

Stab 1. Table of significantly changed proteins in four two-group comparisor

Functional Annotation	GO ID	GO Term	IPI	Gene Symbol	Name	Sham mCAT vs sham WT				TAC WT vs sham WT				TAC mCAT vs TAC WT				TAC mCAT vs sham mCAT			
						log2 Fold	S.E.	p.value	q.value	log2 Fold	S.E.	p.value	q.value	log2 Fold	S.E.	p.value	q.value	log2 Fold	S.E.	p.value	q.value
Fatty acid metabolism	GO:0006635	fatty acid beta-oxidation	IPI:IP00119114	Acald	acyl-Coenzyme A dehydrogenase, long-chain	-0.353	0.117	0.003	0.093	-0.439	0.135	0.002	0.007	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00119203	Acadvl	acyl-Coenzyme A dehydrogenase, very long chain					-1.962	0.751	0.011	0.025								
			IPI:IP00116591	Acads	acyl-Coenzyme A dehydrogenase, short chain					-8.791	3.409	0.030	0.050								
			IPI:IP00121105	Hadh	hydroxyacyl-Coenzyme A dehydrogenase					-1.892	0.503	0.000	0.002								
			IPI:IP00331628	Hsd17b4	hydroxysteroid (17-beta) dehydrogenase 4					-0.287	0.134	0.039	0.061								
	GO:0019395	fatty acid oxidation	IPI:IP00226430	Acaa2	acyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxo-2,4-dienoyl CoA reductase 1, mitochondrial carnitine acetyltransferase					-0.690	0.297	0.045	0.065	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP000856855	Cra1	glutaryl-Coenzyme A dehydrogenase					-0.434	0.115	0.020	0.037								
			IPI:IP00120233	Gdh	solute carrier family 25 (mitochondrial carnitine/acylcarnitine 3-hydroxybutyrate dehydrogenase, type 1	-0.913	0.257	0.024	0.243	0.481	0.135	0.002	0.007	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00131584	Slc25a20	3-hydroxybutyrate dehydrogenase, type 1					0.287	0.134	0.045	0.065								
			IPI:IP00857778	Bdh1	3-hydroxybutyrate dehydrogenase, type 1					0.464	0.133	0.002	0.008								
Glucose metabolism	GO:0009062	fatty acid catabolic process	IPI:IP00889032	Bdh1	carnitine palmitoyltransferase 2					0.300	0.129	0.035	0.057	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00649159	Cpt2	enoyl Coenzyme A hydratase 1, peroxisomal					-0.877	0.230	0.001	0.006								
			IPI:IP00895351	Ech1	3-hydroxy-3-methylglutaryl-Coenzyme A lyase					-1.215	0.390	0.036	0.186								
			IPI:IP006084	Hmgcl	acyl-CoA synthetase short-chain family member 1	-0.248	0.089	0.008	0.137	2.480	0.247	0.000	0.000	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00283611	Hk1	hexokinase 1					-0.924	0.179	0.000	0.001								
	GO:0006096	glycolysis	IPI:IP00114342	Hk2	hexokinase 2					-0.793	0.253	0.005	0.045	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00337893	Pdh1	pyruvate dehydrogenase E1 alpha 1					-0.238	0.114	0.040	0.194								
			IPI:IP00132042	Pdh2	pyruvate dehydrogenase (lipoyamide) beta	-0.459	0.158	0.005	0.114	-0.556	0.195	0.006	0.019	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00122251	Pdk2	pyruvate dehydrogenase kinase, isoenzyme 2					-0.246	0.119	0.042	0.199								
			IPI:IP00222767	Pdhx	pyruvate dehydrogenase complex, component X					-0.361	0.162	0.035	0.186								
