

Gene names		Protein names	Largest Cluster (kcal/mol)	Num in Largest Cluster
1	Kyat3 Ccbl2	Kynurenine--oxoglutarate transaminase 3 (EC 2.6.1.7) (Cysteine-S-conjugate beta-lyase 2) (EC 4.4.1.13) (Kynurenine aminotransferase 3) (Kynurenine aminotransferase III) (KATIII)	-18.740000	27.000000
	Kat3	(Kynurenine--glyoxylate transaminase) (EC 2.6.1.63) (Kynurenine--oxoglutarate transaminase III)		
2	Sepsecs	O-phosphoseryl-tRNA(Sec) selenium transferase (EC 2.9.1.2) (Selenocysteine synthase) (Sec synthase) (Selenocysteinyl-tRNA(Sec) synthase) (Sep-tRNA:Sec-tRNA synthase) (SepSecS) (UGA	-17.180000	13.000000
	D5ErtD135e	suppressor tRNA-associated protein)		
3	Kyat1 Ccbl1	Kynurenine--oxoglutarate transaminase 1 (EC 2.6.1.7) (Cysteine-S-conjugate beta-lyase) (EC 4.4.1.13) (Glutamine transaminase K) (GTK) (Glutamine--phenylpyruvate transaminase) (EC	-16.730000	48.000000
	Kat	2.6.1.64) (Kynurenine aminotransferase 1) (Kynurenine aminotransferase I) (KATI) (Kynurenine--oxoglutarate transaminase I)		
4	Shmt1	Serine hydroxymethyltransferase, cytosolic (SHMT) (EC 2.1.2.1) (Glycine hydroxymethyltransferase) (Serine methylase)	-16.040000	27.000000
	Shmt			
5	Got2 Got-2	Aspartate aminotransferase, mitochondrial (mAspAT) (EC 2.6.1.1) (EC 2.6.1.7) (Fatty acid-binding protein) (FABP-1) (Glutamate oxaloacetate transaminase 2) (Kynurenine aminotransferase 4) (Kynurenine aminotransferase IV) (Kynurenine--oxoglutarate transaminase 4) (Kynurenine--oxoglutarate transaminase IV) (Plasma membrane-associated fatty acid-binding protein) (FABPpm) (Transaminase A)	-16.010000	14.000000
6	Cth	Cystathionine gamma-lyase (EC 4.4.1.1) (Cysteine-protein sulfhydrase) (Gamma-cystathionase)	-15.730000	36.000000
7	Got1	Aspartate aminotransferase, cytoplasmic (cAspAT) (EC 2.6.1.1) (EC 2.6.1.3) (Cysteine aminotransferase, cytoplasmic) (Cysteine transaminase, cytoplasmic) (cCAT) (Glutamate oxaloacetate transaminase 1) (Transaminase A)	-15.530000	10.000000
8	Phykpl Agxt2I2	5-phosphohydroxy-L-lysine phospho-lyase (EC 4.2.3.134) (Alanine--glyoxylate aminotransferase 2-like 2)	-15.160000	18.000000
9	Hdc	Histidine decarboxylase (HDC) (EC 4.1.1.22)	-15.120000	25.000000
10	Etnppl Agxt2I1	Ethanolamine-phosphate phospho-lyase (EC 4.2.3.2) (Alanine--glyoxylate aminotransferase 2-like 1)	-15.110000	17.000000
11	Psat1 Psa	Phosphoserine aminotransferase (PSAT) (EC 2.6.1.52) (Endometrial progesterone-induced protein) (EPIP) (Phosphohydroxythreonine aminotransferase)	-15.050000	10.000000
	Psat			
12	Abat Gabat	4-aminobutyrate aminotransferase, mitochondrial (EC 2.6.1.19) ((S)-3-amino-2-methylpropionate transaminase) (EC 2.6.1.22) (GABA aminotransferase) (GABA-AT) (Gamma-amino-N-butyrate transaminase) (GABA transaminase) (GABA-T) (L-AIBAT)	-15.020000	69.000000
13	Alas2	5-aminolevulinate synthase, erythroid-specific, mitochondrial (ALAS-E) (EC 2.3.1.37) (5-aminolevulinic acid synthase 2) (Delta-ALA synthase 2) (Delta-aminolevulinate synthase 2)	-14.570000	54.000000
14	Gad1	Glutamate decarboxylase 1 (EC 4.1.1.15) (67 kDa glutamic acid decarboxylase) (GAD-67) (Glutamate decarboxylase 67 kDa isoform)	-14.380000	17.000000
