

Overview

Useful For

Diagnosis and monitoring for patients affected with 1 of the following inborn errors of metabolism:

Fatty Acid Oxidation Disorders

- Glutaric acidemia type II
- Medium-chain 3-ketoacyl-CoA thiolase (MCKAT) deficiency
- Medium-chain acyl-CoA dehydrogenase (MCAD) deficiency
- Short chain acyl-CoA dehydrogenase (SCAD) deficiency

Organic Acidurias

- 2-Methyl-3-hydroxybutyryl-CoA dehydrogenase (2M3HBD) deficiency
- 2-Methylbutyryl-CoA dehydrogenase deficiency
- 3-Methylcrotonyl-CoA carboxylase deficiency
- 3-Methylglutaconyl-CoA-hydratase deficiency
- Aminoacylase 1 deficiency
- Beta-ketothiolase deficiency
- Ethylmalonic encephalopathy
- Glutaryl-CoA dehydrogenase deficiency
- Isobutyryl-CoA dehydrogenase (IBD) deficiency
- Isovaleryl-CoA dehydrogenase deficiency
- Multiple carboxylase deficiency
- Propionic acidemia

Highlights

This test provides a quantitative report of abnormal levels of acylglycines in urine, identified via gas chromatography-mass spectrometry.

Testing Algorithm

The following algorithms are available in Special Instructions:

[-Newborn Screening Follow-up for Elevations of C8, C6, and C10 Acylcarnitines \(also applies to any plasma or serum C8, C6, and C10 acylcarnitine elevations\)](#)

[-Newborn Screening Follow-up for Isolated C4 Acylcarnitine Elevations \(also applies to any plasma or serum C4 acylcarnitine elevation\)](#)

[-Newborn Screening Follow-up for Isolated C5 Acylcarnitine Elevations \(also applies to any plasma or serum C5 acylcarnitine elevation\)](#)

Special Instructions

- [Newborn Screening Follow-up for Isolated C4 Acylcarnitine Elevations \(also applies to any plasma or serum C4 acylcarnitine elevations\)](#)
- [Newborn Screening Follow-up for Elevations of C8, C6, and C10 Acylcarnitine Elevations \(also applies to any plasma or serum C8, C6, and C10 acylcarnitine elevations\)](#)
- [Newborn Screening Follow-up for Isolated C5 Acylcarnitines Elevations \(also applies to any plasma or serum C5 acylcarnitine elevations\)](#)
- [Biochemical Genetics Patient Information](#)

Method Name

Gas Chromatography-Mass Spectrometry (GC-MS) Stable Isotope Dilution Analysis

NY State Available

Yes

Specimen

Specimen Type

Urine

Advisory Information

Diagnostic specificity of inborn errors of metabolism via urine acylglycine testing is available only for selected inborn errors of metabolism; it is recommended that urine organic acids (OAU / Organic Acids Screen, Urine) be ordered and assessed simultaneously due to the limited number of metabolites included in this urine acylglycine test.

Necessary Information

1. Patient's age and gender are required.
2. Include family history, clinical condition (asymptomatic or acute episode), diet, and drug therapy information.

Specimen Required

Supplies: Urine Tubes, 10 mL (T068)

Container/Tube: Plastic, 10-mL urine tube

Specimen Volume: 10 mL

Pediatric: If insufficient collection volume, submit as much specimen as possible in a single container; the laboratory will determine if volume is sufficient for testing.

Collection Instructions:

1. Collect a random urine specimen.
2. No preservative.

Forms

[Biochemical Genetics Patient Information](#) (T602) in Special Instructions.

Specimen Minimum Volume

4 mL

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Frozen (preferred)	416 days	
	Refrigerated	9 days	

Clinical and Interpretive
Clinical Information

Acylglycines are glycine conjugates of acyl-CoA species, which occur as normal intermediates of amino acid and fatty acid metabolism. In abnormal concentrations, acylglycines are biochemical markers of selected inborn errors of metabolism (IEM). Analysis of acylglycines is useful for the diagnosis and monitoring for specific fatty acid oxidation disorders and organic acidurias, although is recommended to use this testing in conjunction with urine organic acids and plasma acylcarnitines testing in order to establish a diagnosis.

In particular, acylglycine analysis is more sensitive and specific for the identification of asymptomatic patients and those who may experience mild or intermittent biochemical phenotypes that could be missed by organic acid analysis alone.

Reference Values

Reference Values; Expressed as mg/g creatinine						
	< or =11 Months		12-23 Months		24-35 Months	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.18-1.30	0.18-1.30	0.17-1.29	0.17-1.29	0.17-1.28	0.17-1.28
n-Propionylglycine	0.16-0.91	0.16-0.91	0.16-0.91	0.16-0.91	0.16-0.90	0.16-0.90
Isobutyrylglycine	0.17-2.50	0.17-2.50	0.17-2.49	0.17-2.49	0.17-2.47	0.17-2.47
Ethylmalonic acid	2.18-15.29	2.06-17.30	2.15-15.13	2.03-17.08	2.11-14.94	2.00-16.82
n-Butyrylglycine	0.20-1.37	0.19-1.29	0.20-1.36	0.19-1.28	0.20-1.34	0.19-1.26



2-Methylsuccinic acid	1.16-5.97	1.09-6.10	1.14-5.89	1.07-6.01	1.13-5.79	1.05-5.91
2-Methylbutyrylglycine	0.10-1.42	0.09-1.40	0.10-1.40	0.09-1.39	0.10-1.38	0.09-1.37
Isovalerylglycine	0.47-7.15	0.47-7.15	0.48-7.13	0.48-7.13	0.48-7.10	0.48-7.10
Glutaric acid	0.45-6.20	0.47-6.02	0.45-6.11	0.46-5.92	0.44-6.00	0.46-5.81
3-Methylcrotonylglycine	0.28-1.55	0.28-1.55	0.28-1.53	0.28-1.53	0.28-1.50	0.28-1.50
n-Tiglylglycine	1.05-5.76	1.05-5.76	1.05-5.67	1.05-5.67	1.05-5.56	1.05-5.56
3-Methylglutamic acid	2.79-12.73	2.79-12.73	2.77-12.60	2.77-12.60	2.75-12.43	2.75-12.43
n-Hexanoylglycine	0.35-1.70	0.36-1.67	0.35-1.69	0.36-1.66	0.35-1.68	0.35-1.65
n-Octanoylglycine	0.16-1.60	0.16-1.60	0.16-1.59	0.16-1.59	0.16-1.58	0.16-1.58
3-Phenylpropionylglycine	0.08-1.10	0.07-1.06	0.08-1.09	0.07-1.05	0.08-1.09	0.07-1.05
trans-Cinnamoylglycine	0.41-4.81	0.40-4.73	0.41-4.81	0.40-4.73	0.41-4.81	0.40-4.73
Suberylglycine	0.38-3.09	0.38-3.09	0.38-3.05	0.38-3.05	0.37-3.01	0.37-3.01
Dodecanedioic acid	0.01-0.09	0.01-0.09	0.01-0.09	0.01-0.09	0.01-0.09	0.01-0.09
Tetradecanedioic acid	0.01-0.07	0.01-0.07	0.01-0.07	0.01-0.07	0.01-0.06	0.01-0.06
Hexadecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
	3 Years		4 Years		5 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.17-1.26	0.17-1.26	0.17-1.24	0.17-1.24	0.17-1.21	0.17 - 1.21
n-Propionylglycine	0.16-0.89	0.16-0.89	0.16-0.88	0.16-0.88	0.16-0.87	0.16-0.87
Isobutyrylglycine	0.17-2.46	0.17-2.46	0.17-2.43	0.17-2.43	0.17-2.39	0.17-2.39
Ethylmalonic acid	2.08-14.72	1.97-16.53	2.01-14.31	1.91-16.00	1.94-13.85	1.84-15.41
n-Butyrylglycine	0.20-1.32	0.19-1.24	0.20-1.29	0.19-1.21	0.19-1.25	0.19-1.18
2-Methylsuccinic acid	1.10-5.69	1.03-5.80	1.06-5.50	0.99-5.59	1.02-5.28	0.95-5.35