TCA cycle	GO:0006099	tricarboxylic acid cycle	IPI:IP00221407	Pdk1	pyruvate dehydrogenase 3 (NAD+), gamma	-0.194	0.095	0.044	0.352	0.647	0.199	0.010	0.024	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00261627	Sucd2	malate dehydrogenase 2, NAD (mitochondrial)	-0.289	0.090	0.002	0.093	0.322	0.104	0.002	0.010								
			IPI:IP00845858	Dlst	succinate-Coenzyme A ligase, ADP-forming, beta subunit	-0.398	0.160	0.017	0.191	-0.523	0.183	0.007	0.021								
			IPI:IP00318614	Idh2	dihydrolipoamide S-succinyltransferase (E2 component of isocitrate dehydrogenase 2 (NADP+), mitochondrial branched chain ketoacid dehydrogenase E1, beta polypeptide)	-0.233	0.073	0.002	0.073	-0.249	0.108	0.025	0.045								
			IPI:IP00115302	Bckdhb	acyl-Coenzyme A dehydrogenase family, member 8	-0.409	0.125	0.006	0.115	-0.406	0.183	0.032	0.318	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
	GO:0009083	chain family amino acid catabolism	IPI:IP00274422	Accd8	3-hydroxybutyryl-Coenzyme A hydrolase	-0.406	0.183	0.032	0.318	-0.372	0.083	0.000	0.006								
			IPI:IP00154047	Hibch	isovaleryl Coenzyme A dehydrogenase	-0.372	0.083	0.000	0.006	-0.414	0.148	0.011	0.156	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00471246	Ivd	branched chain aminotransferase 2, mitochondrial	-0.414	0.148	0.011	0.156	-0.501	0.116	0.000	0.002								
			IPI:IP00122442	Bcat2	coenzyme Q3 homolog, methyltransferase (yeast)					-0.425	0.197	0.041	0.062								
			IPI:IP00467124	Cog3	cytchrome c oxidase subunit IV isoform 1					-1.184	0.178	0.003	0.010								
Amino acid metabolism	GO:0006552	leucine catabolic process	IPI:IP00117978	Cox41	cytochrome c oxidase, subunit Vb	-0.406	0.183	0.032	0.318	0.469	0.104	0.000	0.003	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00116154	Cox5b	cytochrome c oxidase, subunit Vb	-0.406	0.183	0.032	0.318	-0.501	0.116	0.000	0.002								
			IPI:IP00785410	Cox5c	cytochrome c oxidase, subunit Vb	-0.406	0.183	0.032	0.318	-0.425	0.197	0.041	0.062								
			IPI:IP00320238	Cox6a2	cytochrome c oxidase, subunit VI a, polypeptide 2	-0.406	0.183	0.032	0.318	-0.469	0.104	0.000	0.003								
			IPI:IP00131771	Cox6c	cytochrome c oxidase, subunit VI a, polypeptide 2	-0.406	0.183	0.032	0.318	-0.469	0.104	0.000	0.003								
	GO:0006098	leucine biosynthetic process	IPI:IP00120136	Cox7a2l	cytochrome c oxidase subunit II	-0.406	0.183	0.032	0.318	-0.501	0.116	0.000	0.002	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00224210	Uqcrc2	cytochrome c oxidase subunit VIIa polypeptide 2-like	-0.406	0.183	0.032	0.318	-0.501	0.116	0.000	0.002								
			IPI:IP00881846	Ndufb5	ubiquinol-cytochrome c reductase, complex III subunit VII	-0.406	0.183	0.032	0.318	-0.501	0.116	0.014	0.029								
			IPI:IP00882043	Ndufb5	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 5	-0.406	0.183	0.032	0.318	-0.501	0.116	0.037	0.059								
			IPI:IP00132216	Ndufa3	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 3	-0.406	0.183	0.032	0.318	-0.501	0.116	0.035	0.057								
