



Lab Interpretation, LLC
18124 Wedge Pkwy, Ste 432
Reno, NV 89511

(775) 851-3337
(775) 851-3363 Fax
www.labinterpretation.com

Sample Report

Date: 10/25/2018
(Accession #0000000000)

Next Test Due: 4/25/2019

LabAssist™ Urine Organic Acids Report

Practitioner

The information contained in this report is for the exclusive use of addressee and contains confidential, privileged and non-disclosable information. If the recipient of this report is not the addressee or the person responsible for delivering the message to the addressee, such recipient is prohibited from reading or using this message in any way and such recipient is further notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify us immediately by telephone collect and return the original report to us at the address below via the U.S. Postal Service. We will reimburse you for postage. Thank you.

Sample Report

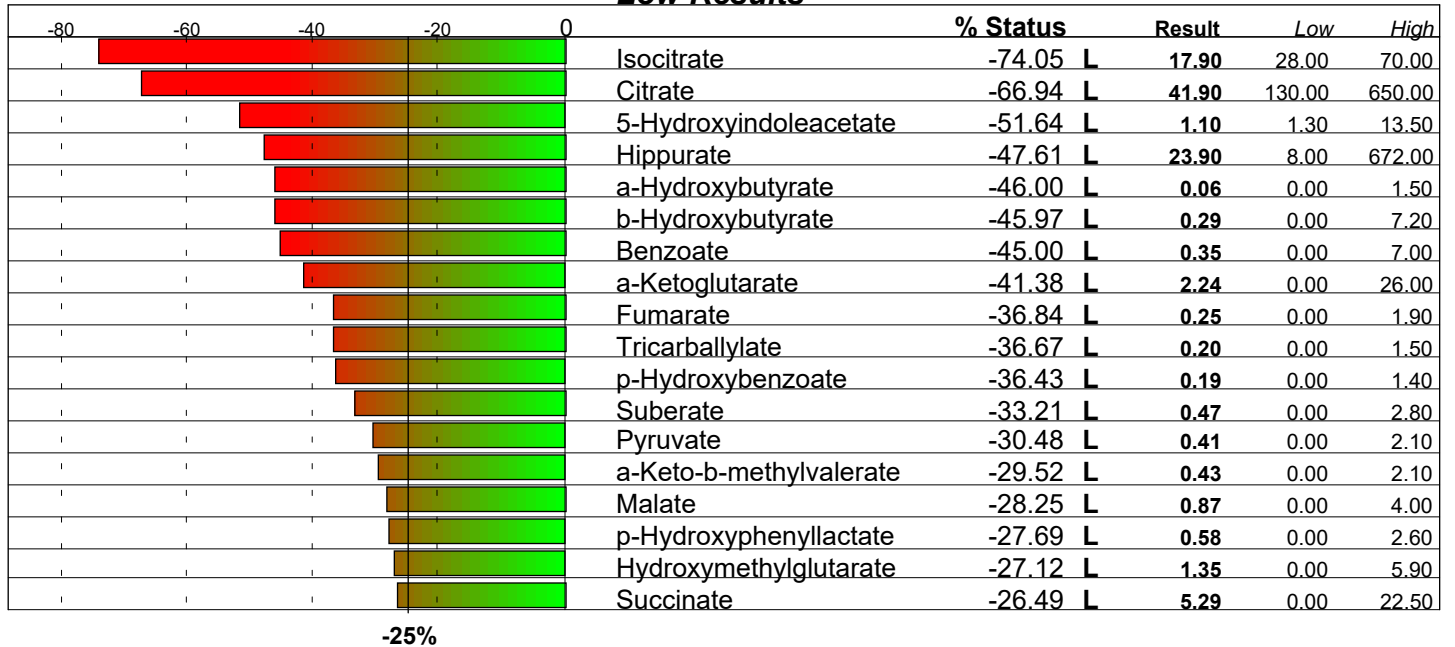
Male / Age: 48
 Client ID: (50080)

Basic Status High/Low Urine Organic Acids Date: 10/25/2018

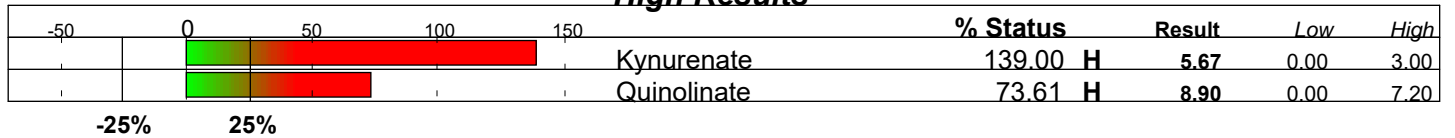
HK BioTek Ltd. (6610)

The % Status is the weighted deviation of the laboratory result.

