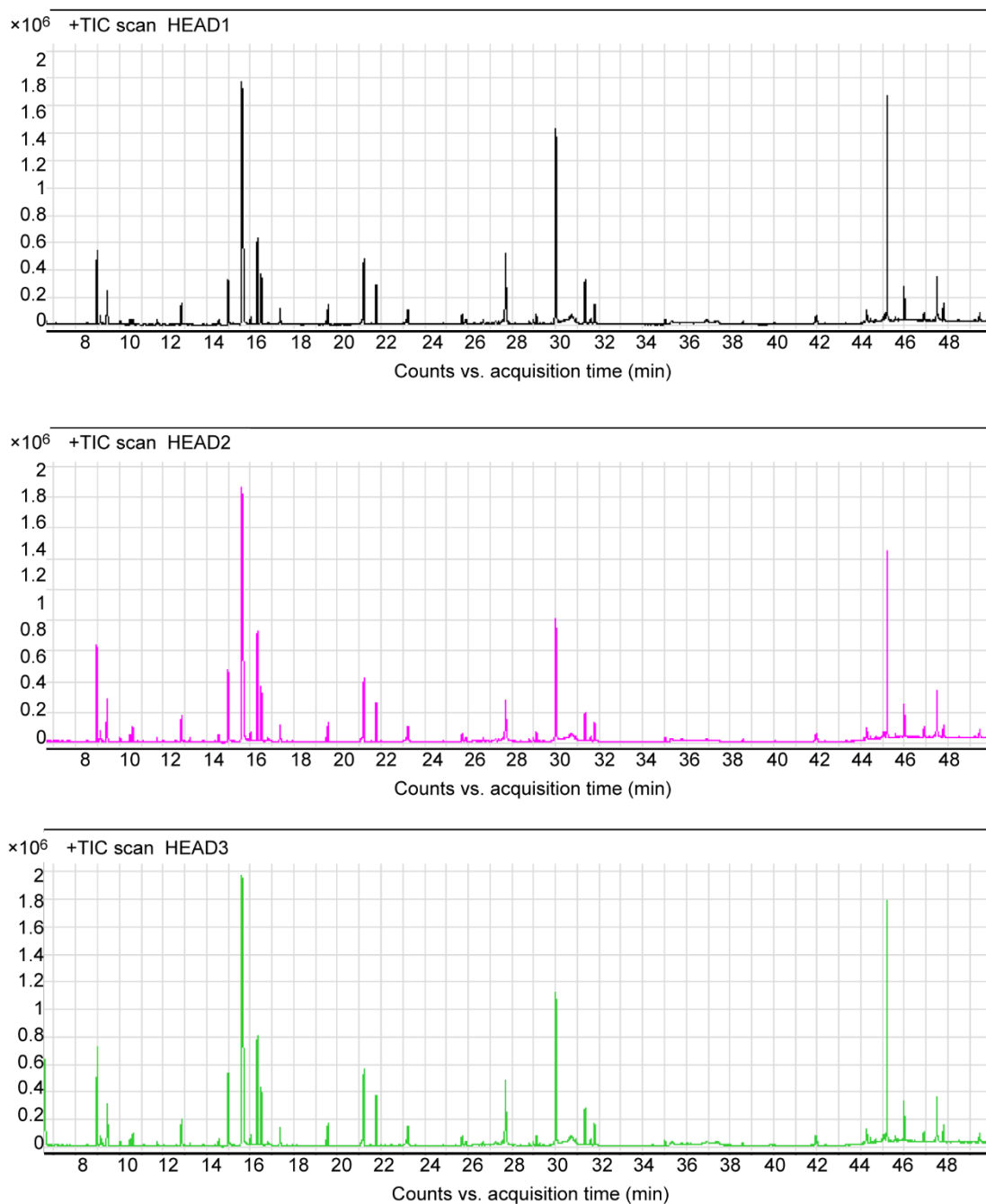


# Supplementary Materials: Metabolomics Analysis of the Larval Head of the Silkworm, *Bombyx mori*

Yi Li, Xin Wang, Quanmei Chen, Yong