2-Methylbutyrylglycine	0.10-1.36	0.08-1.36	0.10-1.32	0.08-1.32	0.10-1.28	0.08-1.29
Isovalerylglycine	0.48-7.07	0.48-7.07	0.49-7.00	0.49-7.00	0.50-6.92	0.50-6.92
Glutaric acid	0.43-5.88	0.45-5.68	0.42-5.65	0.44-5.44	0.41-5.39	0.43-5.17
3-Methylcrotonylglycine	0.28-1.47	0.28-1.47	0.28-1.42	0.28-1.42	0.28-1.35	0.28-1.35
n-Tiglylglycine	1.05-5.44	1.05-5.44	1.04-5.22	1.04-5.22	1.03-4.98	1.03-4.98
3-Methylglutamic acid	2.72-12.25	2.72-12.25	2.68-11.90	2.68-11.90	2.62-11.50	2.62-11.50
n-Hexanoylglycine	0.34-1.66	0.35-1.64	0.34-1.64	0.34-1.61	0.33-1.62	0.34-1.59
n-Octanoylglycine	0.16-1.57	0.16-1.57	0.16-1.55	0.16-1.55	0.16-1.53	0.16-1.53
3-Phenylpropionylglycine	0.08-1.08	0.08-1.04	0.08-1.07	0.08-1.04	0.08-1.06	0.08-1.03
trans-Cinnamoylglycine	0.42-4.80	0.40-4.73	0.42-4.80	0.40-4.73	0.42-4.78	0.40-4.72
Suberylglycine	0.37-2.97	0.37-2.97	0.36-2.90	0.36-2.90	0.35-2.82	0.35-2.82
Dodecanedioic acid	0.01-0.09	0.01-0.09	0.01-0.09	0.01-0.09	0.01-0.08	0.01-0.08
Tetradecanedioic acid	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06
Hexadecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
	6 Years		7 Years		8 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.16-1.18	0.16-1.18	0.16-1.15	0.16-1.15	0.15-1.12	0.15-1.12
n-Propionylglycine	0.16-0.85	0.16-0.85	0.15-0.83	0.15-0.83	0.15-0.81	0.15-0.81
Isobutyrylglycine	0.17-2.35	0.17-2.35	0.17-2.31	0.17-2.30	0.17-2.26	0.16-2.25
Ethylmalonic acid	1.86-13.33	1.76-14.76	1.77-12.77	1.68-14.07	1.69-12.18	1.61-13.39
n-Butyrylglycine	0.19-1.21	0.19-1.14	0.19-1.17	0.18-1.10	0.19-1.14	0.18-1.06
2-Methylsuccinic acid	0.97-5.05	0.90-5.09	0.92-4.80	0.85-4.80	0.86-4.56	0.80-4.52
2-Methylbutyrylglycine	0.10-1.23	0.08-1.25	0.09-1.19	0.08-1.21	0.09-1.14	0.08-1.16



Isovalerylglycine	0.51-6.82	0.51-6.82	0.51-6.69	0.51-6.69	0.52-6.55	0.52-6.55
Glutaric acid	0.40-5.10	0.42-4.87	0.39-4.79	0.40-4.54	0.37-4.47	0.39-4.21
3-Methylcrotonylglycine	0.28-1.29	0.28-1.29	0.27-1.22	0.27-1.22	0.27-1.16	0.27-1.16
n-Tiglylglycine	1.01-4.73	1.01-4.73	0.99-4.46	0.99-4.46	0.96-4.22	0.96-4.22
3-Methylglutamic acid	2.55-11.05	2.55-11.05	2.48-10.55	2.48-10.55	2.40-10.05	2.40-10.05
n-Hexanoylglycine	0.33-1.59	0.33-1.56	0.32-1.56	0.32-1.53	0.31-1.53	0.31-1.50
n-Octanoylglycine	0.16-1.51	0.16-1.51	0.15-1.49	0.15-1.49	0.15-1.47	0.15-1.47
3-Phenylpropionylglycine	0.08-1.04	0.08-1.02	0.08-1.03	0.08-1.01	0.08-1.02	0.08-1.00
trans-Cinnamoylglycine	0.43-4.76	0.40-4.71	0.43-4.74	0.40-4.69	0.43-4.71	0.40-4.65
Suberylglycine	0.34-2.74	0.34-2.74	0.32-2.66	0.32-2.66	0.31-2.58	0.31-2.58
Dodecanedioic acid	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08
Tetradecanedioic acid	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.05	0.01-0.05
Hexadecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.03	0.01-0.03
	9 Years		10 Years		11 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.15-1.09	0.15-1.09	0.15-1.07	0.15 1.07	0.14-1.04	0.14-1.04
n-Propionylglycine	0.14-0.79	0.14-0.79	0.13-0.77	0.13-0.77	0.13-0.76	0.13-0.76
Isobutyrylglycine	0.17-2.21	0.16-2.20	0.17-2.16	0.16-2.15	0.17-2.11	0.16-2.10
Ethylmalonic acid	1.62-11.59	1.53-12.73	1.55-11.00	1.47-12.10	1.49-10.43	1.41-11.52
n-Butyrylglycine	0.18-1.10	0.18-1.03	0.18-1.07	0.18-0.99	0.18-1.05	0.17-0.96
2-Methylsuccinic acid	0.81-4.32	0.75-4.24	0.76-4.10	0.71-3.98	0.71-3.90	0.67-3.75
2-Methylbutyrylglycine	0.09-1.09	0.08-1.13	0.09-1.05	0.08-1.09	0.09-1.01	0.08-1.06
Isovalerylglycine	0.52-6.40	0.52-6.40	0.53-6.24	0.53-6.24	0.53-6.07	0.53-6.07
Glutaric acid	0.36-4.16	0.37-3.88	0.36-3.87	0.36-3.57	0.35-3.60	0.35-3.28



3-Methylcrotonylglycine	0.26-1.10	0.26-1.10	0.25-1.04	0.25-1.04	0.24-1.00	0.24-1.00
n-Tiglylglycine	0.93-4.00	0.93-4.00	0.90-3.80	0.90-3.80	0.87-3.64	0.87-3.64
3-Methylglutamic acid	2.32-9.54	2.32-9.54	2.23-9.07	2.23-9.07	2.15-8.63	2.15-8.63
n-Hexanoylglycine	0.30-1.50	0.30-1.46	0.29-1.47	0.29-1.43	0.29-1.45	0.28-1.39
n-Octanoylglycine	0.15-1.45	0.15-1.45	0.15-1.44	0.15-1.44	0.15-1.42	0.15-1.42
3-Phenylpropionylglycine	0.08-1.00	0.08-1.00	0.08-1.00	0.09-0.99	0.08-0.99	0.09-0.98
trans-Cinnamoylglycine	0.43-4.67	0.40-4.60	0.42-4.63	0.40-4.54	0.42-4.59	0.39-4.46
Suberylglycine	0.30-2.52	0.30-2.52	0.29-2.46	0.29-2.46	0.28-2.42	0.28-2.42
Dodecanedioic acid	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08
Tetradecanedioic acid	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05
Hexadecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
	12 Years		13 Years		14 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.14-1.01	0.14-1.01	0.14-0.98	0.14-0.98	0.13-0.95	0.13-0.95
n-Propionylglycine	0.13-0.74	0.13-0.74	0.12-0.72	0.12-0.72	0.12-0.71	0.12-0.71
Isobutyrylglycine	0.17-2.05	0.16-2.05	0.17-2.00	0.16-2.01	0.17-1.95	0.16-1.97
Ethylmalonic acid	1.44-9.88	1.36-10.99	1.40-9.36	1.31-10.50	1.37-8.88	1.28-10.04
n-Butyrylglycine	0.18-1.03	0.17-0.93	0.18-1.01	0.17-0.90	0.18-1.00	0.17-0.88
2-Methylsuccinic acid	0.67-3.71	0.63-3.54	0.64-3.53	0.60-3.35	0.61-3.37	0.58-3.19
2-Methylbutyrylglycine	0.09-0.98	0.08-1.03	0.09-0.95	0.08-1.01	0.09-0.93	0.08-0.99
Isovalerylglycine	0.53-5.90	0.53-5.90	0.53-5.73	0.53-5.73	0.53-5.56	0.53-5.56
Glutaric acid	0.35-3.35	0.35-3.00	0.34-3.13	0.34-2.75	0.34-2.94	0.34-2.53
3-Methylcrotonylglycine	0.24-0.96	0.24-0.96	0.23-0.93	0.23-0.93	0.23-0.91	0.23-0.91
n-Tiglylglycine	0.84-3.51	0.84-3.51	0.82-3.40	0.82-3.40	0.80-3.30	0.80-3.30