Electron Transport Chain	GO:0022904	spiratory electron transport chain	IPI:IP00882287	Etfdh	ubiquinol-cytochrome c reductase, complex III subunit VII	-0.406	0.183	0.032	0.318	-0.501	0.116	0.000	0.002	0.364 0.146 0.018 0.125				0.207 0.098 0.036 0.090			
			IPI:IP00119138	Uqcrc2	cytochrome c oxidase core protein 2	-0.406	0.183	0.032	0.318	-0.501	0.116	0.014	0.029								
			IPI:IP00133399	Ndufa6	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 6	-0.406	0.183	0.032	0.318	-0.501	0.116	0.000	0.002								
			IPI:IP00116748	Ndufa10	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex 1	-0.406	0.183	0.032	0.318	-0.501	0.116	0.037	0.065								
			IPI:IP00132347	Uqcrt	ubiquinol-cytochrome c reductase binding protein	-0.406	0.183	0.032	0.318	-0.501	0.116	0.044	0.065								

Protein Interaction Network Analysis Results																			
GO Category		GO ID		Protein ID		Protein Name		Protein Function		Protein Expression		Protein Interaction Data		Protein Interaction Statistics					
		IPI:IP00122547	Vdac2	voltage-dependent anion channel 2				0.509	0.087	0.000	0.000	-0.354	0.116	0.004	0.038				
		IPI:IP00750490	Vdac2	voltage-dependent anion channel 2				0.537	0.134	0.001	0.003								
Apoptosis	GO:0006915	apoptosis	IPI:IP00122549	Vdac1	voltage-dependent anion channel 1			0.202	0.084	0.020	0.037	-0.342	0.092	0.000	0.006				
			IPI:IP00857067	Vdac1	voltage-dependent anion channel 1							-0.433	0.114	0.000	0.006				
	GO:0006916	anti-apoptosis	IPI:IP001230885	Hspd1	apoptosis-inducing factor, mitochondrial-associated 1			0.278	0.102	0.009	0.024	-0.331	0.081	0.000	0.003				
			IPI:IP00845678	Hspd1	histidine triad nucleotide binding protein 2														
	GO:0001836	release of cytochrome c from mitochondria	IPI:IP00111045	Timm50	heat shock protein 1 (chaperonin)			0.328	0.083	0.000	0.001								
			IPI:IP00845678	Phb	heat shock protein 1 (chaperonin)			0.307	0.135	0.030	0.050								
	GO:0042981	regulation of apoptosis	IPI:IP00116228	Ppf1	translocase of inner mitochondrial membrane 50 homolog			1.115	0.166	0.000	0.001								
			IPI:IP00133440	Phb	peptidyl-prolyl isomerase F (cyclophilin F)			0.430	0.161	0.013	0.029								
	GO:0043066	negative regulation of apoptosis	IPI:IP00649084	Phb	prohibitin			0.643	0.074	0.000	0.000	-0.293	0.072	0.000	0.004				
			IPI:IP00649084	Phb	prohibitin			0.649	0.086	0.000	0.000	-0.298	0.082	0.001	0.013				
Proteolysis	GO:0000045	autophagic vacuole assembly	IPI:IP00111013	Ctsd	cathepsin D														
			IPI:IP00133903	Hspa9	heat shock protein 9	-0.215	0.087	0.016	0.188	0.311	0.094	0.002	0.008						
	GO:0006457	protein folding	IPI:IP00880839	Hspa9	heat shock protein 9	-0.215	0.087	0.016	0.188	0.311	0.094	0.002	0.008						
			IPI:IP00263863	Hspe1	heat shock protein 1 (chaperonin 10)	-0.367	0.155	0.033	0.318										
	GO:0006508	proteolysis	IPI:IP00117083	Gpral1	GrpE-like 1, mitochondrial														
			IPI:IP00331564	Dld	dihydroloipoamide dehydrogenase	-0.451	0.168	0.009	0.150	-1.790	0.796	0.028	0.049						