Hou, Qingyou Xia and Ping Zhao



**Figure S1.** The total ion chromatogram from GC-MS.

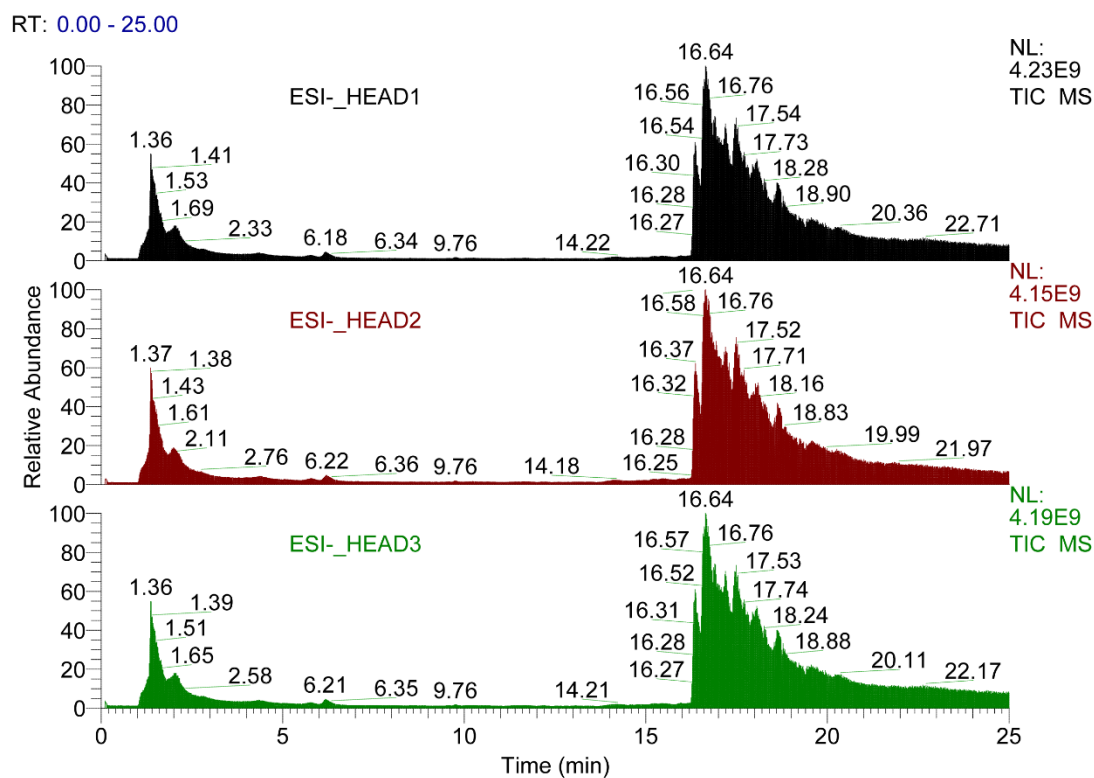
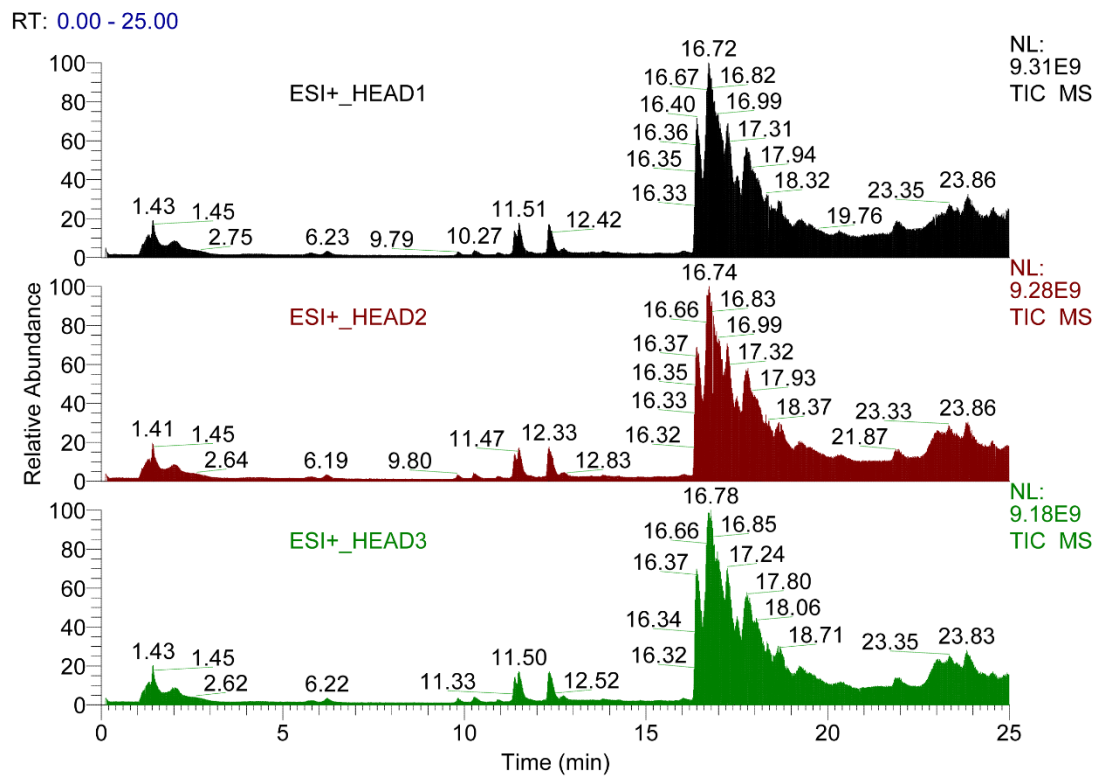