3-Methylglutaconic acid	2.07-8.25	2.07-8.25	2.01-7.93	2.01-7.93	1.95-7.67	1.95-7.67
n-Hexanoylglycine	0.28-1.43	0.27-1.36	0.27-1.41	0.26-1.32	0.27-1.39	0.26-1.28
n-Octanoylglycine	0.15-1.41	0.15-1.41	0.15-1.39	0.15-1.39	0.14-1.38	0.14-1.38
3-Phenylpropionylglycine	0.08-0.98	0.09-0.98	0.08-0.97	0.09-0.97	0.08-0.97	0.09-0.96
trans-Cinnamoylglycine	0.41-4.54	0.39-4.36	0.40-4.49	0.38-4.26	0.39-4.44	0.38-4.14
Suberylglycine	0.28-2.38	0.28-2.38	0.27-2.35	0.27-2.35	0.27-2.33	0.27-2.33
Dodecanedioic acid	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.08	0.01-0.07	0.01-0.07
Tetradecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Hexadecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
	15 Years		16 Years		17 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.13-0.92	0.13-0.92	0.14-0.89	0.14-0.89	0.14-0.87	0.14-0.87
n-Propionylglycine	0.13-0.70	0.13-0.70	0.13-0.69	0.13-0.69	0.13-0.69	0.13-0.69
Isobutyrylglycine	0.18-1.90	0.16-1.93	0.18-1.85	0.16-1.89	0.18-1.81	0.17-1.85
Ethylmalonic acid	1.35-8.44	1.25-9.61	1.33-8.05	1.23-9.20	1.32-7.72	1.22-8.79
n-Butyrylglycine	0.18-0.99	0.17-0.86	0.18-0.98	0.17-0.84	0.19-0.97	0.17-0.82
2-Methylsuccinic acid	0.58-3.22	0.56-3.05	0.56-3.08	0.55-2.92	0.55-2.96	0.54-2.81
2-Methylbutyrylglycine	0.09-0.91	0.08-0.97	0.09-0.90	0.08-0.95	0.09-0.89	0.09-0.94
Isovalerylglycine	0.53-5.39	0.53-5.39	0.53-5.23	0.53-5.23	0.53-5.07	0.53-5.07
Glutaric acid	0.34-2.77	0.34-2.32	0.34-2.63	0.34-2.14	0.34-2.50	0.34-1.98
3-Methylcrotonylglycine	0.23-0.89	0.23-0.89	0.23-0.87	0.23-0.87	0.24-0.86	0.24-0.86
n-Tiglylglycine	0.80-3.22	0.80-3.22	0.80-3.14	0.80-3.14	0.81-3.06	0.81-3.06
3-Methylglutaconic acid	1.91-7.48	1.91-7.48	1.89-7.34	1.89-7.34	1.90-7.25	1.90-7.25



n-Hexanoylglycine	0.26-1.38	0.25-1.24	0.26-1.37	0.26-1.20	0.26-1.35	0.26-1.16
n-Octanoylglycine	0.14-1.37	0.14-1.37	0.15-1.37	0.15-1.37	0.15-1.36	0.15-1.36
3-Phenylpropionylglycine	0.09-0.96	0.10-0.96	0.09-0.96	0.10-0.95	0.09-0.96	0.10-0.94
trans-Cinnamoylglycine	0.39-4.38	0.37-4.01	0.38-4.33	0.37-3.88	0.38-4.28	0.36-3.74
Suberylglycine	0.26-2.31	0.26-2.31	0.26-2.29	0.26-2.29	0.26-2.27	0.26-2.27
Dodecanedioic acid	0.01-0.07	0.01-0.07	0.01-0.07	0.01-0.07	0.01-0.07	0.01-0.07
Tetradecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
	18 Years		19 Years		20 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.14-0.85	0.14-0.85	0.14-0.83	0.14-0.83	0.14-0.81	0.14-0.81
n-Propionylglycine	0.14-0.68	0.14-0.68	0.14-0.67	0.14-0.67	0.15-0.67	0.15-0.67
Isobutyrylglycine	0.18-1.77	0.18-1.82	0.19-1.74	0.19-1.78	0.19-1.71	0.19-1.74
Ethylmalonic acid	1.32-7.44	1.22-8.40	1.32-7.22	1.22-8.00	1.32-7.04	1.22-7.60
n-Butyrylglycine	0.19-0.96	0.18-0.80	0.19-0.95	0.18-0.78	0.19-0.94	0.19-0.77
2-Methylsuccinic acid	0.54-2.85	0.53-2.71	0.54-2.75	0.53-2.63	0.53-2.67	0.53-2.55
2-Methylbutyrylglycine	0.09-0.88	0.09-0.93	0.10-0.88	0.09-0.91	0.10-0.87	0.09-0.90
Isovalerylglycine	0.53-4.91	0.53-4.91	0.53-4.76	0.53-4.76	0.54-4.62	0.54-4.62
Glutaric acid	0.34-2.39	0.34-1.83	0.35-2.29	0.35-1.70	0.35-2.20	0.35-1.59
3-Methylcrotonylglycine	0.24-0.85	0.24-0.85	0.25-0.84	0.25-0.84	0.26-0.83	0.26-0.83
n-Tiglylglycine	0.83-2.98	0.83-2.98	0.85-2.90	0.85-2.90	0.87-2.83	0.87-2.83
3-Methylglutamic acid	1.93-7.19	1.93-7.19	1.99-7.15	1.99-7.15	2.07-7.11	2.07-7.11
n-Hexanoylglycine	0.26-1.34	0.26-1.13	0.26-1.32	0.27-1.09	0.26-1.30	0.28-1.06



n-Octanoylglycine	0.15-1.35	0.15-1.35	0.15-1.35	0.15-1.35	0.15-1.34	0.15-1.34
3-Phenylpropionylglycine	0.09-0.95	0.10-0.93	0.09-0.95	0.11-0.92	0.09-0.95	0.11-0.91
trans-Cinnamoylglycine	0.38-4.24	0.36-3.60	0.38-4.19	0.36-3.45	0.38-4.16	0.36-3.31
Suberylglycine	0.26-2.26	0.26-2.26	0.26-2.24	0.26-2.24	0.26-2.22	0.26-2.22
Dodecanedioic acid	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06	0.01-0.06
Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
	21 Years		22 Years		23 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.15-0.80	0.15-0.80	0.15-0.79	0.15-0.79	0.15-0.78	0.15-0.78
n-Propionylglycine	0.16-0.66	0.16-0.66	0.16-0.65	0.16-0.65	0.17-0.64	0.17-0.64
Isobutyrylglycine	0.19-1.69	0.20-1.70	0.19-1.68	0.21-1.66	0.19-1.66	0.22-1.62
Ethylmalonic acid	1.33-6.92	1.23-7.19	1.33-6.84	1.24-6.80	1.34-6.78	1.25-6.41
n-Butyrylglycine	0.20-0.92	0.19-0.75	0.20-0.91	0.19-0.74	0.20-0.90	0.20-0.72
2-Methylsuccinic acid	0.54-2.62	0.53-2.48	0.54-2.58	0.54-2.42	0.55-2.55	0.54-2.37
2-Methylbutyrylglycine	0.10-0.87	0.10-0.88	0.10-0.87	0.10-0.86	0.10-0.86	0.10-0.84
Isovalerylglycine	0.54-4.49	0.54-4.49	0.55-4.37	0.55-4.37	0.56-4.26	0.56-4.26
Glutaric acid	0.35-2.13	0.35-1.49	0.35-2.06	0.36-1.41	0.35-2.00	0.36-1.34
3-Methylcrotonylglycine	0.28-0.83	0.28-0.83	0.29-0.82	0.29-0.82	0.30-0.82	0.30-0.82
n-Tiglylglycine	0.90-2.76	0.90-2.76	0.93-2.70	0.93-2.70	0.95-2.64	0.95-2.64
3-Methylglutamic acid	2.17-7.07	2.17-7.07	2.29-7.02	2.29-7.02	2.41-6.95	2.41-6.95
n-Hexanoylglycine	0.26-1.29	0.28-1.03	0.26-1.27	0.29-1.00	0.26-1.26	0.29-0.98
n-Octanoylglycine	0.15-1.33	0.15-1.33	0.16-1.32	0.16-1.32	0.16-1.30	0.16-1.30