Low Results



High Results



Basic Status Alphabetic

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

The % Status is the weighted deviation of the laboratory result relative to the range.

-100	-50	0	50	100	% Status	Result	Low	High
					2-Hydroxyphenylacetate	-16.43	0.47	1.40
					3-Indoleacetate	-23.23	3.25	10.50
					5-Hydroxyindoleacetate	-51.64 L	1.10	13.50
					Adipate	6.36	2.48	4.40
					a-Hydroxybutyrate	-46.00 L	0.06	1.50
					a-Keto-b-methylvalerate	-29.52 L	0.43	2.10
					a-Ketoglutarate	-41.38 L	2.24	26.00
					a-Ketoisocaproate	-10.00	0.20	0.50
					a-Ketoisovalerate	-2.50	0.19	0.40
					Benzoate	-45.00 L	0.35	7.00
					b-Hydroxybutyrate	-45.97 L	0.29	7.20
					b-Hydroxyisovalerate	-4.64	5.08	11.20
					cis-Aconitate	-22.92	17.60	65.00
					Citrate	-66.94 L	41.90	130.00 650.00
					Ethylmalonate	-10.55	2.17	5.50
					Fumarate	-36.84 L	0.25	1.90
					Hippurate	-47.61 L	23.90	8.00 672.00
					Homovanillate	-11.76	2.60	6.80
					Hydroxymethylglutarate	-27.12 L	1.35	5.90
					Isocitrate	-74.05 L	17.90	28.00 70.00
					Kynurenate	139.00 H	5.67	3.00
					Lactate	-6.71	10.00	23.10
					Malate	-28.25 L	0.87	4.00
					Methylmalonate	-16.88	0.53	1.60
					Methylsuccinate	-22.26	0.86	3.10
					Orotate	-8.18	0.46	1.10
					p-Hydroxybenzoate	-36.43 L	0.19	1.40
					P-Hydroxyphenylacetate	7.55	11.51	20.00
					p-Hydroxyphenyllactate	-27.69 L	0.58	2.60
					Pyroglutamate	-19.25	20.84	43.00
					Pyruvate	-30.48 L	0.41	2.10
					Quinolate	73.61 H	8.90	7.20
					Suberate	-33.21 L	0.47	2.80
					Succinate	-26.49 L	5.29	22.50
					Tricarballylate	-36.67 L	0.20	1.50
					Vanilmandelate	7.23	2.69	4.70
					Total Status Deviation	32.99		
					Total Status Skew	-19.38		

Client Summary Review

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

Nutritional Support

The following supplements may help to balance your biochemistry. Consult your practitioner.

1-Amino Acid Complex
5-10 grams daily

2-5-Hydroxytryptophan
2x daily 100 mg

Out-Of-Balance Panel Values

The following panels have a PSD of greater than 25% indicating need for further review. PSD is the Panel Status Deviation, or the average imbalance of that subset of results. The PSS is the Panel Status Skew, or the direction, negative (deficiency) or positive (excess), of that subset of results.

Panel Name	PSD	PSS
Neurotransmitters	56.65%	31.29%
Energy Production	40.50%	-40.50%
CAC Cycle Ratios	39.77%	-22.93%
Intestinal Dysbiosis	33.60%	-33.60%
Carbohydrate Metabolism	32.29%	-32.29%

Lab Reported out-of-range Values

The following results are out-of-range (as reported by the lab), and should be carefully reviewed.

Kynurenate (139.00%)

A high reading of this by-product of the breakdown of the amino acid tryptophan is consistent with a vitamin B6 deficiency, possible inflammatory processes, interferon-gamma stimulated macrophages or excessive tryptophan supplementation (not 5-HTP). Abnormally high levels can cause an increase in pain sensations and may, in multiple sclerosis patients, be a marker for an exacerbation period.

CA Cycle Return (-100.92%)

As the citric acid returns to the beginning through the conversion of Malate to Citrate through Oxalacetate, a low result may indicate an ammonia buildup due to an arginine deficiency.

Isocitrate (-74.05%)

Depressed levels of isocitrate in urine are indicative of inadequate supplies of amino acids.

