

16020 Linden Ave North Shoreline, WA 98133 USA Fax: (206) 363-8790 www.usbiotek.com Director: Stephen Markus, MD Tel: (206) 365-1256

Sex: Collected: Physician: Patient: Age: 73 Received: Accession: Sample Type: Dried Urine Completed:

Reference Analyte Result Range Reference Range Percentile $(\mu g/mg creatinine)$ 30 40 50 60 70 80 90 20 99 **Glycolysis Metabolites** 0.50 1 Pyruvate < 2.10 2 4.70 < 23.10 Lactate **Citric Acid Cycle Metabolites** 3 284.96 34.30 - 751.30 Citrate 4 Cis-Aconitate 157.97 < 65.00 (H) 5 28.00 - 70.00 Isocitrate 43.25 6 Alpha-Ketoglutarate 3.24 < 26.00 7 Succinate 6.78 < 22.50 8 **Fumarate** 0.53 < 1.90 9 Malate 1.24 < 4.00 **Fatty Acid Oxidation** 10 Adipate 3.20 < 4.40Suberate 2.63 < 2.80 11 12 Ethylmalonate 1.98 < 5.50 13 Methylsuccinate 1.96 < 3.10 **Ketone Metabolites** 14 Beta-Hydroxybutyrate < 7.20 4.14 Markers for Cofactor Need 0.23 15 Alpha-Ketoisovalerate < 0.40 < 0.50 16 0.35 Alpha-Ketoisocaproate 17 Alpha-Keto-Beta-Methylvalerate 0.44 < 2.10 18 Beta-Hydroxyisovalerate 3.20 < 11.20 19 Methylmalonate 0.95 < 1.60 20 < 3.00 Kynurenate 1.17 21 Hydroxymethylglutarate 3.93 < 5.90**Markers of Neurotransmitter Metabolism** 22 Vanilmandelate 2.57 < 4.7023 Homovanillate 12.25 < 6.80(H) 24 5-Hydroxyindoleacetate 2.52 1.30 - 13.50 25 Quinolinate 3.39 < 7.20 MEDIAN

Reference range updated 6/17/2019. Reference range is not gender adjusted. Reference range is age adjusted for children. Method: LC/MS/MS

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, Inc. 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 and is considered for investigational and research purposes only. This test does not assess for neonatal inborn errors of metabolism and is based on stable renal function and normal renal clearance.

Organic Acids Profile

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			Reference	•					•					
	Analyte	Result Range			Reference Range Percentile									
	Markers of Deto	(μ g/mg ci	reatinine)	0	10	20	30	40 5	0 60	70	80	90	99	
26	Para-Hydroxyphenyllactate	0.64	< 2.60											
27	Orotate	0.57	< 1.10						7					
28	Alpha-Hydroxybutyrate	0.95	< 1.50								\supset			
29	Pyroglutamate	28.32	11.00 - 43.00											
30	Benzoate	0.86	< 7.00											
31	Hippurate	276.11	8.00 - 672.00]			
Markers of Bacterial Metabolism														
32	Para-Hydroxybenzoate	1.17	< 1.40				\					7		
33	Para-Hydroxyphenylacetate	>95.24	< 20.00 (H)	ì		$/\langle$								
34	2-Hydroxyphenylacetate	10.01	< 1.40 (H)		7	~								
35	3-Indoleacetate	1.47	0.60 - 10.50		$\overline{}$									
36	Tricarballylate	2.58	< 1.50 (H)	/=)	7								
00	moarbanylato	2.00	(11)											
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The analytes on the panel are subject to change without prior notice. Lactate is reported as D- and L-Lactate combined on UMP. CLIA: 50D0965661 COLA accredited