

Functional Genomic Analysis Report

The dashboard displays various metabolic pathways and their associated genes. Key categories include:

- MTHFR, Folate, and Methylation (building)**: MTHFR, Folate, and Methylation (building)
- Nutrient Metabolism**: Nutrient Metabolism
- mTOR**: mTOR
- Phase I - CYP**: Phase I - CYP
- PON1**: PON1
- Fats, Carbs, Proteins, Vit A & Vit D**: Fats, Carbs, Proteins, Vit A & Vit D
- Neurotransmitters and BH4**: Neurotransmitters and BH4
- Mitochondria Function**: Mitochondria Function
- Circulation, Muscle, and Collagen**: Circulation, Muscle, and Collagen
- SHBG**: SHBG
- Phase III Detox**: Phase III Detox
- Autophagy**: Autophagy
- Urea Cycle**: Urea Cycle
- Phase II Sulfation**: Phase II Sulfation
- Phase II Glucuronidation**: Phase II Glucuronidation
- Phase II Acetylation**: Phase II Acetylation
- Phase II Glutathione Conjugation**: Phase II Glutathione Conjugation
- Phase II Methylation (Detox)**: Phase II Methylation (Detox)
- Nrf2 Keap1**: Nrf2 Keap1
- NAD+ NADPH**: NAD+ NADPH
- Glutathione**: Glutathione
- SOD and Catalase**: SOD and Catalase
- Sirtuins**: Sirtuins
- FOXO**: FOXO
- Fenton Reaction**: Fenton Reaction
- NOS Uncoupling**: NOS Uncoupling
- Glutamate**: Glutamate
- Food Gut Histamine Oxalates**: Food Gut Histamine Oxalates
- Heme Pathway & Sulfites**: Heme Pathway & Sulfites
- NOX, Mast Cells, and EMP Sensitivity**: NOX, Mast Cells, and EMP Sensitivity

Ethylmalonate	1.1	—	Genova Diagnostics
Last answered on: 9/2/2021			
Pyruvate		—	Genova Diagnostics
Last answered on: 9/2/2021			
L-Lactate	4.2	—	Genova Diagnostics
Last answered on: 9/2/2021			
β-Hydroxybutyrate		—	Genova Diagnostics
Last answered on: 9/2/2021			
Citrate	209	—	Genova Diagnostics
Last answered on: 9/2/2021			
Cis-Aconitate	28	—	Genova Diagnostics
Last answered on: 9/2/2021			
Isocitrate	39	—	Genova Diagnostics
Last answered on: 9/2/2021			

SAMPLE ANALYZED DATA

SNP Summary: Fenton Reaction

Gene	Evidence	Overall
Copper Transporters		
? SLC31A1	—	+2
? SLC31A2	—	+0
Ceruloplasmin		
? CP	+0	+0
Iron Transporters		
? SLC48A1	—	+0
? SLC11A2	+0	+1
SOD1		
? SOD1	-1	+0
Beta-Carotene		
? BCMO1	+0	+2
Iron Absorption		
? HFE	+0	+2
? FTL	+0	+0
? ACO1	—	+0
? TFR2	+0	+1
? TF	+0	+0
? TMPRSS6	+1	+1
Hydrogen Peroxide		
? GPX2	+1	+0
? GPX3	+1	+0
? GPX4	-2	+0
? GPX5	—	+0
? GPX6	—	+1
? GPX7	—	+2
? CAT	+0	+0
? PRDX1	+0	+2
NADPH		
? G6PD	+0	+0
? PGD	—	+0
? ME1	—	+0
? IDH1	+0	+0
? TALDO1	+0	+0
Copper Utilization/Transport		
? ATOX1	—	+0
? ATP7A	+0	+0
? ATP7B	-1	+0
Ferroportin		
? SLC40A1	-3	+0
HMOX		
? HMOX1	+0	+0
? HMOX2	+0	+0

SNP Summary

Click on an Enzyme in the list to view detailed SNP information in this pane.

Clicking on a second Enzyme while viewing one will switch SNP information displayed.

Significant SNPs		
BCMO1 A379V (rs7501331) ?	1	CT 34.3%
BCMO1 R267S (rs12934922)	1	AT 48.6%
BCMO1 (rs4889294)		TT 31.6%
BCMO1 (rs11645428)		GG 44%
BCMO1 (rs119478057)		CC 99.5%
Research & Informational SNPs		
BCMO1 (rs75397794)		TT 96.1%
BCMO1 (rs149697391)		CC 99.8%
BCMO1 (rs78857556)		AA 96.3%
BCMO1 (rs117523015)		AA 97.6%
BCMO1 (rs8046134)		GG 59.9%
BCMO1 (rs11865869)	1	AG 34.3%
BCMO1 (rs11643312)		GG 46.8%
BCMO1 (rs199834539)		CC 100%
BCMO1 (rs755750511)		AA 99.9%
BCMO1 (rs141781255)		GG 98.6%
BCMO1 (rs766086270)		GG 100%
BCMO1 (rs201946028)		CC 100%
BCMO1 (rs7188650)		TT 58.7%
BCMO1 (rs62044256)		CC 94.9%
BCMO1 (rs199858016)		GG 100%
BCMO1 (rs3803651)		AA 58.4%
BCMO1 (rs9924126)		AA 34.3%
BCMO1 (rs117546625)		AA 93.6%
BCMO1 (rs118072436)		CC 91.5%
BCMO1 (rs143238312)		CC 98.2%

Beta-carotene is converted into two retinal molecules. Vitamin A metabolism is important for vital processes such as vision, embryonic development, and skin protection. Polymorphisms in this gene can affect serum retinol concentration.

The most significant SNPs are BCMO1 A379V rs7501331, BCMO1 R267S rs12934922, and BCMO1 rs4889294

Research has found that double mutations in both BCMO1 A379V rs7501331 and BCMO1 R267S rs12934922 can cause a substantial reduction in the conversion of beta-carotene into retinol I in Females.