Quinolate (73.61%)

A high reading of quinolate is indicative of oxidative stress that may be favorably resolved by the use of a broad spectrum of antioxidants. It is also a marker for deranged tryptophan metabolism and is an antagonist of the NMDA receptors leading to a decreased seizure threshold in epileptics. It is also found often in ongoing bacterial, fungal, viral and parasitic infections.

If the markers for phthalates are also elevated, it is important to avoid the plasticizer in your environment and undergo a detoxification program as phthalates have been implicated in increased quinolinic acid.

Citrate (-66.94%)

A low reading of this organic acid may be indicative of an amino acid deficiency or a problem with metabolism. Also, a low level is linked to a increased risk of kidney stones, both the calcium and cysteine related stones. Potassium citrate supplementation may be helpful.

CA Cycle Phase 6 (-60.09%)

The last phase of the citric acid cycle, this stage marks the conversion of Fumarate into Malate. When the ratio is low, this may signify that the body is not refilling its losses along the entire cycle. Supplementing with a broad spectrum amino acid along with niacin may help restore balance.

5-Hydroxyindoleacetate (-51.64%)

A metabolite of serotonin, this organic acid may be indicative of low tryptophan. Clinical signs include depression, fatigue, insomnia, ADD, and other behavioral disorders.

Drugs which may have an adverse affect:

Imipramine, MAO Inhibitors, Methyl dopa

Nutrition - Detail

Urine Organic Acids Date: 10/25/2018

Sample Report

Male / Age: 48

HK BioTek Ltd. (6610)

Nutritional and herbal information contained in this report is based upon research related to imbalances in your chemistry. The recommendations are based upon the information provided, without interpretation. This must be done with the help of your qualified health care professional.

1-Amino Acid Complex 5-10 grams daily

Imbalanced levels of these organic acids may indicate poor amino acid levels. The addition of a balanced amino acid supplement is helpful in resolving this deficiency.

Decreased

Citrate
Succinate

Rationale

Normal

Increased

2-5-Hydroxytryptophan 2x daily 100 mg

Serotonin is an important neurotransmitter made from the amino acid Tryptophan. 5-Hydroxyindoleacetate is a metabolite of serotonin so a low result of this organic acid may indicate a tryptophan deficiency.

Decreased

5-Hydroxyindoleacetate

Normal

Increased

Drug Interactions

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

Drugs listed below tend to further aggravate elements of blood chemistry that are out of range (H or L). The (#) after each drug denotes the number of times that drug is flagged as being potentially harmful.

Imipramine

Lithium Carbonate

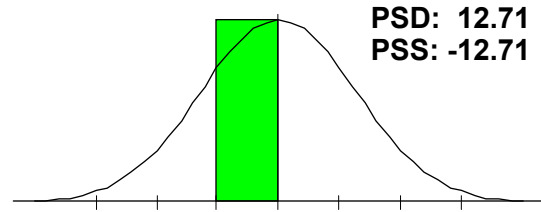
MAO Inhibitors

Methyldopa

B-Complex Markers

b-Hydroxyisovalerate, a-Ketoisovalerate, a-Ketoisocaproate, a-Keto-b-methylvalerate[L], Methylmalonate.

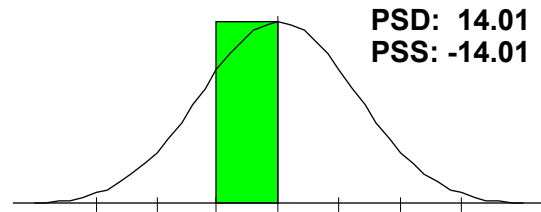
This panel assesses adequate intake of B-complex vitamins. This profile shows a percent imbalance below 25%, so no abnormalities were found.



BCAA Catabolism

a-Ketoisovalerate, a-Ketoisocaproate, a-Keto-b-methylvalerate[L].

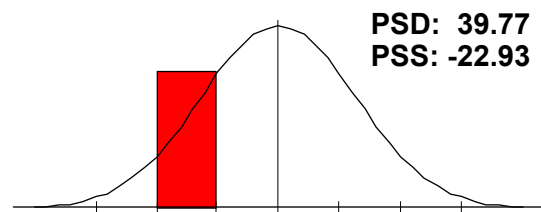
BCAA's are essential in building muscle and you can only get them from your diet or supplements. This panel assess your BCAA levels and how they're being used. This profile shows a percent imbalance below 25%, so no abnormalities were found.



