Gene names	Protein names	Largest Cluster Res Mean (kcal/mol)	Num in Largest Cluster
1 PSAT1 PSA		-7.520000	8.000000
	Viguranina avaglutarata transaminasa 3 (EC 2.6.1.7) (Cystoina S canjugata bata lyasa 2) (EC 4.4.1.13) (Vymyranina aminatransforasa 3) (Kymyranina aminatransforasa III) (KATIII)	-6.820000	27.000000
KAT3	(Kynurenineglyoxylate transaminase) (EC 2.6.1.63) (Kynurenineoxoglutarate transaminase III)	-6.800000	70.000000
	Kynurenineoxoglutarate transaminase 1 (EC 2.6.1.7) (Cysteine-S-conjugate beta-lyase) (EC 4.4.1.13) (Glutamine transaminase K) (GTK) (Glutaminephenylpyruvate transaminase) (EC 2.6.1.64) (Kynurenine aminotransferase I) (Kynurenine aminotransferase I) (Kynurenineoxoglutarate transaminase I)	-6.320000	65.000000
5 ACCS PHACS	1-aminocyclopropane-1-carboxylate synthase-like protein 1 (ACC synthase-like protein 1)	-6.280000	9.000000
		-6.030000	34.000000
	O-phosphoseryl-tRNA(Sec) selenium transferase (EC 2.9.1.2) (Liver-pancreas antigen) (LP) (SLA-p35) (SLA/LP autoantigen) (Selenocysteine synthase) (Sec synthase) (Sec synthase) (Sep-tRNA:Sec-tRNA synthase) (SepSecS) (Soluble liver antigen) (SLA) (UGA suppressor tRNA-associated protein) (tRNA(Ser/Sec)-associated antigenic protein)	-5.920000	43.000000
		-5.870000	19.000000
		-5.860000	12.000000
BC12 ECA40		-5.820000	71.000000
		-5.730000	23.000000
SPAI	Serinepyruvate aminotransferase (SPT) (EC 2.6.1.51) (Alanineglyoxylate aminotransferase) (AGT) (EC 2.6.1.44)	-5.680000	70.000000
$13_{\text{KIAA}1252}^{\text{SGPL1}}$	Sphingosine-1-phosphate lyase 1 (S1PL) (SP-lyase 1) (SPL 1) (hSPL) (EC 4.1.2.27) (Sphingosine-1-phosphate aldolase)	-5.630000	25.000000
14 SDS SDH	L-serine dehydratase/L-threonine deaminase (SDH) (EC 4.3.1.17) (L-serine deaminase) (L-threonine dehydratase) (TDH) (EC 4.3.1.19)	-5.570000	75.000000
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) (Kynurenineoxoglutarate transaminase 2) (EC 2.6.1.7) (Kynurenineoxoglutarate transaminase II)	-5.560000	76.000000
ALAS1 ALAS3 16 ALASH OK/SW- cl.121	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)	-5.540000	16.000000
		-5.510000	31.000000
		-5.500000	35.000000
GAD67		-5.470000	17.000000
	Ornithine aminotransferase, mitochondrial (EC 2.6.1.13) (Ornithine delta-aminotransferase) (Ornithineoxo-acid aminotransferase) [Cleaved into: Ornithine aminotransferase, hepatic form; Ornithine aminotransferase, renal form]	-5.440000	27.000000
		-5.440000	14.000000
22 SPTLC2 KIAA0526 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)	-5.430000	78.000000
23 BCAT1 BCT1 ECA39 PHYKPL	Branched-chain-amino-acid aminotransferase, cytosolic (BCAT(c)) (EC 2.6.1.42) (Protein ECA39)	-5.420000	83.000000
	5-phosphohydroxy-L-lysine phospho-lyase (EC 4.2.3.134) (Alanineglyoxylate aminotransferase 2-like 2)	-5.370000	17.000000
25 C20orf38 SPTLC2L	(SPI3)	-5.350000	82.000000
	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)	-5.330000	71.000000
		-5.290000	34.000000
28 GCAT KBL	Spring dehydratase like (Legring deaminase) (Legring dehydratase) (Lehroning dehydratase) (Lehroning dehydratase) (TDH) (EC 4.3.1.10) (Spring dehydratase 2) (SDH 2) (EC	-5.280000	27.000000
	4.3.1.17)	-5.270000	31.000000
		-5.260000	16.000000
31 ALAS2 ALASE ASB	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)	-5.190000	82.000000
		-5.140000	20.000000
33 SRR	Aspartate aminotransferase, cytoplasmic (cAspAT) (EC 2.6.1.1) (EC 2.6.1.3) (Cysteine aminotransferase, cytoplasmic) (Cysteine transaminase, cytoplasmic) (cCAT) (Clutamate	-5.050000	15.000000
34 GO11	oxaloacetate transaminase 1) (Transaminase A)	-4.980000	37.000000
		-4.720000 -4.700000	31.000000 28.000000
37 ACCSL		-4.670000	9.000000
	Acidic amino acid decarboxylase GADL1 (Aspartate 1-decarboxylase) (ADC) (HuADC) (EC 4.1.1.11) (Cysteine sulfinic acid decarboxylase) (CSADC) (HuCSADC) (EC 4.1.1.29) (Glutamate decarboxylase-like protein 1)	-4.560000	27.000000
	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 A) (Ky	-4.480000	32.000000
40 THNSL1		-4.450000	47.000000
41 AGXT2 AGT2	Alapina, glyovylata aminotraneforaca 2. mitochondrial (ACT 2) (EC 2.6.1.44) ((R)-3-amino-2-mathylpropionata, nymyata transaminaca) (EC 2.6.1.40) (Rata-ALAAT II) (Rata-alapina-	-4.290000	17.000000
42 GPT2 AAT2 ALT2	Alanine aminotransferase 2 (ALT2) (EC 2.6.1.2) (Glutamate pyruvate transaminase 2) (GPT 2) (Glutamicalanine transaminase 2) (Glutamicpyruvic transaminase 2)	-4.220000	12.000000
43 HDC	Histidine decarboxylase (HDC) (EC 4.1.1.22)	-4.170000	29.000000
	Putative aspartate aminotransferase, cytoplasmic 2 (EC 2.6.1.1) (Glutamate oxaloacetate transaminase 1-like protein 1) (Transaminase A-like protein 1)	-4.130000	16.000000
45 AZIN1 OAZI OAZIN	Antizyme inhibitor 1 (AZI) (AZI1) (Ornithine decarboxylase antizyme inhibitor)	-4.070000	8.000000
		-3.890000	21.000000
		-3.880000 -3.850000	55.000000 20.000000
		-3.840000	21.000000
50 GPT AAT1 GPT1	Alanine aminotransferase 1 (ALT1) (EC 2.6.1.2) (Glutamate pyruvate transaminase 1) (GPT 1) (Glutamicalanine transaminase 1) (Glutamicpyruvic transaminase 1)	-3.620000	53.000000
		-3.150000	28.000000
52 NFS1 NIFS HUSSY-08 ETNPPL	Cysteine desulfurase, mitochondrial (EC 2.8.1.7) Ethanologina phosphoto phosphoto phosphot was a (EC 4.2.3.2) (Alapina, glyoyylata aminetransforms 2 like 1)	-3.110000	8.000000

-1.480000

54.000000

 $\mathbf{53}_{\mathbf{AGXT2L1}}^{\mathbf{ETNPPL}}$

 $Ethanolamine-phosphate\ phospho-lyase\ (EC\ 4.2.3.2)\ (Alanine--glyoxylate\ aminotransferase\ 2-like\ 1)$