-11	11-cis-Eicosenoic acid
C12:1 cis-11	11-Dodecenoic acid
C21:1 cis-12	12-Heneicosenoic acid
C18:0 (12-OH)	12-hydroxystearic acid
C13:1 cis-12	12-Tridecenoic acid
C20:1 cis-5	5-Eicosenoic acid
C19:1 trans-7	7-TRANS-Nonadecenoic acid
C19:1 cis-7	7-Nonadecenoic acid
C20:3 cis-8, 11, 14	8,11,14-Eicosatrienoic acid
C22:4 cis-7, 10, 13, 16	Adrenic acid
C18:3 cis-9, 12, 15	Alpha-Linolenic acid
C20:4 cis-5, 8, 11, 14	Arachidonic acid
C18:2 cis-9 trans-11	Bovinic acid
C22:6 cis-4, 7, 10, 13, 16, 19	Docosahexaenoic acid DHA
C22:5 cis-7, 10, 13, 16, 19	Docosapentaenoic acid DPA
C22:5 cis-4, 7, 10, 13, 16	Docosapentaenoic acid 22n-6
C12:0	Dodecanoic acid
C20:2 cis-11, 14	Eicosadienoic acid
C20:5 cis-5, 8, 11, 14, 17	Eicosapentaenoic acid EPA
C18:3 cis-6, 9, 12	Gamma-Linolenic acid
C21:2 cis-12, 15	Heneicosadienoic acid
C17:0	Heptadecanoic acid
C18:2 trans-9, 12	Linoelaidic acid
C18:2 cis-9, 12	Linoleic acid

C14:1 trans-9	Myristelaidic acid
C14:0	Myristic acid
C14:1 cis-9	Myristoleic acid
C19:1 cis-10	Nonadeca-10Z-enoic acid
C19:0	Nonadecanoic acid
C18:1 cis-9	Oleic acid
C16:1 trans-9	Palmitelaidic acid
C16:0	Palmitic acid
C16:1 cis-9	Palmitoleic acid
C15:0	Pentadecanoic acid
C18:1 cis-6	Petroselinic acid
C18:1 trans-9 12-OH	Ricinelaidic acid
C18:1 cis-9 12-OH	Ricinoleic acid
C18:0	Stearic acid
C13:0	Tridecanoic acid
C11:0	Undecanoic acid
C11:1 cis-10	Undecylenic acid
C18:1 trans-11	Vaccenic acid
2-Furoic acid	2-Furoic acid
Anserine	Anserine
Carnosine	Carnosine
1H-Indole-3-acetamide	1H-Indole-3-acetamide
3-Indolepropionic acid	3-Indolepropionic acid
Indole-3-carboxylic acid	Indole-3-carboxylic acid
Indole-3-methyl acetate	Indole-3-methyl acetate
Indoleacetic acid	Indoleacetic acid
Indoleacrylic acid	Indoleacrylic acid
Melatonin	Melatonin
N-Acetylserotonin	N-Acetylserotonin
3,4-Dehydro-DL-proline	3,4-Dehydro-DL-proline
Adenosine monophosphate	Adenosine monophosphate
Guanosine monophosphate	Guanosine monophosphate
2-Hydroxybutyric acid	2-Hydroxybutyric acid
3-Hydroxybutyric acid	3-Hydroxybutyric acid
3-Methyl-2-oxovaleric acid	3-Methyl-2-oxovaleric acid
Acetoacetic acid	Acetoacetic acid
alpha-Hydroxyisobutyric acid	alpha-Hydroxyisobutyric acid
Alpha-ketoisovaleric acid	Alpha-ketoisovaleric acid
cis-Aconitic acid	cis-Aconitic acid
Citramalic acid	Citramalic acid
Citric acid	Citric acid
D/L-2-Hydroxyglutaric acid	D/L-2-Hydroxyglutaric acid
Fumaric acid	Fumaric acid
Galactonic acid	Galactonic acid
Glutaconic acid	Glutaconic acid
Glutaric acid	Glutaric acid

