

Provider:
Patient:
Accession #:

Sex:
Age:
Sample Type:

Collected:
Received:
Completed:

Analyte	Result ($\mu\text{g}/\text{mg}$ creatinine)	Reference Range	Population Percentile	
Glycolysis				
1. Pyruvate	1.08	< 1.90	66%	
2. Lactate	17.41	< 23.35	83%	
Citric Acid Cycle				
3. Citrate	581.24	71.30 - 772.63	86%	
4. Cis-Aconitate (H)	53.01	< 40.54	91%	
5. Isocitrate (H)	102.83	19.94 - 74.88	97%	
6. Alpha-Ketoglutarate (H)	36.08	< 18.94	93%	
7. Succinate (H)	62.58	< 20.99	99%	
8. Fumarate (H)	>ULOQ	< 1.13	N/A	
9. Malate (H)	20.72	< 2.62	97%	
Fatty Acid Oxidation				
10. Adipate (H)	14.65	< 4.42	96%	
11. Suberate (H)	2.71	< 2.64	90%	
12. Ethylmalonate	3.15	< 3.88	83%	
13. Methylsuccinate	1.82	< 2.20	82%	
Markers for Protein Metabolism				
14. Alpha-Ketoisovalerate	0.35	< 0.49	76%	
15. Alpha-Ketoisocaproate	0.99	< 1.09	88%	
16. Alpha-Keto-Beta-Methylvalerate (H)	2.91	< 1.29	92%	
17. Beta-Hydroxyisovalerate (H)	9.85	< 8.86	90%	
18. Methylmalonate	0.70	< 1.64	24%	
19. Hydroxymethylglutarate	4.04	< 7.20	38%	

Reference range updated 5/21/2021. Reference range is not gender adjusted. Reference range is age adjusted for children. Method: LC/MS/MS. LLOQ: Lower limit of quantitation ULOQ: Upper limit of quantitation. Lactate is reported as D- and L-Lactate combined on OAP. This test is not intended to diagnose, treat, cure, or prevent any disease or replace the medical advice and/or treatment obtained from a qualified healthcare practitioner. US BioTek Laboratories has developed and determined the performance characteristic of this test under the Clinical Laboratory Improvement Amendments (CLIA). This test has not been evaluated by the U.S. Food and Drug Administration. This test does not assess for neonatal inborn errors of metabolism and is based on stable renal function and normal renal clearance.

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Ketone Metabolites				
20. Alpha-Hydroxybutyrate (H)	4.52	< 1.24	91%	 4.52
21. Beta-Hydroxybutyrate (H)	>ULOQ	< 8.09	N/A	 N/A
Markers of Neurotransmitter Metabolism				
22. Vanilmandelate (H)	4.16	< 3.64	90%	 4.16
23. Homovanillate	3.19	< 6.66	48%	 3.19
24. 5-Hydroxyindoleacetate	2.27	1.17 - 8.06	37%	 2.27
25. Quinolinate	2.74	< 5.37	34%	 2.74
26. Kynurenate	1.25	< 2.49	33%	 1.25
Markers of Detoxification				
27. Para-Hydroxyphenyllactate (H)	1.80	< 1.55	90%	 1.80
28. Orotate	0.42	< 1.04	24%	 0.42
29. Pyroglutamate	34.05	14.58 - 37.47	91%	 34.05
30. Benzoate	<LLOQ	< 6.87	N/A	 N/A
31. Hippurate	28.66	17.13 - 768.53	10%	 28.66
Markers of Bacterial Metabolism				
32. Para-Hydroxybenzoate	0.53	< 1.43	60%	 0.53
33. Para-Hydroxyphenylacetate	15.96	< 26.39	69%	 15.96
34. 2-Hydroxyphenylacetate (H)	1.95	< 1.24	93%	 1.95
35. 3-Indoleacetate	1.71	0.46 - 9.21	45%	 1.71
36. Tricarballylate	<LLOQ	< 1.06	N/A	 N/A

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