3-Phenylpropionylglycine	0.10-0.94	0.11-0.89	0.10-0.94	0.12-0.88	0.10-0.94	0.12-0.87
trans-Cinnamoylglycine	0.38-4.13	0.36-3.17	0.39-4.10	0.36-3.02	0.39-4.08	0.37-2.89
Suberylglycine	0.26-2.21	0.26-2.21	0.26-2.19	0.26-2.19	0.26-2.17	0.26-2.17
Dodecanedioic acid	0.01-0.06	0.01-0.06	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05
Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
	24 Years		25 Years		26 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.15-0.77	0.15-0.77	0.15-0.75	0.15-0.75	0.15-0.73	0.15-0.73
n-Propionylglycine	0.17-0.62	0.17-0.62	0.17-0.61	0.17-0.61	0.18-0.59	0.18-0.59
Isobutyrylglycine	0.20-1.65	0.22-1.57	0.20-1.65	0.22-1.52	0.20-1.64	0.23-1.48
Ethylmalonic acid	1.35-6.74	1.25-6.04	1.36-6.72	1.26-5.69	1.37-6.70	1.27-5.38
n-Butyrylglycine	0.20-0.89	0.20-0.71	0.20-0.87	0.20-0.70	0.20-0.86	0.20-0.69
2-Methylsuccinic acid	0.55-2.54	0.55-2.32	0.56-2.54	0.56-2.28	0.57-2.54	0.56-2.24
2-Methylbutyrylglycine	0.10-0.86	0.11-0.82	0.11-0.86	0.11-0.79	0.11-0.85	0.11-0.77
Isovalerylglycine	0.56-4.16	0.56-4.16	0.56-4.08	0.56-4.08	0.56-4.01	0.56-4.01
Glutaric acid	0.35-1.94	0.36-1.28	0.35-1.88	0.36-1.24	0.34-1.83	0.36-1.21
3-Methylcrotonylglycine	0.31-0.81	0.31-0.81	0.31-0.81	0.31-0.81	0.32-0.81	0.32-0.81
n-Tiglylglycine	0.97-2.59	0.97-2.59	0.98-2.55	0.98-2.55	0.99-2.51	0.99-2.51
3-Methylglutamic acid	2.53-6.88	2.53-6.88	2.63-6.78	2.63-6.78	2.72-6.69	2.72-6.69
n-Hexanoylglycine	0.27-1.24	0.30-0.95	0.27-1.23	0.30-0.94	0.27-1.22	0.30-0.92
n-Octanoylglycine	0.16-1.29	0.16-1.29	0.17-1.28	0.17-1.28	0.17-1.26	0.17-1.26
3-Phenylpropionylglycine	0.10-0.94	0.12-0.86	0.11-0.93	0.13-0.85	0.11-0.93	0.13-0.84



trans-Cinnamoylglycine	0.39-4.07	0.38-2.76	0.39-4.06	0.39-2.64	0.40-4.06	0.39-2.54
Suberylglycine	0.27-2.16	0.27-2.16	0.27-2.14	0.27-2.14	0.27-2.12	0.27-2.12
Dodecanedioic acid	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05
Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	27 Years		28 Years		29 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.15-0.71	0.15-0.71	0.15-0.69	0.15-0.69	0.15-0.67	0.15-0.67
n-Propionylglycine	0.18-0.57	0.18-0.57	0.19-0.56	0.19-0.56	0.19-0.54	0.19-0.54
Isobutyrylglycine	0.20-1.63	0.23-1.44	0.21-1.62	0.23-1.41	0.21-1.61	0.22-1.38
Ethylmalonic acid	1.38-6.67	1.27-5.11	1.39-6.64	1.28-4.88	1.41-6.59	1.28-4.69
n-Butyrylglycine	0.21-0.84	0.20-0.68	0.21-0.83	0.20-0.67	0.21-0.82	0.20-0.66
2-Methylsuccinic acid	0.58-2.54	0.57-2.21	0.59-2.54	0.57-2.17	0.59-2.53	0.58-2.14
2-Methylbutyrylglycine	0.11-0.85	0.12-0.75	0.11-0.85	0.12-0.73	0.11-0.85	0.12-0.71
Isovalerylglycine	0.56-3.94	0.56-3.94	0.56-3.88	0.56-3.88	0.55-3.82	0.55-3.82
Glutaric acid	0.34-1.78	0.36-1.19	0.34-1.73	0.36-1.18	0.34-1.69	0.35-1.17
3-Methylcrotonylglycine	0.32-0.80	0.32-0.80	0.32-0.80	0.32-0.80	0.32-0.80	0.32-0.80
n-Tiglylglycine	1.00-2.48	1.00-2.48	1.00-2.45	1.00-2.45	1.00-2.43	1.00-2.43
3-Methylglutamic acid	2.78-6.58	2.78-6.58	2.82-6.49	2.82-6.49	2.82-6.39	2.82-6.39
n-Hexanoylglycine	0.27-1.21	0.30-0.90	0.27-1.21	0.30-0.89	0.28-1.20	0.30-0.88
n-Octanoylglycine	0.17-1.25	0.17-1.25	0.17-1.24	0.17-1.24	0.18-1.23	0.18-1.23
3-Phenylpropionylglycine	0.11-0.93	0.13-0.83	0.12-0.92	0.14-0.82	0.12-0.92	0.14-0.81
trans-Cinnamoylglycine	0.40-4.06	0.40-2.44	0.41-4.06	0.41-2.37	0.42-4.06	0.42-2.32



Suberylglycine	0.28-2.10	0.28-2.10	0.28-2.08	0.28-2.08	0.29-2.06	0.29-2.06
Dodecanedioic acid	0.01-0.05	0.01-0.05	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	30 Years		31 Years		32 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.15-0.64	0.15-0.64	0.16-0.62	0.16-0.62	0.16-0.60	0.16-0.60
n-Propionylglycine	0.19-0.52	0.19-0.52	0.20-0.50	0.20-0.50	0.20-0.49	0.20-0.49
Isobutyrylglycine	0.21-1.60	0.22-1.37	0.21-1.59	0.22-1.36	0.21-1.58	0.22-1.35
Ethylmalonic acid	1.42-6.54	1.28-4.54	1.43-6.48	1.29-4.42	1.44-6.42	1.29-4.32
n-Butyrylglycine	0.21-0.81	0.20-0.66	0.21-0.80	0.20-0.66	0.22-0.79	0.20-0.66
2-Methylsuccinic acid	0.60-2.52	0.58-2.10	0.60-2.50	0.58-2.05	0.61-2.47	0.58-2.01
2-Methylbutyrylglycine	0.11-0.85	0.12-0.70	0.11-0.85	0.12-0.69	0.11-0.85	0.12-0.68
Isovalerylglycine	0.55-3.77	0.55-3.77	0.54-3.72	0.54-3.72	0.53-3.68	0.53-3.68
Glutaric acid	0.35-1.65	0.35-1.17	0.35-1.61	0.35-1.17	0.35-1.58	0.35-1.17
3-Methylcrotonylglycine	0.32-0.79	0.32-0.79	0.31-0.79	0.31-0.79	0.31-0.78	0.31-0.78
n-Tiglylglycine	0.99-2.41	0.99-2.41	0.98-2.39	0.98-2.39	0.97-2.37	0.97-2.37
3-Methylglutamic acid	2.80-6.30	2.80-6.30	2.77-6.21	2.77-6.21	2.71-6.13	2.71-6.13
n-Hexanoylglycine	0.28-1.20	0.29-0.87	0.28-1.20	0.29-0.86	0.29-1.20	0.28-0.85
n-Octanoylglycine	0.18-1.22	0.18-1.22	0.18-1.21	0.18-1.21	0.18-1.19	0.18-1.19
3-Phenylpropionylglycine	0.12-0.92	0.14-0.80	0.12-0.91	0.14-0.80	0.12-0.91	0.13-0.79
trans-Cinnamoylglycine	0.43-4.05	0.43-2.28	0.44-4.05	0.44-2.25	0.45-4.04	0.44-2.24
Suberylglycine	0.29-2.04	0.29-2.04	0.30-2.02	0.30-2.02	0.30-1.99	0.30-1.99



Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	33 Years		34 Years		35 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.16-0.59	0.16-0.59	0.17-0.58	0.17-0.58	0.17-0.56	0.17-0.56
n-Propionylglycine	0.20-0.48	0.20-0.48	0.21-0.47	0.21-0.47	0.21-0.46	0.21-0.46
Isobutyrylglycine	0.21-1.57	0.22-1.35	0.22-1.56	0.23-1.35	0.22-1.55	0.23-1.35
Ethylmalonic acid	1.45-6.35	1.29-4.24	1.45-6.28	1.30-4.18	1.45-6.22	1.30-4.12
n-Butyrylglycine	0.22-0.78	0.21-0.66	0.22-0.77	0.21-0.65	0.22-0.77	0.22-0.65
2-Methylsuccinic acid	0.61-2.44	0.58-1.96	0.61-2.41	0.58-1.92	0.61-2.38	0.58-1.88
2-Methylbutyrylglycine	0.11-0.85	0.11-0.67	0.11-0.85	0.11-0.66	0.11-0.85	0.11-0.66
Isovalerylglycine	0.52-3.65	0.52-3.65	0.51-3.62	0.51-3.62	0.50-3.60	0.50-3.60
Glutaric acid	0.35-1.55	0.35-1.16	0.35-1.53	0.35-1.16	0.36-1.52	0.35-1.15
3-Methylcrotonylglycine	0.31-0.77	0.31-0.77	0.30-0.76	0.30-0.76	0.30-0.75	0.30-0.75
n-Tiglylglycine	0.96-2.35	0.96-2.35	0.95-2.33	0.95-2.33	0.95-2.30	0.95-2.30
3-Methylglutamic acid	2.66-6.05	2.66-6.05	2.60-5.97	2.60-5.97	2.54-5.89	2.54-5.89
n-Hexanoylglycine	0.29-1.19	0.28-0.84	0.29-1.19	0.28-0.84	0.30-1.18	0.28-0.83
n-Octanoylglycine	0.18-1.18	0.18-1.18	0.17-1.17	0.17-1.17	0.17-1.16	0.17-1.16
3-Phenylpropionylglycine	0.12-0.90	0.13-0.78	0.12-0.90	0.13-0.77	0.12-0.89	0.13-0.77
trans-Cinnamoylglycine	0.46-4.02	0.45-2.22	0.46-4.01	0.45-2.21	0.47-3.99	0.46-2.20
Suberylglycine	0.31-1.97	0.31-1.97	0.31-1.95	0.31-1.95	0.31-1.92	0.31-1.92
Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04



Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	36 Years		37 Years		38 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.17-0.56	0.17-0.56	0.18-0.55	0.18-0.55	0.18-0.54	0.18-0.54
n-Propionylglycine	0.21-0.45	0.21-0.45	0.21-0.45	0.21-0.45	0.21-0.44	0.21-0.44
Isobutyrylglycine	0.22-1.54	0.23-1.35	0.22-1.52	0.24-1.34	0.22-1.51	0.25-1.33
Ethylmalonic acid	1.45-6.16	1.30-4.06	1.45-6.11	1.31-4.01	1.45-6.07	1.31-3.95
n-Butyrylglycine	0.22-0.76	0.22-0.64	0.22-0.76	0.22-0.64	0.22-0.76	0.23-0.63
2-Methylsuccinic acid	0.61-2.35	0.58-1.84	0.61-2.33	0.58-1.81	0.61-2.31	0.58-1.78
2-Methylbutyrylglycine	0.12-0.85	0.11-0.66	0.12-0.85	0.11-0.66	0.12-0.84	0.11-0.66
Isovalerylglycine	0.50-3.59	0.50-3.59	0.49-3.58	0.49-3.58	0.49-3.58	0.49-3.58
Glutaric acid	0.36-1.50	0.35-1.14	0.36-1.50	0.35-1.13	0.36-1.49	0.36-1.12
3-Methylcrotonylglycine	0.30-0.75	0.30-0.75	0.30-0.74	0.30-0.74	0.30-0.73	0.30-0.73
n-Tiglylglycine	0.94-2.27	0.94-2.27	0.94-2.24	0.94-2.24	0.94-2.20	0.94-2.20
3-Methylglutamic acid	2.49-5.81	2.49-5.81	2.45-5.74	2.45-5.74	2.42-5.69	2.42-5.69
n-Hexanoylglycine	0.30-1.17	0.28-0.83	0.30-1.16	0.28-0.82	0.30-1.15	0.29-0.82
n-Octanoylglycine	0.17-1.15	0.17-1.15	0.17-1.13	0.17-1.13	0.17-1.12	0.17-1.12
3-Phenylpropionylglycine	0.12-0.88	0.13-0.76	0.12-0.88	0.13-0.75	0.11-0.87	0.13-0.75
trans-Cinnamoylglycine	0.47-3.98	0.47-2.17	0.46-3.96	0.47-2.14	0.46-3.95	0.48-2.09
Suberylglycine	0.31-1.90	0.31-1.90	0.32-1.88	0.32-1.88	0.32-1.86	0.32-1.86
Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Tetradecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.02	0.01-0.02



Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	39 Years		40 Years		41 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.18-0.54	0.18-0.54	0.18-0.54	0.18-0.54	0.18-0.54	0.18-0.54
n-Propionylglycine	0.20-0.44	0.20-0.44	0.20-0.44	0.20-0.44	0.19-0.44	0.19-0.44
Isobutyrylglycine	0.22-1.49	0.25-1.32	0.23-1.48	0.26-1.31	0.24-1.46	0.26-1.30
Ethylmalonic acid	1.44-6.04	1.32-3.90	1.44-6.01	1.33-3.86	1.43-5.98	1.34-3.82
n-Butyrylglycine	0.22-0.76	0.23-0.63	0.22-0.76	0.24-0.62	0.22-0.76	0.24-0.61
2-Methylsuccinic acid	0.61-2.29	0.59-1.76	0.61-2.28	0.59-1.74	0.62-2.27	0.60-1.72
2-Methylbutyrylglycine	0.12-0.84	0.11-0.66	0.13-0.84	0.11-0.66	0.13-0.84	0.11-0.65
Isovalerylglycine	0.49-3.57	0.49-3.57	0.49-3.57	0.49-3.57	0.49-3.56	0.49-3.56
Glutaric acid	0.36-1.49	0.36-1.10	0.36-1.49	0.36-1.09	0.36-1.49	0.37-1.07
3-Methylcrotonylglycine	0.30-0.73	0.30-0.73	0.30-0.73	0.30-0.73	0.30-0.73	0.30-0.73
n-Tiglylglycine	0.95-2.16	0.95-2.16	0.95-2.12	0.95-2.12	0.96-2.09	0.96-2.09
3-Methylglutamic acid	2.40-5.64	2.40-5.64	2.38-5.60	2.38-5.60	2.36-5.57	2.36-5.57
n-Hexanoylglycine	0.31-1.14	0.29-0.82	0.31-1.13	0.30-0.81	0.31-1.12	0.30-0.81
n-Octanoylglycine	0.17-1.11	0.17-0.11	0.17-1.09	0.17-1.09	0.17-1.08	0.17-1.08
3-Phenylpropionylglycine	0.11-0.87	0.14-0.74	0.11-0.86	0.14-0.73	0.11-0.86	0.14-0.73
trans-Cinnamoylglycine	0.46-3.94	0.49-2.04	0.45-3.93	0.50-1.98	0.44-3.92	0.51-1.92
Suberylglycine	0.32-1.84	0.32-1.84	0.32-1.83	0.32-1.83	0.33-1.81	0.33-1.81
Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	42 Years		43 Years		44 Years	