Glycolic acid	Glycolic acid
Hydroxypropionic acid	Hydroxypropionic acid
Hydroxypyruvic acid	Hydroxypyruvic acid
Isocitric acid	Isocitric acid
Ketoleucine	Ketoleucine
L-Lactic acid	L-Lactic acid
L-Malic acid	L-Malic acid
Maleic acid	Maleic acid
Malonic acid	Malonic acid
Methylmalonic acid	Methylmalonic acid
Oxalic acid	Oxalic acid
Oxoadipic acid	Oxoadipic acid
Oxoglutaric acid	Oxoglutaric acid
p-Cresol sulfate	p-Cresol sulfate
Pyruvic acid	Pyruvic acid
Succinic acid	Succinic acid
Threonic acid	Threonic acid
Fructose 1,6-bisphosphate	Fructose 1,6-bisphosphate
S-Adenosylhomocysteine	S-Adenosylhomocysteine
Glucose 6-phosphate	Glucose 6-phosphate
Fructose 6-phosphate	Fructose 6-phosphate
D-Ribose 5-phosphate	D-Ribose 5-phosphate
Quinic acid	Quinic acid
Shikimic acid	Shikimic acid
Trehalose	Trehalose
2-Hydroxycinnamic acid	2-Hydroxycinnamic acid
2-Phenylpropionate	2-Phenylpropionate
3,3-Hydroxyphenyl -3-hydroxypropanoic acid	3,3-Hydroxyphenyl-3-hydroxypropanoic acid
3-Phenylbutyric acid	3-Phenylbutyric acid
4-Hydroxycinnamic acid	4-Hydroxycinnamic acid
Cis and trans-Cinnamic acid	Cis and trans-Cinnamic acid
Hydrocinnamic acid	Hydrocinnamic acid
Hydroxyphenyllactic acid	Hydroxyphenyllactic acid
Phenyllactic acid	Phenyllactic acid
3,4-Dihydroxyhydrocinnamic acid	3,4-Dihydroxyhydrocinnamic acid
3-Pyridylacetic acid	3-Pyridylacetic acid
N-Methylnicotinamide	N-Methylnicotinamide
Nicotinic acid	Nicotinic acid
Picolinic acid	Picolinic acid
Pyrrole-2-carboxylic acid	Pyrrole-2-carboxylic acid
L-Acetylcarnitine	L-Acetylcarnitine
Carnitine	Carnitine
Propionylcarnitine	Propionylcarnitine
Malonylcarnitine	Malonylcarnitine
Butyrylcarnitine	Butyrylcarnitine

Methylmalonylcarnitine	Methylmalonylcarnitine
2-Methylbutyroylcarnitine	2-Methylbutyroylcarnitine
Isovelarylcarnitine	Isovelarylcarnitine
3-Hydroxylisovalerylcarnitine	3-Hydroxylisovalerylcarnitine
Glutarylcarnitine	Glutarylcarnitine
Hexanylcarnitine	Hexanylcarnitine
Adipoylcarnitine	Adipoylcarnitine
Octanoylcarnitine	Octanoylcarnitine
Decanoylcarnitine	Decanoylcarnitine
Lauroylcarnitine	Lauroylcarnitine
Myristoylcarnitine	Myristoylcarnitine
Palmitoylcarnitine	Palmitoylcarnitine
Oleylcarnitine	Oleylcarnitine
Linoleylcarnitine	Linoleylcarnitine
Stearylcarnitine	Stearylcarnitine
Arachidonylcarnitine	Arachidonylcarnitine

Internal standards

L_Histidine_15N3
Pyroglutamic acid_13C6
alpha_Hydroxyisobutyric acid_13C6
3_Hydroxyisovaleric acid_13C6
D_Xylose_13C6
p_Hydroxymandelic acid_13C6
Homovanillic acid_13C6
p_Hydroxyphenylacetic acid_13C6
C4:0_13C6
Isobutyric acid_13C6
Mandelic acid_13C6
Isovaleric acid_13C6
C5:0_13C6
Phenyllactic acid_13C6
Citraconic acid_13C6
Methylglutaric acid_13C6
Phthalic acid_13C6
Pimelic acid_13C6
3_Methyladipic acid_13C6
1 _2_Methylpentanoic acid_13C6
C6:0_13C6
Citric acid_13C6
C8:0_13C6
Aminocaproic acid_13C6
Oxoadipic acid_13C6
C9:0_13C6
C11:1 cis-10 _13C6
3_Pyridylacetic acid_13C6

C11:0_13C6
C13:1 cis_12 _13C6
Nicotinic acid_13C6
Citramalic acid_13C6
Methylcysteine_13C6
m_Hydroxyhippuric_13C6
But_2_enoic acid_13C6
Picolinic acid_13C6
Ethylmethylacetic acid_13C6
Benzoic acid_13C6
Indoleacetic acid_13C6
Glutaric acid_13C6
3_Indolepropionic acid_13C6
4_Hydroxyphenylpyruvic acid_13C6
Sebacic acid_13C6
Alpha_ketoisovaleric acid_13C6
Carnosine_13C6
Ketoleucine_13C6
Phenylpyruvic acid_13C6
DCA_D4
Erythronic acid_13C6
CA_D4
LCA_D4
GCA_D4
TCA_D4
GCDCA_D4
C16:0_D31
C18:0_D35
D_Glucose_D7
D_Fructose_6C13
Cinnamic acid_13C6
Alpha_N_Phenylacetyl_L_glutamine_13C6
L_Tyrosine_D4
L_Pipecolic acid_13C6
Threonic acid_13C6
C13 0_13C6
L_lactic acid_13C3
L_valine_D8
Ornithine_D7
L_Arginine_15N2
L_Lysine_D4
Glycine_D3
L_Alanine_D4
L_Serine_D4
L_threonine_D2
L_Glutamine_D5

L_Proline_13C5
L_Methionine_D4
L_Glutamic acid_13C5
L_Phenylalanine_D2
L_Aspartic acid_D3
L_Tryptophan_D4
Leucine_D2