Figure S2. The total ion chromatogram from LC-MS/MS.

**Table S1.** Detailed information of the metabolites identified by GC-MS and LC-MS/MS.

Classification	Metabolite Name	KEGG ID	Mass-to-charge Ratio [m/z]	Retention Time [min]	Ion Source	Monoisotopic Mass [Da]	DeltaPPM	Relative Score
Alcohol	D-Mannitol 1-phosphate	C00644	261.042831	1.50	ESI-	260.030823	0.166279	-
Alcohol	sn-Glycerol 3-phosphate	C00093	173.021149	1.72	ESI+	172.013672	1.163172	-
Alcohol	sn-Glycero-3-phosphocholine	C00670	258.109772	1.41	ESI+	257.102814	1.240250	-
Alcohol	D-Mannitol 1-phosphate	C00644	263.052673	1.63	ESI+	260.030823	0.063881	-
Alcohol	Glycerol	C00116	205.1	15.68	EI+	92.04734	-	803
Alcohol	Mannitol	C00392	319.1	31.62	EI+	182.079041	-	727
Alcohol	myo-Inositol	C00137	319.1	31.80	EI+	180.063385	-	713
Alcohol	D-Sorbitol	C00794	319.1	31.79	EI+	182.079041	-	846
Alcohol	Ethanol	C00469	267.1	27.41	EI+	46.041866	-	711
Amino acid	N-Acetyl-L-glutamate	C00624	188.052948	2.24	ESI-	189.063721	2.109705	-
Amino acid	L-Methionine	C00073	150.058334	1.50	ESI+	149.051056	0.011745	-
Amino acid	L-Histidine	C00135	156.077011	1.13	ESI+	155.069473	1.686392	-
Amino acid	Protein N6-methyl-L-lysine	C05544	161.128799	1.13	ESI+	160.121185	2.109888	-
Amino acid	D-Phenylalanine	C02265	166.086395	4.03	ESI+	165.078979	0.846041	-
Amino acid	L-Arginine	C00062	175.119217	1.13	ESI+	174.111679	1.500867	-
Amino acid	N-Acetyl-L-glutamate	C00624	190.071259	2.19	ESI+	189.063721	1.380194	-
Amino acid	L-Tryptophan	C00078	205.097229	5.72	ESI+	204.089874	0.384163	-
Amino acid	3-Hydroxy-L-kynurenine	C03227	225.086914	2.10	ESI+	224.079712	0.332638	-
Amino acid	L-Valine	C00183	72.1	10.05	EI+	117.078979	-	865
Amino acid	L-Alanine	C00041	116.1	10.63	EI+	89.047676	-	890
Amino acid	Glycine	C00037	102.0	11.11	EI+	75.032028	-	787
Amino acid	L-Leucine	C00123	86.1	12.03	EI+	131.094635	-	717
Amino acid	L-Isoleucine	C00407	86.1	12.60	EI+	131.094635	-	703
Amino acid	L-Threonine	C00188	73.0	16.03	EI+	119.058243	-	775