	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.17-0.53	0.17-0.53	0.17-0.53	0.17-0.53	0.17-0.53	0.17-0.53
n-Propionylglycine	0.19-0.44	0.19-0.44	0.19-0.44	0.19-0.44	0.18-0.44	0.18-0.44
Isobutyrylglycine	0.25-1.44	0.27-1.28	0.26-1.43	0.27-1.27	0.27-1.42	0.27-1.25
Ethylmalonic acid	1.43-5.95	1.35-3.77	1.42-5.91	1.37-3.74	1.42-5.85	1.38-3.69
n-Butyrylglycine	0.22-0.76	0.25-0.61	0.22-0.76	0.25-0.60	0.23-0.76	0.25-0.60
2-Methylsuccinic acid	0.62-2.26	0.61-1.71	0.63-2.26	0.62-1.70	0.64-2.25	0.63-1.68
2-Methylbutyrylglycine	0.14-0.84	0.11-0.65	0.14-0.84	0.11-0.64	0.15-0.84	0.11-0.63
Isovalerylglycine	0.49-3.54	0.49-3.54	0.49-3.51	0.49-3.51	0.49-3.48	0.49-3.48
Glutaric acid	0.36-1.49	0.37-1.05	0.37-1.49	0.38-1.03	0.37-1.49	0.38-1.01
3-Methylcrotonylglycine	0.31-0.73	0.31-0.73	0.31-0.73	0.31-0.73	0.31-0.73	0.31-0.73
n-Tiglylglycine	0.97-2.05	0.97-2.05	0.98-2.03	0.98-2.03	0.99-2.01	0.99-2.01
3-Methylglutamic acid	2.35-5.54	2.35-5.54	2.34-5.53	2.34-5.53	2.33-5.52	2.33-5.52
n-Hexanoylglycine	0.32-1.11	0.31-0.81	0.32-1.11	0.32-0.81	0.32-1.10	0.33-0.81
n-Octanoylglycine	0.18-1.07	0.18-1.07	0.18-1.07	0.18-1.07	0.18-1.06	0.18-1.06
3-Phenylpropionylglycine	0.11-0.86	0.14-0.73	0.11-0.86	0.15-0.72	0.11-0.86	0.15-0.71
trans-Cinnamoylglycine	0.44-3.91	0.52-1.87	0.44-3.89	0.54-1.82	0.44-3.87	0.55-1.78
Suberylglycine	0.33-1.81	0.33-1.81	0.33-1.80	0.33-1.80	0.34-1.80	0.34-1.80
Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	45 Years		46 Years		47 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.17-0.53	0.17-0.53	0.17-0.53	0.17-0.53	0.17-0.53	0.17-0.53



n-Propionylglycine	0.18-0.43	0.18-0.43	0.18-0.43	0.18-0.43	0.18-0.43	0.18-0.43
Isobutyrylglycine	0.29-1.40	0.27-1.23	0.30-1.39	0.26-1.22	0.32-1.39	0.26-1.20
Ethylmalonic acid	1.42-5.78	1.40-3.65	1.42-5.70	1.42-3.60	1.42-5.60	1.43-3.55
n-Butyrylglycine	0.23-0.75	0.25-0.60	0.24-0.75	0.25-0.59	0.24-0.74	0.25-0.59
2-Methylsuccinic acid	0.65-2.25	0.63-1.67	0.66-2.24	0.64-1.65	0.67-2.23	0.65-1.63
2-Methylbutyrylglycine	0.15-0.84	0.11-0.62	0.15-0.84	0.11-0.61	0.16-0.84	0.11-0.60
Isovalerylglycine	0.49-3.45	0.49-3.45	0.49-3.40	0.49-3.40	0.49-3.36	0.49-3.36
Glutaric acid	0.37-1.47	0.39-0.99	0.37-1.46	0.39-0.97	0.38-1.44	0.40-0.95
3-Methylcrotonylglycine	0.31-0.73	0.31-0.73	0.32-0.73	0.32-0.73	0.32-0.73	0.32-0.73
n-Tiglylglycine	1.00-2.00	1.00-2.00	1.02-1.99	1.02-1.99	1.04-1.99	1.04-1.99
3-Methylglutamic acid	2.33-5.52	2.33-5.52	2.34-5.51	2.34-5.51	2.35-5.51	2.35-5.51
n-Hexanoylglycine	0.33-1.09	0.33-0.80	0.34-1.09	0.34-0.80	0.34-1.08	0.35-0.80
n-Octanoylglycine	0.19-1.06	0.19-1.06	0.19-1.05	0.19-1.05	0.20-1.05	0.20-1.05
3-Phenylpropionylglycine	0.11-0.86	0.15-0.70	0.11-0.86	0.15-0.69	0.12-0.85	0.15-0.68
trans-Cinnamoylglycine	0.44-3.84	0.56-1.75	0.45-3.80	0.57-1.73	0.45-3.76	0.58-1.72
Suberylglycine	0.34-1.79	0.34-1.79	0.35-1.79	0.35-1.79	0.36-1.79	0.36-1.79
Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	48 Years		49 Years		50 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.18-0.53	0.18-0.53	0.19-0.53	0.19-0.53	0.19-0.53	0.19-0.53
n-Propionylglycine	0.18-0.42	0.18-0.42	0.18-0.42	0.18-0.42	0.18-0.42	0.18-0.42



Isobutyrylglycine	0.34-1.38	0.25-1.19	0.35-1.37	0.24-1.18	0.36-1.35	0.24-1.17
Ethylmalonic acid	1.43-5.50	1.44-3.49	1.43-5.40	1.45-3.44	1.43-5.31	1.46-3.38
n-Butyrylglycine	0.25-0.73	0.25-0.59	0.26-0.72	0.25-0.59	0.26-0.70	0.25-0.59
2-Methylsuccinic acid	0.69-2.21	0.66-1.61	0.70-2.20	0.66-1.59	0.72-2.18	0.67-1.57
2-Methylbutyrylglycine	0.16-0.84	0.11-0.59	0.16-0.84	0.11-0.59	0.16-0.83	0.11-0.58
Isovalerylglycine	0.50-3.31	0.50-3.31	0.50-3.26	0.50-3.26	0.51-3.21	0.51-3.21
Glutaric acid	0.38-1.41	0.41-0.94	0.38-1.38	0.41-0.92	0.39-1.34	0.41-0.91
3-Methylcrotonylglycine	0.32-0.73	0.32-0.73	0.32-0.72	0.32-0.72	0.32-0.71	0.32-0.71
n-Tiglylglycine	1.05-1.99	1.05-1.99	1.07-1.99	1.07-1.99	1.09-1.99	1.09-1.99
3-Methylglutamic acid	2.36-5.50	2.36-5.50	2.37-5.49	2.37-5.49	2.38-5.46	2.38-5.46
n-Hexanoylglycine	0.35-1.07	0.35-0.80	0.36-1.07	0.36-0.79	0.36-1.06	0.36-0.79
n-Octanoylglycine	0.20-1.04	0.20-1.04	0.21-1.04	0.21-1.04	0.21-1.04	0.21-1.04
3-Phenylpropionylglycine	0.12-0.85	0.15-0.67	0.13-0.85	0.15-0.66	0.14-0.84	0.15-0.65
trans-Cinnamoylglycine	0.46-3.71	0.58-1.71	0.48-3.66	0.59-1.70	0.49-3.61	0.60-1.69
Suberylglycine	0.36-1.78	0.36-1.78	0.37-1.78	0.37-1.78	0.37-1.77	0.37-1.77
Dodecanedioic acid	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	51 Years		52 Years		53 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.20-0.52	0.20-0.52	0.21-0.51	0.21-0.51	0.23-0.51	0.23-0.51
n-Propionylglycine	0.19-0.41	0.19-0.41	0.19-0.41	0.19-0.41	0.19-0.41	0.19-0.41
Isobutyrylglycine	0.37-1.34	0.23-1.16	0.38-1.32	0.23-1.15	0.38-1.29	0.23-1.14