CAC Cycle Ratios

CA Cycle Phase 1[L], CA Cycle Phase 2, CA Cycle Phase 3[H], CA Cycle Phase 4, CA Cycle Phase 5, CA Cycle Phase 6[L], CA Cycle Return[L].

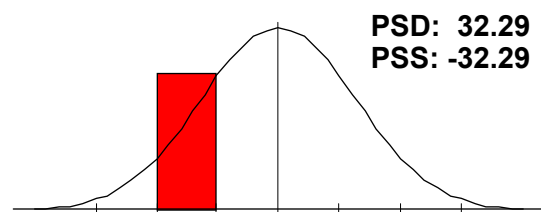
This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate poor energy production and/or vitamin, mineral and amino acid deficiencies.



Carbohydrate Metabolism

Lactate, Pyruvate[L], a-Hydroxybutyrate[L], b-Hydroxybutyrate[L].

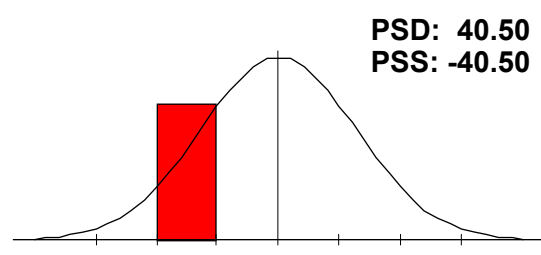
This panel assesses your body's ability to metabolize dietary carbohydrates. This profile could indicate a low carbohydrate intake. Symptoms include low energy and poor blood sugar control.



Energy Production

Citrate[L], cis-Aconitate, Isocitrate[L], a-Ketoglutarate[L], Succinate[L], Fumarate[L], Malate[L], Hydroxymethylglutarate[L].

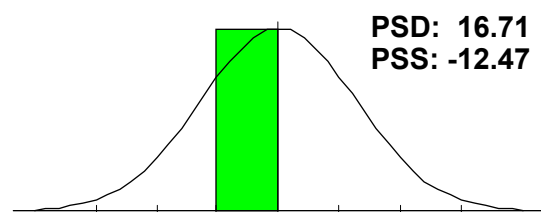
This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate an amino acid deficiency. Low readings are typically desirable, but if the CAC Cycle Ratios are abnormal, consider adding a broad spectrum amino acid supplement.



Fatty Acid Metabolism

Adipate, Suberate[L], Ethylmalonate.

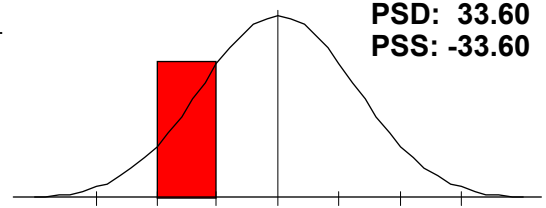
This panel assesses how fats are being broken down and utilized by the body. This profile shows a percent imbalance below 25%, so no abnormalities were found.



Intestinal Dysbiosis

p-Hydroxyphenyllactate[L], Tricarballylate[L], p-Hydroxybenzoate[L].

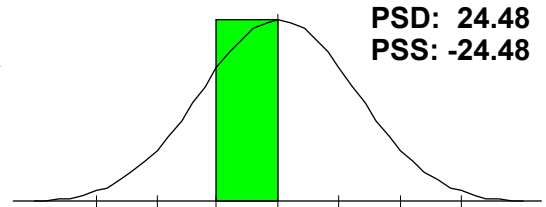
Dysbiosis is an overgrowth of bad bacteria in the gut. It is indicative of gut health. This profile suggests you have good gut health



Liver Detox Indicators

Orotate, Pyroglutamate, a-Hydroxybutyrate[L].

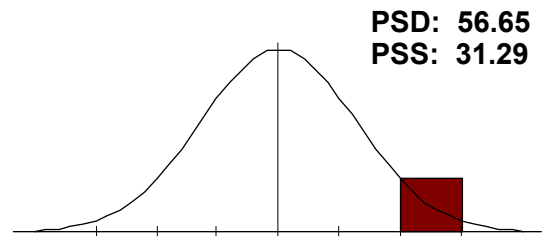
This panel assesses how well your liver removes toxins from your system. This profile shows a percent imbalance below 25%, so no abnormalities were found.