	Gad67			
15	Aadat Kat2	Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial (KAT/AadAT) (2-aminoadipate aminotransferase) (2-aminoadipate transaminase) (EC 2.6.1.39) (Alpha-aminoadipate aminotransferase) (AadAT) (Kynurenine aminotransferase II) (Kynurenine--oxoglutarate aminotransferase II) (Kynurenine--oxoglutarate transaminase 2) (EC 2.6.1.7) (Kynurenine--oxoglutarate transaminase II)	-14.250000	11.000000
16	Alas1	5-aminolevulinate synthase, nonspecific, mitochondrial (ALAS-H) (EC 2.3.1.37) (5-aminolevulinic acid synthase 1) (Delta-ALA synthase 1) (Delta-aminolevulinate synthase 1)	-14.110000	42.000000
17	Sgpl1 Spl	Sphingosine-1-phosphate lyase 1 (S1PL) (SP-lyase 1) (SPL 1) (mSPL) (EC 4.1.2.27) (Sphingosine-1-phosphate aldolase)	-14.100000	37.000000
18	Gad11	Acidic amino acid decarboxylase GADL1 (Aspartate 1-decarboxylase) (ADC) (EC 4.1.1.11) (Cysteine sulfinic acid decarboxylase) (CSADC) (EC 4.1.1.29) (Glutamate decarboxylase-like protein 1)	-13.910000	25.000000
19	Accs	1-aminocyclopropane-1-carboxylate synthase-like protein 1 (ACC synthase-like protein 1)	-13.740000	12.000000
	Bcat2			
20	Bcatm	Branched-chain-amino-acid aminotransferase, mitochondrial (BCAT(m)) (EC 2.6.1.42)	-13.670000	11.000000
	Eca40			
21	Agxt Agxt1	Serine--pyruvate aminotransferase, mitochondrial (SPT) (EC 2.6.1.51) (Alanine--glyoxylate aminotransferase) (AGT) (EC 2.6.1.44)	-13.620000	18.000000
22	Pygb	Glycogen phosphorylase, brain form (EC 2.4.1.1)	-13.520000	18.000000
23	Accsl	Probable inactive 1-aminocyclopropane-1-carboxylate synthase-like protein 2 (ACC synthase-like protein 2)	-13.390000	17.000000
	Gm1967			
24	Bcat1	Branched-chain-amino-acid aminotransferase, cytosolic (BCAT(c)) (EC 2.6.1.42) (Protein ECA39)	-13.380000	12.000000
	Eca39			
25	Csad	Cysteine sulfinic acid decarboxylase (EC 4.1.1.29) (Aspartate 1-decarboxylase) (EC 4.1.1.11) (Cysteine-sulfinate decarboxylase) (Sulfinioalanine decarboxylase)	-13.370000	10.000000
26	Pygl	Glycogen phosphorylase, liver form (EC 2.4.1.1)	-13.190000	27.000000
27	Odc1 Odc	Ornithine decarboxylase (ODC) (EC 4.1.1.17)	-12.900000	10.000000
28	Got1I1	Putative aspartate aminotransferase, cytoplasmic 2 (EC 2.6.1.1) (Glutamate oxaloacetate transaminase 1-like protein 1) (Transaminase A-like protein 1)	-12.860000	13.000000
29	Gpt2 Aat2	Alanine aminotransferase 2 (ALT2) (EC 2.6.1.2) (Glutamate pyruvate transaminase 2) (GPT 2) (Glutamic--alanine transaminase 2) (Glutamic--pyruvic transaminase 2)	-12.820000	15.000000
30	Pygm	Glycogen phosphorylase, muscle form (EC 2.4.1.1) (Myophosphorylase)	-12.330000	14.000000
31	Sds	L-serine dehydratase/L-threonine deaminase (SDH) (EC 4.3.1.17) (L-serine deaminase) (L-threonine dehydratase) (TDH) (EC 4.3.1.19)	-12.250000	20.000000
32	Ddc	Aromatic-L-amino-acid decarboxylase (AADC) (EC 4.1.1.28) (DOPA decarboxylase) (DDC)	-12.180000	16.000000
33	Sptlc2 Lcb2	Serine palmitoyltransferase 2 (EC 2.3.1.50) (Long chain base biosynthesis protein 2) (LCB 2) (Long chain base biosynthesis protein 2a) (LCB2a) (Serine-palmitoyl-CoA transferase 2) (SPT 2)	-12.150000	29.000000