Ethylmalonic acid	1.44-5.23	1.47-3.33	1.45-5.16	1.47-3.28	1.46-5.11	1.48-3.24
n-Butyrylglycine	0.27-0.69	0.25-0.58	0.28-0.68	0.25-0.58	0.28-0.67	0.25-0.58
2-Methylsuccinic acid	0.74-2.16	0.67-1.54	0.76-2.14	0.67-1.53	0.78-2.13	0.67-1.51
2-Methylbutyrylglycine	0.16-0.83	0.11-0.58	0.16-0.82	0.11-0.58	0.16-0.80	0.11-0.58
Isovalerylglycine	0.52-3.17	0.52-3.17	0.53-3.12	0.53-3.12	0.54-3.08	0.54-3.08
Glutaric acid	0.39-1.30	0.41-0.90	0.39-1.27	0.41-0.89	0.40-1.23	0.41-0.89
3-Methylcrotonylglycine	0.32-0.70	0.32-0.70	0.32-0.68	0.32-0.68	0.32-0.67	0.32-0.67
n-Tiglylglycine	1.11-1.99	1.11-1.99	1.12-1.98	1.12-1.98	1.12-1.97	1.12-1.97
3-Methylglutamic acid	2.39-5.42	2.39-5.42	2.40-5.36	2.40-5.36	2.40-5.28	2.40-5.28
n-Hexanoylglycine	0.37-1.05	0.36-0.78	0.38-1.04	0.36-0.78	0.38-1.03	0.36-0.77
n-Octanoylglycine	0.22-1.03	0.22-1.03	0.22-1.02	0.22-1.02	0.22-1.02	0.22-1.02
3-Phenylpropionylglycine	0.14-0.84	0.15-0.64	0.15-0.83	0.15-0.63	0.15-0.82	0.16-0.63
trans-Cinnamoylglycine	0.51-3.57	0.61-1.67	0.53-3.54	0.62-1.66	0.55-3.51	0.62-1.64
Suberylglycine	0.38-1.76	0.38-1.76	0.38-1.75	0.38-1.75	0.39-1.74	0.39-1.74
Dodecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	54 Years		55 Years		56 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.24-0.50	0.24-0.50	0.24-0.49	0.24-0.49	0.25-0.47	0.25-0.47
n-Propionylglycine	0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.40	0.21-0.40	0.21-0.40
Isobutyrylglycine	0.38-1.26	0.23-1.13	0.38-1.22	0.23-1.12	0.37-1.19	0.23-1.11
Ethylmalonic acid	1.48-5.07	1.49-3.21	1.50-5.03	1.50-3.19	1.53-5.00	1.51-3.17



n-Butyrylglycine	0.29-0.66	0.25-0.57	0.29-0.65	0.26-0.57	0.30-0.64	0.26-0.57
2-Methylsuccinic acid	0.81-2.11	0.67-1.50	0.83-2.10	0.67-1.49	0.86-2.09	0.67-1.48
2-Methylbutyrylglycine	0.16-0.79	0.11-0.58	0.16-0.78	0.11-0.58	0.16-0.76	0.11-0.58
Isovalerylglycine	0.55-3.03	0.55-3.03	0.56-2.99	0.56-2.99	0.57-2.94	0.57-2.94
Glutaric acid	0.40-1.20	0.40-0.88	0.41-1.17	0.40-0.87	0.41-1.15	0.39-0.87
3-Methylcrotonylglycine	0.31-0.65	0.31-0.65	0.31-0.63	0.31-0.63	0.31-0.60	0.31-0.60
n-Tiglylglycine	1.12-1.94	1.12-1.94	1.12-1.92	1.12-1.92	1.11-1.88	1.11-1.88
3-Methylglutamic acid	2.41-5.17	2.41-5.17	2.42-5.05	2.42-5.05	2.45-4.91	2.45-4.91
n-Hexanoylglycine	0.38-1.02	0.36-0.77	0.39-1.02	0.35-0.76	0.39-1.01	0.35-0.76
n-Octanoylglycine	0.23-1.01	0.23-1.01	0.23-1.00	0.23-1.00	0.23-0.98	0.23-0.98
3-Phenylpropionylglycine	0.16-0.82	0.16-0.62	0.16-0.81	0.17-0.62	0.17-0.80	0.17-0.62
trans-Cinnamoylglycine	0.57-3.49	0.62-1.63	0.59-3.47	0.62-1.61	0.62-3.45	0.62-1.59
Suberylglycine	0.39-1.73	0.39-1.73	0.40-1.72	0.40-1.72	0.41-1.71	0.41-1.71
Dodecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	57 Years		58 Years		59 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.26-0.46	0.26-0.46	0.26-0.45	0.26-0.45	0.27-0.44	0.27-0.44
n-Propionylglycine	0.22-0.40	0.22-0.40	0.22-0.40	0.22-0.40	0.23-0.40	0.23-0.40
Isobutyrylglycine	0.37-1.15	0.24-1.10	0.37-1.11	0.24-1.08	0.38-1.07	0.24-1.06
Ethylmalonic acid	1.56-4.96	1.53-3.14	1.59-4.91	1.54-3.12	1.62-4.86	1.56-3.09
n-Butyrylglycine	0.30-0.64	0.27-0.56	0.30-0.63	0.27-0.56	0.31-0.63	0.28-0.56



2-Methylsuccinic acid	0.89-2.08	0.67-1.48	0.92-2.07	0.67-1.48	0.95-2.06	0.66-1.48
2-Methylbutyrylglycine	0.16-0.74	0.11-0.57	0.16-0.73	0.12-0.56	0.16-0.71	0.12-0.55
Isovalerylglycine	0.59-2.90	0.59-2.90	0.60-2.85	0.60-2.85	0.61-2.79	0.61-2.79
Glutaric acid	0.42-1.14	0.38-0.86	0.43-1.13	0.38-0.85	0.44-1.12	0.38-0.84
3-Methylcrotonylglycine	0.30-0.58	0.30-0.58	0.30-0.56	0.30-0.56	0.30-0.54	0.30-0.54
n-Tiglylglycine	1.10-1.85	1.10-1.85	1.09-1.81	1.09-1.81	1.08-1.77	1.08-1.77
3-Methylglutamic acid	2.48-4.76	2.48-4.76	2.53-4.60	2.53-4.60	2.59-4.44	2.59-4.44
n-Hexanoylglycine	0.39-1.00	0.35-0.76	0.39-0.99	0.36-0.75	0.39-0.99	0.36-0.75
n-Octanoylglycine	0.23-0.97	0.23-0.97	0.23-0.96	0.23-0.96	0.23-0.94	0.23-0.94
3-Phenylpropionylglycine	0.17-0.79	0.17-0.62	0.17-0.78	0.18-0.61	0.18-0.77	0.18-0.61
trans-Cinnamoylglycine	0.64-3.42	0.61-1.57	0.67-3.37	0.60-1.55	0.69-3.31	0.59-1.53
Suberylglycine	0.41-1.70	0.41-1.70	0.42-1.69	0.42-1.69	0.42-1.67	0.42-1.67
Dodecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	60 Years		61 Years		62 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.28-0.43	0.28-0.43	0.28-0.42	0.28-0.42	0.29-0.42	0.29-0.42
n-Propionylglycine	0.24-0.40	0.24-0.40	0.25-0.39	0.25-0.39	0.26-0.39	0.26-0.39
Isobutyrylglycine	0.38-1.03	0.24-1.05	0.39-1.00	0.24-1.03	0.41-0.98	0.25-1.01
Ethylmalonic acid	1.66-4.79	1.58-3.06	1.70-4.72	1.60-3.03	1.74-4.65	1.62-2.99
n-Butyrylglycine	0.31-0.63	0.28-0.56	0.32-0.62	0.28-0.56	0.32-0.62	0.29-0.56
2-Methylsuccinic acid	0.98-2.05	0.66-1.47	1.00-2.04	0.66-1.47	1.02-2.03	0.66-1.46



