GENOVA DIAGNOSTICS
3425 Corporate Way
Duluth, GA 30096

Organix Urine Organic Acids

Patient: **SAMPLE PATIENT**
DOB:
Sex:
MRN:

3304 Organix ® Basic Profile - Urine
Methodology: LC/Tandem Mass Spectrometry, Colorimetric

Summary of Abnormal Findings

Biomarkers	Findings	Metabolic Pathway
Fatty Acid Metabolism	No Abnormality Found	
Carbohydrate Metabolism		
Pyruvate	H	Glycolysis
L-Lactate	H	Glycolysis
b-Hydroxybutyrate	**Borderline High**	Ketone production
Energy Production Markers	No Abnormality Found	
B-Complex Vitamin Markers		
a-Keto-b-Methylvalerate	**Borderline High**	Amino acid metabolism
b-Hydroxyisovalerate	**Borderline High**	Amino acid metabolism
Methylation Cofactor Markers		
Methylmalonate	**Borderline High**	Amino acid metabolism
Formiminoglutamate	**Borderline High**	Amino acid metabolism
Neurotransmitter Metabolism Markers		
Vanilmandelate	**Borderline High**	Epinephrine & norepinephrine metabolism
Homovanillate	**Borderline High**	Dopamine metabolism
5-Hydroxyindoleacetate	**Borderline High**	Serotonin metabolism
Kynurenate	**Borderline High**	Tryptophan pathway
Detoxification Indicators		
Orotate	**Borderline High**	Urea cycle

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

Ranges: Ages 13 and over

	Results mcg/mg creatinine		QUINTILE DISTRIBUTION (1st / 2nd / 3rd / 4th / 5th)	95% Reference Range
Nutrient Markers				
Fatty Acid Metabolism *(Carnitine & B2)*				
1. Adipate	4.2		6.2	<= 11.1
2. Suberate	1.5		2.1	<= 4.6
3. Ethylmalonate	3.2		3.6	<= 6.3
Carbohydrate Metabolism *(B1, B3, Cr, Lipoic Acid, CoQ10)*				
4. Pyruvate	7.2	H	3.9	<= 6.4
5. L-Lactate	16.6	H	8.5	0.6 - 16.4
6. β-Hydroxybutyrate	3.7		2.1	<= 9.9
Energy Production (Citric Acid Cycle) *(B Comp., CoQ10, Amino Acids, Mg)*				
7. Citrate	263		601	56 - 987
8. Cis-Aconitate	36		51	18 - 78
9. Isocitrate	82		98	39 - 143
10. α-Ketoglutarate	4.0		19.0	<= 35.0
11. Succinate	4.3		11.6	<= 20.9
12. Fumarate	0.47		0.59	<= 1.35
13. Malate	0.9		1.4	<= 3.1
14. Hydroxymethylglutarate	3.4		3.6	<= 5.1

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Nutrient Markers			
B-Complex Vitamin Markers *(B1, B2, B3, B5, B6, Biotin)*			
15. α-Ketoisovalerate	<DL	0.25	<= 0.49
16. α-Ketoisocaproate	0.17	0.34	<= 0.52
17. α-Keto-β-Methylvalerate	0.63	0.38	<= 1.10
18. Xanthurenate	0.06	0.34	<= 0.46
19. β-Hydroxyisovalerate	7.7	7.6	<= 11.5
Methylation Cofactor Markers *(B12, Folate)*			
20. Methylmalonate	1.8	1.7	<= 2.3
21. Formiminoglutamate	1.4	1.2	<= 2.2
Cell Regulation Markers			
Neurotransmitter Metabolism Markers *(Tyrosine, Tryptophan, B6, Antioxidants)*			
22. Vanilmandelate	4.1	1.6 – 3.9	1.2 - 5.3
23. Homovanillate	5.7	1.9 – 5.7	1.4 - 7.6
24. 5-Hydroxyindoleacetate	6.0	2.1 – 5.6	1.6 - 9.8
25. Kynurenate	1.0	1.0	<= 1.5
26. Quinolinate	1.7	4.0	<= 5.8
27. Picolinate	3.8	8.0	2.8 - 13.5
Toxicants and Detoxification			
Detoxification Indicators *(Arg, NAC, Met, Mg, Antioxidants)*			
28. 2-Methylhippurate	0.028	0.084	<= 0.192
29. Orotate	0.98	0.69	<= 1.01
30. Glucarate	3.1	6.3	<= 10.7
31. α-Hydroxybutyrate	<DL	0.3	<= 0.9
32. Pyroglutamate	44	59	28 - 88

Creatinine = 123 mg/dL

<DL = less than detection limit
>UL = greater than upper linearity limit
NR = Not Reportable

This test has been developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared by the U.S. Food and Drug Administration.

3304 Organix ® Basic Profile - Urine

Additional Considerations

Nutrient supplementation is at the ***discretion of the treating clinician.*** The supplement dose ranges provided below are meant for educational purposes only. These dosage ranges relate to findings commonly found on Genova's nutritional panels and do not apply to specific disease conditions where different dosages may be warranted. Final recommendations should be based on consideration of the patient's medical history and current clinical condition.