Neurotransmitters

Vanilmandelate, Homovanillate, 5-Hydroxyindoleacetate[L], Kynurenate[H], Quinolate[H].

Neurotransmitters are chemicals the brain uses to make the entire neurological system function - including all body functions. This panel assesses neurotransmitter production. This profile may be caused by the use of SSRI's. This may lead to fatigue, depression, or anxiety.



Clinical Correlation

Urine Organic Acids Date: 10/25/2018

Sample Report

Male / Age: 48

HK BioTek Ltd. (6610)

This report "MATCHES" clinical observations with the lab test. Elements shown, normal and abnormal, tend to characterize the observation. Highlighted elements are those reported to "MATCH" the characteristics of the clinical observation. Others are NOT matches but are elements in the observation.

No disease pattern matches > 66.0%

Comparison Progress Report

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

A "+" change is toward optimal % Status of zero. A "-" change is away from optimal % Status of zero.

	Status % on:	3/20/2018		10/25/2018		+/- change
CA Cycle Phase 3		394.67	H	49.89	H	+ 344.78
CA Cycle Phase 4		268.03	H	9.04		+ 258.99
a-Ketoisovalerate		35.00	H	-2.50		+ 32.50
Kynurenate		1.00		139.00	H	- 138.00
Quinolate		5.56		73.61	H	- 68.06
CA Cycle Return		-70.42	L	-100.92	L	- 30.50
Suberate		-6.43		-33.21	L	- 26.79

Comparison Report

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

The arrow's length is proportional to change. Left to right is increase. Right to left is decrease.
Green is improvement. Red is decline.

	+/-	Status % on:	3/20/2018	10/25/2018
		2-Hydroxyphenylacetate	-21.43	-16.43
-42.63 -23.23	+	3-Indoleacetate	-42.63 L	-23.23
-51.64 -43.44	-	5-Hydroxyindoleacetate	-43.44 L	-51.64 L
-20.91 6.36	+	Adipate	-20.91	6.36
		a-Hydroxybutyrate	-50.00 L	-46.00 L
		a-Keto-b-methylvalerate	-26.67 L	-29.52 L
		a-Ketoglutarate	-47.65 L	-41.38 L
-10.00 20.00	+	a-Ketoisocaproate	20.00	-10.00
-2.50 35.00	+	a-Ketoisovalerate	35.00 H	-2.50
-45.00 36.00	-	Benzoate	36.00 H	-45.00 L
		b-Hydroxybutyrate	-44.17 L	-45.97 L
		b-Hydroxyisovalerate	1.43	-4.64
-30.77 -22.92	+	cis-Aconitate	-30.77 L	-22.92
		Citrate	-62.40 L	-66.94 L
-21.27 -10.55	+	Ethylmalonate	-21.27	-10.55
		Fumarate	-38.42 L	-36.84 L
		Hippurate	-49.01 L	-47.61 L
		Homovanillate	-10.59	-11.76
		Hydroxymethylglutarate	-24.58	-27.12 L
-74.05 -65.00	-	Isocitrate	-65.00 L	-74.05 L
1.00 139.00	-	Kynurenate	1.00	139.00 H
-30.56 -6.71	+	Lactate	-30.56 L	-6.71
		Malate	-35.00 L	-28.25 L
		Methylmalonate	-21.88	-16.88
		Methylsuccinate	-20.32	-22.26
		Orotate	-15.45	-8.18
-36.43 -18.57	-	p-Hydroxybenzoate	-18.57	-36.43 L
		P-Hydroxyphenylacetate	3.15	7.55
-27.69 -16.15	-	p-Hydroxyphenyllactate	-16.15	-27.69 L
		Pyroglutamate	-15.75	-19.25
-44.29 -30.48	+	Pyruvate	-44.29 L	-30.48 L
5.56 73.61	-	Quinolate	5.56	73.61 H
-33.21 -6.43	-	Suberate	-6.43	-33.21 L
-26.49 -15.51	-	Succinate	-15.51	-26.49 L
-46.00 -36.67	+	Tricarballic acid	-46.00 L	-36.67 L
		Vanilmandelate	11.70	7.23
		Total Status Deviation	42.36	32.99
		Total Status Skew	-5.18	-19.38