Amino acid	$\beta$ -Alanine	C00099	248.1	19.48	EI+	89.047676	-	811
Amino acid	L-Proline	C00148	156.1	21.79	EI+	115.063332	-	879
Amino acid	L-Asparagine	C00152	73.0	29.13	EI+	132.053497	-	702
Amino acid	Serine	C00065	116.0	15.00	EI+	105.042595	-	872
Amino acid	S-Adenosyl- L-homocysteine	C00021	385.128784	2.15	ESI+	384.121582	0.193742	-
Amino acid	S-Adenosyl- L-methionine	C00019	399.144775	1.31	ESI+	398.137238	0.655027	-
Carnitine	Carnitine	C00487	162.112747	1.30	ESI+	161.105194	1.716840	-
Carnitine	O-Propanoylcarnitine	C03017	218.138794	2.57	ESI+	217.131409	0.498985	-
Carnitine	L-Palmitoylcarnitine	C02990	400.341827	19.48	ESI+	399.334869	0.796844	-
Fatty acid	Stearidonic acid	C16300	277.215851	17.49	ESI+	276.208923	1.262705	-
Fatty acid	Tetracosanoic acid	C08320	369.372437	23.73	ESI+	368.365417	0.697885	-
Fatty acid	Hexadecanoic acid	C00249	313.2	33.34	EI+	256.240234	-	821
Fatty acid	(9Z,12Z,15Z)-Octadecatrienoic acid	C06427	79.0	34.46	EI+	278.224579	-	827
Fatty acid	13(S)-HPOT	C04785	309.223236	14.47	ESI-	310.214417	1.615659	-
Fatty acid	Propanoate	C00163	174.0	9.11	EI+	73.029503	-	833
Ketone	Umbelliferone	C09315	163.039139	0.57	ESI+	162.031693	1.044202	-
Ketone	Solavetivone	C09737	219.174393	0.58	ESI+	218.167068	0.220474	-
Ketone	Androsterone	C00280	291.231537	20.21	ESI+	290.224579	1.098236	-
Nucleoside	Uridine	C00299	243.123047	1.42	ESI-	244.069534	1.256678	-
Nucleoside	Guanosine	C00387	282.090393	2.75	ESI-	283.091675	1.555915	-
Nucleoside	Guanine	C00242	152.056671	1.41	ESI+	151.049408	0.089093	-
Nucleoside	Cytidine	C00475	244.092407	1.41	ESI+	243.085526	1.626481	-
Nucleoside	Uridine	C00299	245.076813	2.17	ESI+	244.069534	0.008785	-
Nucleoside	Inosine	C00294	269.087860	1.42	ESI+	268.08078	0.732961	-
Nucleoside	Guanosine	C00387	284.098541	1.41	ESI+	283.091675	1.449498	-
Nucleotide	Uridine monophosphate	C00105	323.060150	2.33	ESI-	324.035858	2.490545	-
Nucleotide	Adenosine monophosphate	C00020	346.082886	1.40	ESI-	347.06308	0.477833	-
Nucleotide	Xanthosine 5'-phosphate	C00655	363.015259	1.37	ESI-	364.042023	2.059706	-

Nucleotide	Adenosine diphosphate	C00008	426.067932	2.44	ESI-	427.029419	2.389623	-
Nucleotide	7-Aminomethyl-7-carbaguanine	C16675	180.088135	5.40	ESI+	179.080704	0.860872	-
Nucleotide	5'-Methylthioadenosine	C00170	298.096771	6.19	ESI+	313.084473	0.250294	-
Nucleotide	Adenosine monophosphate	C00020	348.069824	1.41	ESI+	347.06308	1.533963	-
Nucleotide	Guanosine monophosphate	C00144	364.064880	1.41	ESI+	363.057983	1.044542	-
Nucleotide	Adenosine diphosphate	C00008	428.036835	2.10	ESI+	427.029419	0.325778	-
Nucleotide	Triiodothyronine	C02465	651.796387	1.22	ESI+	650.790039	1.427315	-
Organic acid	Citrate	C00158	189.044235	1.36	ESI-	189.005173	0.168223	-
Organic acid	Succinate	C00042	147.0	16.49	EI+	116.012054	-	936
Organic acid	Phenylpyruvate	C00166	165.054718	2.10	ESI+	163.04007	0.569455	-
Organic acid	Urate	C00366	169.035507	1.41	ESI+	168.029434	0.627263	-
Organic acid	Allantoate	C00499	177.061874	1.54	ESI+	176.05455	0.271448	-
Organic acid	Nogalunate	C12416	383.075989	1.32	ESI+	380.054321	0.434033	-
Organic acid	Butanoic acid	C00246	147.0	14.39	EI+	88.052429	-	883
Organic acid	(S)-Lactate	C00186	147.0	9.44	EI+	89.024422	-	785
Organic acid	Glutarate	C00489	73.1	23.24	EI+	130.02771	-	812
Organic acid	Urate-3-ribonucleoside	C05513	299.088409	4.44	ESI-	300.070587	1.265652	-
Organic acid	3-Deoxy-D-manno-octulosonate 8-phosphate	C04478	317.043884	1.52	ESI-	318.035187	0.617194	-
Other	OPC-8:0	C04780	293.233795	15.98	ESI-	294.219482	1.810336	-
Other	Dihydroneopterin phosphate	C05925	334.032715	1.36	ESI-	335.06308	2.692369	-
Other	L-Dopa	C00355	198.076126	1.41	ESI+	197.068802	0.241026	-
Other	2-Phytyl-1,4-naphthoquinone	C13309	437.173874	16.36	ESI+	436.334137	2.159811	-
Other	CDP-choline	C00307	489.114807	1.36	ESI+	488.10733	0.410829	-
Other	Retinyl palmitate	C02588	524.236511	17.28	ESI+	524.459351	1.681237	-
Other	Urea	C00086	147.0	14.56	EI+	60.032364	-	857
Peptide	Glutathione	C00051	306.101379	1.45	ESI-	307.083801	0.839596	-
Peptide	Glutathione	C00051	308.090790	1.41	ESI+	307.083801	0.937221	-