2-Methylbutyrylglycine	0.17-0.70	0.12-0.53	0.17-0.69	0.12-0.52	0.17-0.68	0.12-0.50
Isovalerylglycine	0.62-2.73	0.62-2.73	0.62-2.66	0.62-2.66	0.62-2.59	0.62-2.59
Glutaric acid	0.45-1.11	0.37-0.82	0.46-1.10	0.37-0.81	0.47-1.09	0.37-0.79
3-Methylcrotonylglycine	0.29-0.52	0.29-0.52	0.29-0.51	0.29-0.51	0.29-0.50	0.29-0.50
n-Tiglylglycine	1.07-1.74	1.07-1.74	1.06-1.71	1.06-1.71	1.06-1.70	1.06-1.70
3-Methylglutamic acid	2.67-4.30	2.67-4.30	2.75-4.16	2.75-4.16	2.83-4.04	2.83-4.04
n-Hexanoylglycine	0.39-0.98	0.36-0.74	0.40-0.97	0.37-0.74	0.40-0.96	0.37-0.73
n-Octanoylglycine	0.23-0.92	0.23-0.92	0.23-0.90	0.23-0.90	0.23-0.89	0.23-0.89
3-Phenylpropionylglycine	0.18-0.76	0.18-0.61	0.18-0.74	0.18-0.60	0.19-0.73	0.18-0.59
trans-Cinnamoylglycine	0.71-3.22	0.58-1.51	0.72-3.12	0.57-1.49	0.73-3.00	0.55-1.48
Suberylglycine	0.43-1.66	0.43-1.66	0.43-1.64	0.43-1.64	0.43-1.62	0.43-1.62
Dodecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
	63 Years		64 Years		65 Years	
	Female	Male	Female	Male	Female	Male
n-Acetylglycine	0.29-0.41	0.29-0.41	0.29-0.41	0.29-0.41	0.30-0.41	0.30-0.41
n-Propionylglycine	0.27-0.39	0.27-0.39	0.28-0.39	0.28-0.39	0.28-0.38	0.28-0.38
Isobutyrylglycine	0.42-0.95	0.24-1.00	0.44-0.94	0.24-0.98	0.46-0.93	0.24-0.98
Ethylmalonic acid	1.77-4.57	1.64-2.95	1.80-4.51	1.65-2.92	1.83-4.45	1.66-2.89
n-Butyrylglycine	0.33-0.62	0.28-0.56	0.33-0.62	0.28-0.56	0.33-0.62	0.28-0.56
2-Methylsuccinic acid	1.04-2.03	0.66-1.46	1.05-2.02	0.66-1.45	1.07-2.02	0.66-1.44
2-Methylbutyrylglycine	0.18-0.67	0.13-0.49	0.18-0.66	0.13-0.47	0.19-0.65	0.13-0.46



Isovalerylglycine	0.62-2.52	0.62-2.52	0.62-2.44	0.62-2.44	0.62-2.37	0.62-2.37
Glutaric acid	0.48-1.08	0.37-0.77	0.49-1.07	0.37-0.75	0.49-1.06	0.37-0.74
3-Methylcrotonylglycine	0.29-0.49	0.29-0.49	0.30-0.48	0.30-0.48	0.30-0.48	0.30-0.48
n-Tiglylglycine	1.06-1.68	1.06-1.68	1.06-1.67	1.06-1.67	1.06-1.67	1.06-1.67
3-Methylglutaconic acid	2.91-3.94	2.91-3.94	2.99-3.86	2.99-3.86	3.05-3.80	3.05-3.80
n-Hexanoylglycine	0.41-0.95	0.38-0.73	0.42-0.95	0.38-0.72	0.43-0.94	0.38-0.72
n-Octanoylglycine	0.22-0.87	0.22-0.87	0.22-0.85	0.22-0.85	0.22-0.84	0.22-0.84
3-Phenylpropionylglycine	0.19-0.71	0.17-0.58	0.20-0.70	0.17-0.58	0.21-0.69	0.16-0.57
trans-Cinnamoylglycine	0.74-2.88	0.53-1.46	0.75-2.76	0.52-1.45	0.75-2.64	0.50-1.44
Suberylglycine	0.43-1.59	0.43-1.59	0.43-1.57	0.43-1.57	0.42-1.55	0.42-1.55
Dodecanedioic acid	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01	0.01-0.01
> or = 66 Years						
	Female			Male		
n-Acetylglycine	0.30-0.41			0.30-0.41		
n-Propionylglycine	0.29-0.38			0.29-0.38		
Isobutyrylglycine	0.46-0.92			0.24-0.97		
Ethylmalonic acid	1.84-4.42			1.67-2.86		
n-Butyrylglycine	0.33-0.62			0.27-0.56		
2-Methylsuccinic acid	1.07-2.02			0.66-1.43		
2-Methylbutyrylglycine	0.19-0.65			0.13-0.45		
Isovalerylglycine	0.61-2.31			0.61-2.31		
Glutaric acid	0.49-1.06			0.38-0.73		
3-Methylcrotonylglycine	0.30-0.48			0.30-0.48		
n-Tiglylglycine	1.07-1.67			1.07-1.67		
3-Methylglutaconic acid	3.11-3.75			3.11-3.75		
n-Hexanoylglycine	0.43-0.94			0.38-0.71		
n-Octanoylglycine	0.21-0.82			0.21-0.82		
3-Phenylpropionylglycine	0.21-0.69			0.16-0.56		

trans-Cinnamoylglycine	0.75-2.58	0.50-1.43
Suberylglycine	0.42-1.52	0.42-1.52
Dodecanedioic acid	0.01-0.03	0.01-0.03
Tetradecanedioic acid	0.01-0.02	0.01-0.02
Hexadecanedioic acid	0.01-0.01	0.01-0.01

Interpretation

When abnormal results are detected, a detailed interpretation is given including an overview of the results and of their significance; a correlation to available clinical information; elements of differential diagnosis; recommendations for additional biochemical testing and in vitro confirmatory studies (enzyme assay, molecular analysis); name and phone number of key contacts who may provide these studies at Mayo Clinic or elsewhere; and a phone number to reach one of the laboratory directors in case the referring physician has additional questions.

Cautions

No significant cautionary statements

Clinical Reference

1. Rinaldo P, Hahn SH, Matern D: Inborn errors of amino acid, organic acid, and fatty acid metabolism. In: Burtis CA, Ashwood ER, Bruns DE eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 4th ed. WB Saunders Company; 2005:2207-2247
2. Roe CR, Ding J. Mitochondrial fatty acid oxidation disorders. In: Valle D, Antonarakis S, Ballabio A, Beaudet A, Mitchell GA. eds. The Online Metabolic and Molecular Bases of Inherited Disease. McGraw-Hill; 2019. Accessed March 30, 2020. <http://ommbid.mhmedical.com/content.aspx?bookid=2709§ionid=225087274>
3. Kolker S, Cazorla AG, Valayannopoulos, et al: The phenotypic spectrum of organic acidurias and urea cycle disorders. Part 1: the initial presentation. J Inherit Metab Dis. 2015;38:1041-1057. doi: 10.1007/s10545-015-9839-3
4. Tuncel AT, Boy N, Morath MA, Horster F, Mutze U, Kolker S: Organic acidurias in adults: late complications and management. J Inherit Metab Dis. 2018;41:765-776. doi: 10.1007/s10545-017-0135-2

Performance

Method Description

Urine volumes equivalent to 0.25 to 0.50 mg of creatinine are spiked with the mixture of labeled internal standards, allowed to equilibrate, acidified, and then extracted with ethyl acetate. After evaporation, the dry residue is derivatized to butyl esters. Specimens are analyzed by capillary gas chromatography/mass spectrometry selected ion monitoring using ammonia chemical ionization and a stable isotope dilution method.(Unpublished Mayo Method)

PDF Report

No

Specimen Retention Time

3 months

Performing Laboratory Location

Rochester

Fees and Codes

Fees

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact [Customer Service](#).

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information

82542

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
AGU20	Acylglycines, QN, U	50334-2

Result ID	Test Result Name	Result LOINC Value
608931	Interpretation	53718-3
608910	n-Acetylglycine	In Process
608911	n-Propionylglycine	13800-8
608912	Isobutyrylglycine	38360-4
608913	Ethylmalonic acid	13741-4
608914	n-Butyrylglycine	27892-9
608915	2-Methylsuccinic acid	13777-8
608916	2-Methylbutyrylglycine	27097-5
608917	Isovalerylglycine	13766-1
608918	Glutaric acid	13748-9
608919	3-Methylcrotonylglycine	13691-1
608920	n-Tiglylglycine	13816-4
608921	3-Methylglutaconic acid	13692-9
608922	n-Hexanoylglycine	13753-9
608923	n-Octanoylglycine	38367-9
608924	3-Phenylpropionylglycine	13793-5
608925	trans-Cinnamoylglycine	38417-2
608926	Suberylglycine	13811-5
608927	Dodecanedioic acid	13732-3
608928	Tetradecanedioic acid	50333-4
608929	Hexadecanedioic acid	50332-6



Result ID	Test Result Name	Result LOINC Value
608930	Reviewed By	18771-6