

Ordering Physician:

Institute of Alternative Medicine  
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301 North 200 East  
Suite 1 - C  
St. George, UT 84770

Accession Number:

Reference Number:

Patient:

Age: 57 Sex: Male

Date of Birth:

Date Collected: 10/26/11

Date Received: 10/27/11

Report Date: 11/3/11

Telephone:

Fax:

Reprinted:

Comment:

**Organic Acid Comprehensive Profile**

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

**Summary of abnormal results:**

	<u>Findings</u>	<u>Intervention Options</u>	<u>Common Metabolic Association</u>
<b><u>Fatty Acid Metabolism</u></b>			
Adipate	High	Carnitine, B2	Fatty acid oxidation
Suberate	High	Carnitine, B2	Fatty acid oxidation
<b><u>Carbohydrate Metabolism</u></b>			
β-Hydroxybutyrate	Very High	Cr, V, Lipoic Acid, Mg, Mn	Ketosis
<b><u>Energy Production Markers</u></b>			
No Abnormality Found			
<b><u>B-Complex Vitamin Markers</u></b>			
α-Ketoisovalerate	High	Lipoic Acid, B1, B2, B3, B5	Impaired Valine metabolism
<b><u>Methylation Cofactor Markers</u></b>			
No Abnormality Found			
<b><u>Neurotransmitter Metabolism Markers</u></b>			
Homovanillate	Low	Tyrosine	Dopamine turnover inhibition
<b><u>Oxidative Damage and Antioxidant Markers</u></b>			
p-Hydroxyphenyllactate	Very High	Vitamin C, Vitamin E	Pro-oxidant and carcinogen
<b><u>Detoxification Indicators</u></b>			
No Abnormality Found			
<b><u>Bacterial - General</u></b>			
No Abnormality Found			
<b><u>L. acidophilus / general bacteria</u></b>			
No Abnormality Found			
<b><u>Clostridial Species</u></b>			
No Abnormality Found			
<b><u>Yeast/Fungal</u></b>			
D-Arabinitol	High	Antifungals	Yeast Overgrowth

Ordered By:  
 Brian Hardy  
 DC, LAc, CCN, DACBN

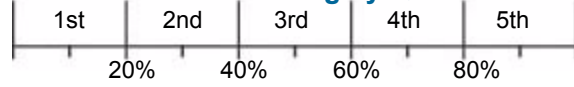
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## Organic Acid Comprehensive Profile

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

This report is not intended for the diagnosis of neonatal inborn errors of metabolism.

### Percentile Ranking by Quintile



95%  
Reference  
Interval

Ranges are for ages 13 and over

### NUTRIENT MARKERS

#### Fatty Acid Metabolism (Carnitine & B2)

Results  
ug/mg creatinine

Item	Result	Percentile	Reference Interval
1 Adipate	6.3 <b>H</b>	5.2	<= 8.3
2 Suberate	2.7 <b>H</b>	1.7	<= 3.2
3 Ethylmalonate	1.8	3.6	<= 6.3

#### Carbohydrate Metabolism (B1, B3, Cr, Lipoic Acid, CoQ10)

Item	Result	Percentile	Reference Interval
4 Pyruvate	<DL*	3.9	<= 6.4
5 L-Lactate	3	14	3 - 46
6 β-Hydroxybutyrate	27.4 <b>H</b>	2.1	<= 9.9

#### Energy Production (Citric Acid Cycle) (B comp., CoQ10, Amino acids, Mg)

Item	Result	Percentile	Reference Interval
7 Citrate	164	601	56 - 987
8 Cis-Aconitate	33	51	18 - 78
9 Isocitrate	64	98	39 - 143
10 α-Ketoglutarate	5.3	19.0	<= 35.0
11 Succinate	3.6	11.6	<= 20.9
12 Fumarate	0.40	0.59	<= 1.35
13 Malate	0.5	1.4	<= 3.1
14 Hydroxymethylglutarate	2.1	3.6	<= 5.1