Peptide	Glutathione disulfide	C00127	613.158936	1.41	ESI+	612.151978	0.521199	-
Sterol	Cholesterol	C00187	329.3	47.79	EI+	386.354858	-	841
Sterol	$\beta$ -Sitosterol	C01753	207.0	49.45	EI+	414.386169	-	782
Sugar	$\alpha$ -D-Glucose 6-phosphate	C00668	259.095764	1.35	ESI-	260.029724	0.052061	-
Sugar	Xylobiose	C01630	281.136261	1.21	ESI-	282.095093	2.008703	-
Sugar	Sedoheptulose 7-phosphate	C05382	289.038208	1.37	ESI-	290.040283	0.678267	-
Sugar	<i>N</i> -Acetyl-D-glucosamine 6-phosphate	C00357	300.021881	1.48	ESI-	301.056274	0.451413	-
Sugar	Acetyl-maltose	C02130	383.086243	1.38	ESI-	384.12677	0.591104	-
Sugar	Trehalose 6-phosphate	C00689	421.048401	1.35	ESI-	422.08255	1.477948	-
Sugar	D-Arabinose 5-phosphate	C01112	231.026337	1.42	ESI+	230.01915	0.273358	-
Sugar	D-Glucosamine 6-phosphate	C00352	260.053040	1.37	ESI+	259.045715	0.185105	-
Sugar	D-Lyxose	C00476	73.0	25.90	EI+	150.052826	-	737
Sugar	D-Allose	C01487	73.1	30.94	EI+	180.063385	-	785
Sugar	$\alpha,\alpha$ -Trehalose	C01083	361.2	45.20	EI+	342.116211	-	878
Sugar	Turanose	C19636	217.1	45.99	EI+	342.116211	-	764
Sugar	D-Talose	C06467	319.1	30.94	EI+	180.063385	-	799
Vitamin	Thiamine	C00378	335.042786	1.43	ESI-	265.111755	2.140097	-
Vitamin	Riboflavin	C00255	375.148285	8.57	ESI-	376.138275	2.388937	-
Vitamin	Riboflavin	C00255	377.145782	8.57	ESI+	376.138275	0.613792	-

**Table S2.** Pathway analysis related to the identified metabolites.

Pathway ID	Pathway Name	Numbers of Metabolites	Category
ko01100	Metabolic pathways	73	Other pathway
ko01110	Biosynthesis of secondary metabolites	40	Other pathway
ko01060	Biosynthesis of plant secondary metabolites	26	Other pathway
ko01130	Biosynthesis of antibiotics	25	Other pathway
ko02010	ABC transporters	23	Environmental Information Processing; Membrane transport
ko01230	Biosynthesis of amino acids	20	Metabolism; Overview
ko01120	Microbial metabolism in diverse environments	18	Other pathway
ko04974	Protein digestion and absorption	16	Organismal Systems; Digestive system
ko05230	Central carbon metabolism in cancer	15	Human Diseases; Cancers
ko00230	Purine metabolism	15	Metabolism; Nucleotide metabolism
ko00970	Aminoacyl-tRNA biosynthesis	13	Genetic Information Processing; Translation
ko04978	Mineral absorption	11	Organismal Systems; Digestive system
ko01070	Biosynthesis of plant hormones	10	Other pathway
ko01210	2-Oxocarboxylic acid metabolism	9	Metabolism; Overview
ko01065	Biosynthesis of alkaloids derived from histidine and purine	9	Other pathway
ko02060	Phosphotransferase system (PTS)	8	Environmental Information Processing; Membrane transport
ko00270	Cysteine and methionine metabolism	8	Metabolism; Amino acid metabolism
ko01200	Carbon metabolism	7	Metabolism; Overview
ko00051	Fructose and mannose metabolism	6	Metabolism; Carbohydrate metabolism
ko00908	Zeatin biosynthesis	6	Metabolism; Metabolism of terpenoids and polyketides
ko00240	Pyrimidine metabolism	6	Metabolism; Nucleotide metabolism
ko01063	Biosynthesis of alkaloids derived from shikimate pathway	6	Other pathway
ko04152	AMPK signaling pathway	5	Environmental Information Processing; Signal transduction
ko04080	Neuroactive ligand-receptor interaction	5	Environmental Information Processing; Signaling molecules and interaction