	GO:000165	MAPKKK cascade part of GO:00321190	IPI:IP00116192	Prdx3	dihydroloipoamide dehydrogenase	-0.446	0.157	0.006	0.119	-1.583	0.707	0.029	0.049						
			IPI:IP00170357	Afg3l2	leucine aminopeptidase 3			0.871	0.227	0.002	0.008								
Response to stimuli	GO:0042744	hydrogen peroxide catabolic process	IPI:IP00312058	Cat	AFG3(ATPase family gene 3)-like 2 (yeast)			0.748	0.219	0.027	0.048								
			IPI:IP00869393	Cat	ion peptidase 1, mitochondrial	-0.300	0.125	0.023	0.238	0.405	0.145	0.009	0.024	-0.464	0.086	0.000	0.001		
	GO:0000302	response to reactive oxygen species	IPI:IP00124699	Tnrd2	prosaposin	-0.223	0.088	0.016	0.188	1.445	0.377	0.019	0.037						
			IPI:IP00125652	Tnrd2	peroxiredoxin 3														
	GO:0071333	filarial response to glucose stimulus	IPI:IP00132653	Oxct1	3-oxoadic CoA transferase 1			7.215	1.662	0.000	0.008	4.659	1.526	0.004	0.041				
			IPI:IP00856651	Oxct1	3-oxoadic CoA transferase 1			7.024	1.590	0.000	0.008	4.563	1.463	0.004	0.038				
	GO:0045449	regulation of transcription	IPI:IP00420706	Lrrpc	catalase														
			IPI:IP00120414	Dnaj3	Dnaj (Hsp40) homolog, subfamily A, member 3														
Transcription and translation	GO:0070125	mitochondrial translational elongator	IPI:IP00230283	Gfm1	G elongation factor, mitochondrial 1														
			IPI:IP00315089	Sod1	mitochondrial ribosomal protein S36														
	GO:0006412	translation	IPI:IP00121359	Mpr14	superoxide dismutase 1, soluble	-0.981	0.251	0.017	0.035										
			IPI:IP00274407	Tufm	thioredoxin 2	0.591	0.198	0.040	0.061										
	GO:0006820	anion transport	IPI:IP00460132	Tufm	thioredoxin 2			0.255	0.125	0.047	0.065	-0.292	0.091	0.033	0.183				
			IPI:IP00122548	Vdac3	Tu translation elongation factor, mitochondrial			0.464	0.098	0.000	0.001	-0.326	0.111	0.005	0.041				
	GO:0055085	transmembrane transport	IPI:IP00127841	Slc25a5	Tu translation elongation factor, mitochondrial			0.846	0.177	0.009	0.024	-0.302	0.114	0.013	0.097				
			IPI:IP00124771	Slc25a3	solute carrier family 25 (mitochondrial carrier, phosphate carrier)			0.795	0.228	0.004	0.013								
Development	GO:0045040	protein import into mitochondrion	IPI:IP00221608	Samm50	solute carrier family 25 (mitochondrial carrier, adenine nucleotide carrier)														
			IPI:IP00117657	Opa1	solute carrier family 25 (mitochondrial carrier, adenine nucleotide carrier)	-0.273	0.103	0.010	0.152	0.759	0.117	0.000	0.000						
	GO:0060562	epithelial tube morphogenesis	IPI:IP00918980	Opa1	solute carrier family 25 (mitochondrial carrier, adenine nucleotide carrier)	-0.216	0.105	0.044	0.352	0.461	0.091	0.000	0.000	-0.447	0.095	0.000	0.001		
			IPI:IP00919056	Opa1	tu translation elongation factor, mitochondrial			0.454	0.097	0.000	0.000	-0.456	0.103	0.000	0.001				
	GO:0042407	cristae formation	IPI:IP01311777	ltem1	Tu translation elongation factor, mitochondrial	-0.408	0.107	0.001	0.049										
			IPI:IP00132799	C1qbp	leucine zipper-EF-hand containing transmembrane protein	-0.508	0.173	0.017	0.188	0.330	0.118	0.014	0.029						