Panel/Subset Comparison Report

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

B-Complex Markers	3/20/2018		10/25/2018		+/-	
b-Hydroxyisovalerate	1.43		-4.64			
a-Ketoisovalerate	35.00	H	-2.50	+		-2.50 ← 35.00
a-Ketoisocaproate	20.00		-10.00	+		-10.00 ← 20.00
a-Keto-b-methylvalerate	-26.67	L	-29.52	L		
Methylmalonate	-21.88		-16.88			
PSS / PSD	1.58 / 20.99		-12.71 / 12.71			

BCAA Catabolism	3/20/2018		10/25/2018		+/-	
a-Ketoisovalerate	35.00	H	-2.50	+		-2.50 ← 35.00
a-Ketoisocaproate	20.00		-10.00	+		-10.00 ← 20.00
a-Keto-b-methylvalerate	-26.67	L	-29.52	L		
PSS / PSD	9.44 / 27.22		-14.01 / 14.01			

CAC Cycle Ratios	3/20/2018		10/25/2018		+/-	
CA Cycle Phase 1	2.40		-26.19	L	-	-26.19 ← 2.40
CA Cycle Phase 2	-6.60		-24.57		-	-24.57 ← -6.60
CA Cycle Phase 3	394.67	H	49.89	H	+	49.89 ← 394.67
CA Cycle Phase 4	268.03	H	9.04		+	9.04 ← 268.03
CA Cycle Phase 5	20.55		-7.68		+	-7.68 ← 20.55
CA Cycle Phase 6	-60.15	L	-60.09	L		
CA Cycle Return	-70.42	L	-100.92	L	-	-100.92 ← -70.42
PSS / PSD	78.35 / 117.55		-22.93 / 39.77			

Carbohydrate Metabolism	3/20/2018		10/25/2018		+/-	
Lactate	-30.56	L	-6.71		+	-30.56 → -6.71
Pyruvate	-44.29	L	-30.48	L	+	-44.29 → -30.48
a-Hydroxybutyrate	-50.00	L	-46.00	L		
b-Hydroxybutyrate	-44.17	L	-45.97	L		
PSS / PSD	-42.25 / 42.25		-32.29 / 32.29			

Energy Production	3/20/2018		10/25/2018		+/-	
Citrate	-62.40	L	-66.94	L		
cis-Aconitate	-30.77	L	-22.92		+	-30.77 → -22.92
Isocitrate	-65.00	L	-74.05	L	-	-74.05 ← -65.00
a-Ketoglutarate	-47.65	L	-41.38	L		
Succinate	-15.51		-26.49	L	-	-26.49 ← -15.51
Fumarate	-38.42	L	-36.84	L		
Malate	-35.00	L	-28.25	L		
Hydroxymethylglutarate	-24.58		-27.12	L		
PSS / PSD	-39.92 / 39.92		-40.50 / 40.50			

Fatty Acid Metabolism	3/20/2018		10/25/2018		+/-	
Adipate	-20.91		6.36		+	-20.91 → 6.36
Suberate	-6.43		-33.21	L	-	-33.21 ← -6.43
Ethylmalonate	-21.27		-10.55		+	-21.27 → -10.55
PSS / PSD	-16.20 / 16.20		-12.47 / 16.71			

Panel/Subset Comparison Report

Sample Report

Urine Organic Acids Date: 10/25/2018

Male / Age: 48

HK BioTek Ltd. (6610)

Intestinal Dysbiosis	3/20/2018	10/25/2018	+/-			
p-Hydroxyphenyllactate	-16.15	-27.69 L	-	-27.69		-16.15
Tricarballic acid	-46.00 L	-36.67 L	+	-46.00		-36.67
p-Hydroxybenzoate	-18.57	-36.43 L	-	-36.43		-18.57
PSS / PSD	-26.91 / 26.91	-33.60 / 33.60				

Liver Detox Indicators	3/20/2018	10/25/2018	+/-	
Orotate	-15.45	-8.18		
Pyroglutamate	-15.75	-19.25		
alpha-Hydroxybutyrate	-50.00 L	-46.00 L		
PSS / PSD	-27.07 / 27.07	-24.48 / 24.48		

Neurotransmitters	3/20/2018	10/25/2018	+/-			
Vanilmandelate	11.70	7.23				
Homovanillate	-10.59	-11.76				
5-Hydroxyindoleacetate	-43.44 L	-51.64 L	-	-51.64		-43.44
Kynurenate	1.00	139.00 H	-	1.00		139.00
Quinolinic acid	5.56	73.61 H	-	5.56		73.61
PSS / PSD	-7.15 / 14.46	31.29 / 56.65				