ko05012	Parkinson's disease	5	Human Diseases; Neurodegenerative diseases
ko00250	Alanine, aspartate and glutamate metabolism	5	Metabolism; Amino acid metabolism
ko00966	Glucosinolate biosynthesis	5	Metabolism; Biosynthesis of other secondary metabolites
ko00460	Cyanoamino acid metabolism	5	Metabolism; Metabolism of other amino acids
ko04976	Bile secretion	5	Organismal Systems; Digestive system
ko01061	Biosynthesis of phenylpropanoids	5	Other pathway
ko01064	Biosynthesis of alkaloids derived from ornithine, lysine and nicotinic acid	5	Other pathway
ko04024	cAMP signaling pathway	4	Environmental Information Processing; Signal transduction
ko04068	FoxO signaling pathway	4	Environmental Information Processing; Signal transduction
ko00220	Arginine biosynthesis	4	Metabolism; Amino acid metabolism
ko00260	Glycine, serine and threonine metabolism	4	Metabolism; Amino acid metabolism
ko00290	Valine, leucine and isoleucine biosynthesis	4	Metabolism; Amino acid metabolism
ko00310	Lysine degradation	4	Metabolism; Amino acid metabolism
ko00330	Arginine and proline metabolism	4	Metabolism; Amino acid metabolism
ko00261	Monobactam biosynthesis	4	Metabolism; Biosynthesis of other secondary metabolites
ko00052	Galactose metabolism	4	Metabolism; Carbohydrate metabolism
ko00630	Glyoxylate and dicarboxylate metabolism	4	Metabolism; Carbohydrate metabolism
ko00640	Propanoate metabolism	4	Metabolism; Carbohydrate metabolism
ko00592	alpha-Linolenic acid metabolism	4	Metabolism; Lipid metabolism
ko00480	Glutathione metabolism	4	Metabolism; Metabolism of other amino acids
ko04977	Vitamin digestion and absorption	4	Organismal Systems; Digestive system
ko04918	Thyroid hormone synthesis	4	Organismal Systems; Endocrine system
ko04922	Glucagon signaling pathway	4	Organismal Systems; Endocrine system
ko04924	Renin secretion	4	Organismal Systems; Endocrine system
ko01066	Biosynthesis of alkaloids derived from terpenoid and polyketide	4	Other pathway
ko04022	cGMP-PKG signaling pathway	3	Environmental Information Processing; Signal transduction
ko04122	Sulfur relay system	3	Genetic Information Processing; Folding, sorting and degradation