Nutrient	Nutrient Need	Clinician Recommendations
Vitamin B-1 (Thiamin)	Low: 10-25 mg	
Vitamin B-2 (Riboflavin)	Low: 10-25 mg	
Vitamin B-3 (Niacin)	Low: 10-50 mg	
Vitamin B-5 (Pantothenic Acid)	Low: 10-25 mg	
Vitamin B-6 (Pyridoxine)	Optional: 0-10 mg	
Vitamin B-12 (Cobalamin)	Optional: 0-500 mcg	
Folic Acid	Optional: 0-1000 mcg	
Biotin	Optional: 0-400 mcg	
Magnesium	Optional: 0-100 mg	
Coenzyme Q10	Low: 20-60 mg	
Lipoic Acid	High: 200-600 mg	
L-Arginine	Optional: 0-250 mg	

Various conditionally essential nurients and other potentially beneficial interventions appear in this section only if relevant abnormalities are present.

Amino acids listed on this page result from functional markers of individual amino acid insufficiency and do not reflect amino acids measured in plasma.

Organix™ (Organic Acids) Profile

Specimen Collection Instructions

This specimen collection kit can be used for the following test(s):

0091 Organix℠ Comprehensive - Urine

0291 Organix℠ Basic - Urine

0097 Organix℠ Dysbiosis - Urine

0087 DNA/Oxidative Stress Marker (8-OHdG) - Urine

0088 Neopterin/Biopterin Profile - Urine

0391 Organix Comprehensive NY - Urine

0397 Organix Compounds of Microbial Origin NY - Urine

3291 Organix Basic NY - Urine

IMPORTANT:

All patient specimens require two unique identifiers (***patient's name and date of birth***), as well as ***date of collection***. **Patient's first and last name, date of birth, gender,** and **date of collection** must be recorded on the **Test Requisition Form** as well as all tube(s) and/or vial(s), using a permanent marker, or the test may not be processed.

Specimen

Overnight Urine, 12 ml, frozen

Collection Materials

- Clean collection container (NOT included in this kit)
- Clear-cap plastic vial with thymol preservative
- Disposable pipette

Shipping Materials

- Absorbent pad
- Ice pack
- Test Requisition Form
- Personal Health Assessment Form
- Biohazard bag with side pocket
- Specimen collection kit box
- FedEx® Clinical Lab Pak and Billable Stamp

GENOVA DIAGNOSTICS

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 IS-MM-Organix-23820 rev 0414

Please read all instructions carefully before beginning.

Patient Preparation

- It is best to **ship your specimen within 24 hours of collection**. Please refer to the enclosed shipping instructions **before** you collect to determine what days you can ship your specimen.
- **It is not necessary** to discontinue nutritional supplements prior to this specimen collection. Abnormalities that may be found will reveal special needs that have not been met by recent dietary and supplemental intake.
- **Decrease** fluid intake to avoid excessive dilution of the urine
  - » For adults, **restrict** intake to three 8 oz. glasses or less for 24 hours
  - » **Make sure that no more than 8 oz**. of this is consumed after 8:00 PM the evening prior to urine collection
- **Do not collect** urine during menstruation
- Vial contains preservative - **Do Not Rinse**

Urine Collection

1. **Write** patient's **first and last name, date of birth**, **gender** and **date of collection** on the Test Requisition Form (located in the pouch on top of the Specimen Collection Kit Box), as well as on the clear-cap plastic vial, using a permanent marker.
   - **IMPORTANT**: To ensure accurate test results you must provide the requested information.
2. **Empty** bladder before going to bed at night. **Do not collect** this urine.
3. **Collect** urine (if any) during the night and first morning urine into a clean container.
4. **Pipette** urine, using a fresh disposable pipette, into the clear-cap plastic vial to the 12 ml mark **(DO NOT OVERFILL)**. **Screw** the cap on tightly.
5. **Dispose** of remaining urine.
6. **Freeze** the clear-cap plastic vial and ice pack.

Specimen Preparation

1. **Place** the frozen urine specimen, frozen ice pack, and absorbent pad into the biohazard bag.
2. **Staple** payment to the bottom right-hand corner of the completed Test Requisition Form and complete the Personal Health Assessment Form; **Fold** and **place** them in the side pocket of the biohazard bag.
3. **Seal** the biohazard bag, **place** it into the specimen collection kit box, and **close** the box.

Checklist (Prior to Shipping)

1. Vial

- ❑ Patient's first and last name, date of birth, gender, and date of collection are written on the vial
- ❑ Vial cap is screwed on tightly

2. Frozen

- ❑ Clear-cap plastic vial (urine)
- ❑ Ice pack

3. Test Requisition Form with Payment

- ❑ Test Requisition Form is complete
- ❑ Personal Health Assessment Form is complete
- ❑ Payment is included