34	Srr	Serine racemase (EC 5.1.1.18) (D-serine ammonia-lyase) (D-serine dehydratase) (EC 4.3.1.18) (L-serine ammonia-lyase) (L-serine dehydratase) (EC 4.3.1.17)	-12.070000	6.000000
35	Agxt2	Alanine--glyoxylate aminotransferase 2, mitochondrial (AGT 2) (EC 2.6.1.44) ((R)-3-amino-2-methylpropionate--pyruvate transaminase) (EC 2.6.1.40) (Beta-ALAAT II) (Beta-alanine-pyruvate aminotransferase) (D-AIBAT)	-12.030000	46.000000
36	Gad2	Glutamate decarboxylase 2 (EC 4.1.1.15) (65 kDa glutamic acid decarboxylase) (GAD-65) (Glutamate decarboxylase 65 kDa isoform)	-11.980000	7.000000
	Gad65			
37	Sdsl Sds	Serine dehydratase-like (EC 4.3.1.17) (L-serine deaminase) (L-serine dehydratase/L-threonine deaminase) (L-threonine dehydratase) (TDH) (EC 4.3.1.19) (SDH)	-11.940000	12.000000
38	Oat	Ornithine aminotransferase, mitochondrial (EC 2.6.1.13) (Ornithine--oxo-acid aminotransferase)	-11.900000	39.000000
39	Plbbp Prosc	Pyridoxal phosphate homeostasis protein (PLP homeostasis protein) (Proline synthase co-transcribed bacterial homolog protein) (Pyridoxal phosphate-binding protein)	-11.840000	9.000000
40	Tat	Tyrosine aminotransferase (TAT) (EC 2.6.1.5) (L-tyrosine:2-oxoglutarate aminotransferase)	-11.720000	13.000000
41	Ldc1	Gene model 853, (NCBI) (Leucine decarboxylase 1)	-11.620000	14.000000
	Gm853			
42	Sptlc3	Serine palmitoyltransferase 3 (EC 2.3.1.50) (Long chain base biosynthesis protein 2b) (LCB2b) (Long chain base biosynthesis protein 3) (LCB 3) (Serine-palmityl-CoA transferase 3) (SPT 3)	-11.480000	28.000000
	Sptlc2I			
43	Nfs1 Nifs	Cysteine desulfurase, mitochondrial (m-Nfs1) (EC 2.8.1.7)	-11.450000	11.000000
44	Kynu	Kynureninase (EC 3.7.1.3) (L-kynurenine hydrolase)	-11.270000	23.000000
45	Azin1 Oazi	Antizyme inhibitor 1 (AZI) (Ornithine decarboxylase antizyme inhibitor)	-11.120000	8.000000
	Oazin			
46	Thnsl2	Threonine synthase-like 2 (TSH2) (mTSH2) (EC 4.2.3.-)	-10.940000	9.000000
47	Thnsl1	Threonine synthase-like 1 (TSH1)	-10.880000	12.000000
48	Mocos	Molybdenum cofactor sulfurase (MCS) (MOS) (MoCo sulfurase) (EC 2.8.1.9) (Molybdenum cofactor sulfurtransferase)	-10.740000	19.000000
49	Cbs	Cystathionine beta-synthase (EC 4.2.1.22) (Beta-thionase) (Serine sulfhydrase)	-10.630000	9.000000
50	Scly Scl	Selenocysteine lyase (mSCL) (EC 4.4.1.16)	-10.530000	20.000000
51	Gcat Kbl	2-amino-3-ketobutyrate coenzyme A ligase, mitochondrial (AKB ligase) (EC 2.3.1.29) (Aminoacetone synthase) (Glycine acetyltransferase)	-10.520000	22.000000
52	Shmt2	Serine hydroxymethyltransferase, mitochondrial (SHMT) (EC 2.1.2.1) (Glycine hydroxymethyltransferase) (Serine methylase)	-10.190000	11.000000
53	Gpt Gpt1	Alanine aminotransferase 1 (ALT1) (EC 2.6.1.2) (Glutamate pyruvate transaminase 1) (GPT 1) (Glutamic--alanine transaminase 1) (Glutamic--pyruvic transaminase 1)	-8.910000	31.000000
54	Tha1 Gly1	L-threonine aldolase (Threonine aldolase 1)	-8.450000	21.000000
55	Gldc	Glycine dehydrogenase (decarboxylating), mitochondrial (EC 1.4.4.2) (Glycine cleavage system P protein) (Glycine decarboxylase) (Glycine dehydrogenase (aminomethyl-transferring))	-7.220000	13.000000