ko05231	Choline metabolism in cancer	3	Human Diseases; Cancers
ko01502	Vancomycin resistance	3	Human Diseases; Drug resistance
ko00280	Valine, leucine and isoleucine degradation	3	Metabolism; Amino acid metabolism
ko00350	Tyrosine metabolism	3	Metabolism; Amino acid metabolism
ko00360	Phenylalanine metabolism	3	Metabolism; Amino acid metabolism
ko00010	Glycolysis/Gluconeogenesis	3	Metabolism; Carbohydrate metabolism
ko00500	Starch and sucrose metabolism	3	Metabolism; Carbohydrate metabolism
ko00520	Amino sugar and nucleotide sugar metabolism	3	Metabolism; Carbohydrate metabolism
ko00190	Oxidative phosphorylation	3	Metabolism; Energy metabolism
ko00540	Lipopolysaccharide biosynthesis	3	Metabolism; Glycan biosynthesis and metabolism
ko00071	Fatty acid degradation	3	Metabolism; Lipid metabolism
ko00564	Glycerophospholipid metabolism	3	Metabolism; Lipid metabolism
ko01040	Biosynthesis of unsaturated fatty acids	3	Metabolism; Lipid metabolism
ko04923	Regulation of lipolysis in adipocytes	3	Organismal Systems; Endocrine system
ko04925	Aldosterone synthesis and secretion	3	Organismal Systems; Endocrine system
ko04740	Olfactory transduction	3	Organismal Systems; Sensory system
ko01062	Biosynthesis of terpenoids and steroids	3	Other pathway
ko04142	Lysosome	2	Cellular Processes; Transport and catabolism
ko02020	Two-component system	2	Environmental Information Processing; Signal transduction
ko04150	mTOR signaling pathway	2	Environmental Information Processing; Signal transduction
ko04151	PI3K-Akt signaling pathway	2	Environmental Information Processing; Signal transduction
ko05200	Pathways in cancer	2	Human Diseases; Cancers
ko05032	Morphine addiction	2	Human Diseases; Substance dependence
ko05034	Alcoholism	2	Human Diseases; Substance dependence
ko00380	Tryptophan metabolism	2	Metabolism; Amino acid metabolism
ko00400	Phenylalanine, tyrosine and tryptophan biosynthesis	2	Metabolism; Amino acid metabolism
ko00960	Tropane, piperidine and pyridine alkaloid biosynthesis	2	Metabolism; Biosynthesis of other secondary metabolites
ko00020	Citrate cycle (TCA cycle)	2	Metabolism; Carbohydrate metabolism

ko00030	Pentose phosphate pathway	2	Metabolism; Carbohydrate metabolism
ko00040	Pentose and glucuronate interconversions	2	Metabolism; Carbohydrate metabolism
ko00620	Pyruvate metabolism	2	Metabolism; Carbohydrate metabolism
ko00650	Butanoate metabolism	2	Metabolism; Carbohydrate metabolism
ko00195	Photosynthesis	2	Metabolism; Energy metabolism
ko00680	Methane metabolism	2	Metabolism; Energy metabolism
ko00710	Carbon fixation in photosynthetic organisms	2	Metabolism; Energy metabolism
ko00720	Carbon fixation pathways in prokaryotes	2	Metabolism; Energy metabolism
ko00920	Sulfur metabolism	2	Metabolism; Energy metabolism
ko00100	Steroid biosynthesis	2	Metabolism; Lipid metabolism
ko00120	Primary bile acid biosynthesis	2	Metabolism; Lipid metabolism
ko00140	Steroid hormone biosynthesis	2	Metabolism; Lipid metabolism
ko00561	Glycerolipid metabolism	2	Metabolism; Lipid metabolism
ko00730	Thiamine metabolism	2	Metabolism; Metabolism of cofactors and vitamins
ko00740	Riboflavin metabolism	2	Metabolism; Metabolism of cofactors and vitamins
ko00770	Pantothenate and CoA biosynthesis	2	Metabolism; Metabolism of cofactors and vitamins
ko00790	Folate biosynthesis	2	Metabolism; Metabolism of cofactors and vitamins
ko00860	Porphyrin and chlorophyll metabolism	2	Metabolism; Metabolism of cofactors and vitamins
ko00410	$\beta$ -Alanine metabolism	2	Metabolism; Metabolism of other amino acids
ko01212	Fatty acid metabolism	2	Metabolism; Overview
ko01220	Degradation of aromatic compounds	2	Metabolism; Overview
ko00984	Steroid degradation	2	Metabolism; Xenobiotics biodegradation and metabolism
ko04973	Carbohydrate digestion and absorption	2	Organismal Systems; Digestive system
ko04913	Ovarian steroidogenesis	2	Organismal Systems; Endocrine system
ko04917	Prolactin signaling pathway	2	Organismal Systems; Endocrine system
ko04611	Platelet activation	2	Organismal Systems; Immune system
ko04723	Retrograde endocannabinoid signaling	2	Organismal Systems; Nervous system
ko04066	HIF-1 signaling pathway	1	Environmental Information Processing; Signal transduction