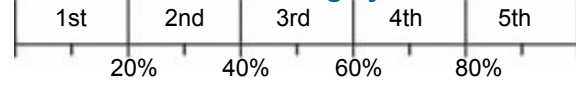
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#### B-Complex Vitamin Markers (B1, B2, B3, B5, B6, Biotin)

Results  
ug/mg creatinine

Marker	Result	Percentile	Reference Interval
15 a-Ketoisovalerate	0.27 <b>H</b>	0.25	<= 0.49
16 a-Ketoisocaproate	0.25	0.34	<= 0.52
17 a-Keto-β-Methylvalerate	0.31	0.38	<= 1.10
18 Xanthurenate	0.28	0.47	<= 0.74
19 β-Hydroxyisovalerate	4.1	7.6	<= 11.5

#### Methylation Cofactor Markers (B12, Folate)

20 Methylmalonate	0.7	1.7	<= 2.3
21 Formiminoglutamate	0.6	1.2	<= 2.2

### CELL REGULATION MARKERS

#### Neurotransmitter Metabolism Markers (Tyrosine, Tryptophan, B6, antioxidants)

22 Vanilmandelate	2.0	1.8 - 3.9	1.3 - 4.9
23 Homovanillate	2.0 <b>L</b>	2.1 - 6.3	1.6 - 10.9
24 5-Hydroxyindoleacetate	2.1	2.1 - 5.6	1.6 - 9.8
25 Kynurenate	1.4	1.9	<= 2.7
26 Quinolinate	1.5	4.0	<= 5.8
27 Picolinate	3.2	8.0	2.8 - 13.5

#### Oxidative Damage and Antioxidant Markers (Vitamin C and other antioxidants)

28 p-Hydroxyphenyllactate	2.33 <b>H</b>	0.79	<= 1.45
29 8-Hydroxy-2-deoxyguanosine	** 5.1	5.3	<= 7.6

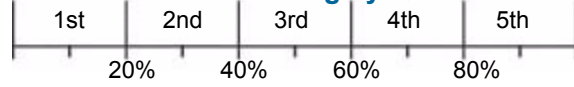
\*\* Units for 8-Hydroxy-2-deoxyguanosine are ng/mg creatinine

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**TOXICANTS AND DETOXIFICATION**

**Detoxification Indicators**  
 (Arg, NAC, Met, Mg, antioxidants)

Results  
 ug/mg creatinine

Code	Substance	Result	Percentile	Reference Interval
30	2-Methylhippurate	0.013	~10th	<= 0.192
31	Orotate	0.50	~50th	<= 1.01
32	Glucarate	1.2	~10th	<= 10.7
33	a-Hydroxybutyrate	<DL*	< 20th	<= 0.9
34	Pyroglutamate	31	~10th	28 - 88
35	Sulfate	1,138	~20th	690 - 2,988

**COMPOUNDS OF BACTERIAL OR YEAST/FUNGAL ORIGIN**

**Bacterial - general**

Code	Substance	Result	Percentile	Reference Interval
36	Benzoate	0.3	~10th	<= 9.3
37	Hippurate	76	~10th	<= 1,150
38	Phenylacetate	0.04	~80th	<= 0.15
39	Phenylpropionate	<DL*	< 20th	<= 0.4
40	p-Hydroxybenzoate	0.30	~20th	<= 2.08
41	p-Hydroxyphenylacetate	7	~10th	<= 34
42	Indican	7	~20th	<= 74
43	Tricarballic acid	0.48	~50th	<= 1.41

**L. acidophilus / general bacterial**

44	D-Lactate	0.2	~20th	<= 7.0
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**Clostridial species**

45	3,4-Dihydroxyphenylpropionate	<DL*	< 20th	<= 0.12
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**Yeast / Fungal**

46	D-Arabinitol	45 <b>H</b>	~80th	<= 73
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Creatinine = 196 mg/dL

\* <DL = less than detection limit