Others	GO:0006812	iron-sulfur cluster assembly	IPI:IP00115827	Bgas	complement component 1, q subcomponent binding protein			0.746	0.188	0.001	0.004								
			IPI:IP00845783	Myt10	glioblastoma amplified sequence			0.752	0.248	0.014	0.029								
	GO:0046254	predicted pseudogene	IPI:IP00113386	Ethe1	myosin, light chain 10, regulatory	-0.871	0.164	0.000	0.001										
			IPI:IP00133562	Chchd3	ethylmalonic encephalopathy 1														
	GO:00468653	predicted pseudogene	IPI:IP00468653	Pccb	coiled-coil-helix-coiled-coil-helix domain containing 3	-0.448	0.091	0.000	0.001	0.623	0.191	0.006	0.018						
			IPI:IP00918838	Pccb	propionyl Coenzyme A carboxylase, beta polypeptide	-0.365	0.117	0.007	0.137	0.537	0.061	0.000	0.000						
Not characterized	GO:0006812	predicted pseudogene	IPI:IP00122554	Cabc1	propionyl Coenzyme A carboxylase, alpha polypeptide			0.592	0.164	0.000	0.001								
			IPI:IP00113049	Coq10b	aarF domain containing kinase 3			0.592	0.198	0.041	0.061								
	GO:0006812	predicted pseudogene	IPI:IP00120671	Isc2a2	coenzyme Q10 homolog B (S. cerevisiae)			0.523	0.201	0.029	0.049								
			IPI:IP00555088	Irmt	iron-sulfur cluster assembly 2 homolog (S. cerevisiae)			0.610	0.217	0.048	0.066	-0.688	0.244	0.048	0.217				
	GO:0046250	predicted pseudogene	IPI:IP00122740	Macrodr1	inner membrane protein, mitochondrial	-0.289	0.111	0.015	0.188	-0.239	0.095	0.018	0.035						
			IPI:IP00330523	Pcca	MACRO domain containing 1	-0.309	0.104	0.005	0.114	0.305	0.092	0.002	0.009	-0.249	0.104	0.022	0.133		
	GO:0046254	predicted pseudogene	IPI:IP00858124	Pcca	propionyl-Coenzyme A carboxylase, alpha polypeptide	-0.505	0.166	0.039	0.331	0.534	0.139	0.019	0.125						
			IPI:IP00462903	Dhrs4	dehydrogenase/reductase (SDR family) member 4			0.592	0.198	0.041	0.061	-0.203	0.095	0.044	0.204				
	GO:0006812	predicted pseudogene	IPI:IP00170307	Apoa1bp	apolipoprotein A-I binding protein			0.640	0.108	0.000	0.000	0.190	0.087	0.038	0.189				
			IPI:IP00850133	1300010F03Ri	RIKEN cDNA 1300010F03 gene			0.261	0.098	0.010	0.025	-0.324	0.109	0.008	0.064				
Others	GO:0006812	predicted pseudogene	IPI:IP00126917	1700071K01Ri	RIKEN cDNA 1700071K01 gene			0.778	0.151	0.000	0.000								
			IPI:IP00461249	Gm1221	predicted gene 12141			0.421	0.124	0.004	0.015								
	GO:0006812	predicted pseudogene	IPI:IP00462250	Gm5529	predicted pseudogene 5529			0.646	0.192	0.028	0.049								
			IPI:IP00264082	Gm6293	predicted pseudogene 6293			0.591	0.198	0.040	0.061								
	GO:0006812	predicted pseudogene	IPI:IP00475158	Gm12251	predicted gene 12251			0.664	0.096	0.000	0.000								
			IPI:IP00135857	Gm8566	predicted pseudogene 8566			-0.981	0.251	0.017	0.035								
	GO:0006812	predicted pseudogene	IPI:IP00849166	Gm2993	predicted gene 2893			0.421	0.124	0.004	0.015								
			IPI:IP00120715	Gm14494	predicted gene 14494			0.646	0.192	0.028	0.049								
	GO:0006812	predicted pseudogene	IPI:IP00853920	LOC10004410	similar to thioredoxin reductase 2		</												