ko04070	Phosphatidylinositol signaling system	1	Environmental Information Processing; Signal transduction
ko04071	Sphingolipid signaling pathway	1	Environmental Information Processing; Signal transduction
ko04340	Hedgehog signaling pathway	1	Environmental Information Processing; Signal transduction
ko05215	Prostate cancer	1	Human Diseases; Cancers
ko05217	Basal cell carcinoma	1	Human Diseases; Cancers
ko04931	Insulin resistance	1	Human Diseases; Endocrine and metabolic diseases
ko05320	Autoimmune thyroid disease	1	Human Diseases; Immune diseases
ko05120	Epithelial cell signaling in Helicobacter pylori infection	1	Human Diseases; Infectious diseases
ko05132	Salmonella infection	1	Human Diseases; Infectious diseases
ko05142	Chagas disease (American trypanosomiasis)	1	Human Diseases; Infectious diseases
ko05143	African trypanosomiasis	1	Human Diseases; Infectious diseases
ko05146	Amoebiasis	1	Human Diseases; Infectious diseases
ko05014	Amyotrophic lateral sclerosis (ALS)	1	Human Diseases; Neurodegenerative diseases
ko05030	Cocaine addiction	1	Human Diseases; Substance dependence
ko05031	Amphetamine addiction	1	Human Diseases; Substance dependence
ko00340	Histidine metabolism	1	Metabolism; Amino acid metabolism
ko00311	Penicillin and cephalosporin biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00331	Clavulanic acid biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00332	Carbapenem biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00401	Novobiocin biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00521	Streptomycin biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00901	Indole alkaloid biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00950	Isoquinoline alkaloid biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00965	Betalain biosynthesis	1	Metabolism; Biosynthesis of other secondary metabolites
ko00053	Ascorbate and aldarate metabolism	1	Metabolism; Carbohydrate metabolism
ko00562	Inositol phosphate metabolism	1	Metabolism; Carbohydrate metabolism
ko00550	Peptidoglycan biosynthesis	1	Metabolism; Glycan biosynthesis and metabolism
ko00061	Fatty acid biosynthesis	1	Metabolism; Lipid metabolism

ko00062	Fatty acid elongation	1	Metabolism; Lipid metabolism
ko00073	Cutin, suberine and wax biosynthesis	1	Metabolism; Lipid metabolism
ko00565	Ether lipid metabolism	1	Metabolism; Lipid metabolism
ko00600	Sphingolipid metabolism	1	Metabolism; Lipid metabolism
ko00130	Ubiquinone and other terpenoid-quinone biosynthesis	1	Metabolism; Metabolism of cofactors and vitamins
ko00760	Nicotinate and nicotinamide metabolism	1	Metabolism; Metabolism of cofactors and vitamins
ko00780	Biotin metabolism	1	Metabolism; Metabolism of cofactors and vitamins
ko00830	Retinol metabolism	1	Metabolism; Metabolism of cofactors and vitamins
ko00430	Taurine and hypotaurine metabolism	1	Metabolism; Metabolism of other amino acids
ko00450	Selenocompound metabolism	1	Metabolism; Metabolism of other amino acids
ko00472	D-Arginine and D-Ornithine metabolism	1	Metabolism; Metabolism of other amino acids
ko00473	D-Alanine metabolism	1	Metabolism; Metabolism of other amino acids
ko00909	Sesquiterpenoid and triterpenoid biosynthesis	1	Metabolism; Metabolism of terpenoids and polyketides
ko00981	Insect hormone biosynthesis	1	Metabolism; Metabolism of terpenoids and polyketides
ko01057	Biosynthesis of type II polyketide products	1	Metabolism; Metabolism of terpenoids and polyketides
ko00361	Chlorocyclohexane and chlorobenzene degradation	1	Metabolism; Xenobiotics biodegradation and metabolism
ko00624	Polycyclic aromatic hydrocarbon degradation	1	Metabolism; Xenobiotics biodegradation and metabolism
ko00642	Ethylbenzene degradation	1	Metabolism; Xenobiotics biodegradation and metabolism
ko00643	Styrene degradation	1	Metabolism; Xenobiotics biodegradation and metabolism
ko00791	Atrazine degradation	1	Metabolism; Xenobiotics biodegradation and metabolism
ko04975	Fat digestion and absorption	1	Organismal Systems; Digestive system
ko04919	Thyroid hormone signaling pathway	1	Organismal Systems; Endocrine system
ko04721	Synaptic vesicle cycle	1	Organismal Systems; Nervous system
ko04726	Serotonergic synapse	1	Organismal Systems; Nervous system
ko04727	GABAergic synapse	1	Organismal Systems; Nervous system
ko04728	Dopaminergic synapse	1	Organismal Systems; Nervous system
ko04742	Taste transduction	1	Organismal Systems; Sensory system
ko04744	Phototransduction	1	Organismal Systems; Sensory system

