

Supplementary information, Table S2 Primary Categorization of KEGG pathways.

Developmental signaling pathways		Cancers pathways	
mmu04630	Jak-STAT signaling pathway	mmu05223	Non-small cell lung cancer
mmu04540	Gap junction	mmu05222	Small cell lung cancer
mmu04530	Tight junction	mmu05221	Acute myeloid leukemia
mmu04520	Adherens junction	mmu05220	Chronic myeloid leukemia
mmu04514	Cell adhesion molecules (CAMs)	mmu05219	Bladder cancer
mmu04512	ECM-receptor interaction	mmu05218	Melanoma
mmu04510	Focal adhesion	mmu05217	Basal cell carcinoma
mmu04370	VEGF signaling pathway	mmu05216	Thyroid cancer
mmu04360	Axon guidance	mmu05215	Prostate cancer
mmu04350	TGF-beta signaling pathway	mmu05214	Glioma
mmu04340	Hedgehog signaling pathway	mmu05213	Endometrial cancer
mmu04330	Notch signaling pathway	mmu05212	Pancreatic cancer
mmu04320	Dorso-ventral axis formation	mmu05211	Renal cell carcinoma
mmu04310	Wnt signaling pathway	mmu05210	Colorectal cancer
mmu04210	Apoptosis		
mmu04150	mTOR signaling pathway		
mmu04115	p53 signaling pathway		
mmu04110	Cell cycle		
mmu04080	Neuroactive ligand-receptor interaction		
mmu04070	Phosphatidylinositol signaling system		
mmu04060	Cytokine-cytokine receptor interaction		
mmu04020	Calcium signaling pathway		
mmu04012	ErbB signaling pathway		
mmu04010	MAPK signaling pathway		
mmu03320	PPAR signaling pathway		
Metabolism		Others	
mmu01040	Polyunsaturated fatty acid biosynthesis	mmu05060	Prion diseases
mmu01032	Glycan structures - degradation	mmu05050	Dentatorubropallidoluysian atrophy (DRPLA)
mmu01031	Glycan structures - biosynthesis 2	mmu05040	Huntington's disease
mmu01030	Glycan structures - biosynthesis 1	mmu05030	Amyotrophic lateral sclerosis (ALS)
mmu00980	Metabolism of xenobiotics by cytochrome P450	mmu05020	Parkinson's disease
mmu00960	Alkaloid biosynthesis II	mmu05010	Alzheimer's disease
mmu00950	Alkaloid biosynthesis I	mmu04950	Maturity onset diabetes of the young
mmu00940	Phenylpropanoid biosynthesis	mmu04940	Type I diabetes mellitus
mmu00930	Caprolactam degradation	mmu04930	Type II diabetes mellitus
mmu00920	Sulfur metabolism	mmu04920	Adipocytokine signaling pathway
mmu00910	Nitrogen metabolism	mmu04916	Melanogenesis
mmu00903	Limonene and pinene degradation	mmu04912	GnRH signaling pathway
mmu00900	Terpenoid biosynthesis	mmu04910	Insulin signaling pathway
mmu00860	Porphyrin and chlorophyll metabolism	mmu04810	Regulation of actin cytoskeleton
mmu00830	Retinol metabolism	mmu04742	Taste transduction

mmu00791	Atrazine degradation	mmu04740	Olfactory transduction
mmu00790	Folate biosynthesis	mmu04730	Long-term depression
mmu00785	Lipoic acid metabolism	mmu04720	Long-term potentiation
mmu00780	Biotin metabolism	mmu04710	Circadian rhythm
mmu00770	Pantothenate and CoA biosynthesis	mmu04670	Leukocyte transendothelial migration
mmu00760	Nicotinate and nicotinamide metabolism	mmu04664	Fc epsilon RI signaling pathway
mmu00750	Vitamin B6 metabolism	mmu04662	B cell receptor signaling pathway
mmu00740	Riboflavin metabolism	mmu04660	T cell receptor signaling pathway
mmu00730	Thiamine metabolism	mmu04650	Natural killer cell mediated cytotoxicity
mmu00720	Reductive carboxylate cycle (CO2 fixation)	mmu04640	Hematopoietic cell lineage
mmu00710	Carbon fixation	mmu04620	Toll-like receptor signaling pathway
mmu00680	Methane metabolism	mmu04614	Renin-angiotensin system
mmu00670	One carbon pool by folate	mmu04612	Antigen processing and presentation
mmu00660	C5-Branched dibasic acid metabolism	mmu04610	Complement and coagulation cascades
mmu00650	Butanoate metabolism	mmu04140	Regulation of autophagy
mmu00643	Styrene degradation	mmu04130	SNARE interactions in vesicular transport
mmu00642	Ethylbenzene degradation	mmu03060	Protein export
mmu00641	3-Chloroacrylic acid degradation	mmu03050	Proteasome
mmu00640	Propanoate metabolism	mmu03030	DNA polymerase
mmu00632	Benzoate degradation via CoA ligation	mmu03022	Basal transcription factors
mmu00630	Glyoxylate and dicarboxylate metabolism	mmu03020	RNA polymerase
mmu00626	Naphthalene and anthracene degradation	mmu03010	Ribosome
mmu00625	Tetrachloroethene degradation	mmu02010	ABC transporters
mmu00624	1- and 2-Methylnaphthalene degradation	mmu00970	Aminoacyl-tRNA biosynthesis
mmu00620	Pyruvate metabolism		
mmu00604	Glycosphingolipid biosynthesis - ganglioseries		
mmu00603	Glycosphingolipid biosynthesis - globoseries		
mmu00602	Glycosphingolipid biosynthesis - neo-lactoseries		
mmu00601	Glycosphingolipid biosynthesis - lactoseries		
mmu00600	Sphingolipid metabolism		
mmu00592	alpha-Linolenic acid metabolism		
mmu00591	Linoleic acid metabolism		
mmu00590	Arachidonic acid metabolism		
mmu00565	Ether lipid metabolism		
mmu00564	Glycerophospholipid metabolism		
mmu00563	Glycosylphosphatidylinositol(GPI)-anch or biosynthesis		
mmu00562	Inositol phosphate metabolism		

mmu00561	Glycerolipid metabolism
mmu00550	Peptidoglycan biosynthesis
mmu00534	Heparan sulfate biosynthesis
mmu00533	Keratan sulfate biosynthesis
mmu00532	Chondroitin sulfate biosynthesis
mmu00531	Glycosaminoglycan degradation
mmu00530	Aminosugars metabolism
mmu00521	Streptomycin biosynthesis
mmu00520	Nucleotide sugars metabolism
mmu00512	O-Glycan biosynthesis
mmu00511	N-Glycan degradation
mmu00510	N-Glycan biosynthesis
mmu00500	Starch and sucrose metabolism
mmu00480	Glutathione metabolism
mmu00472	D-Arginine and D-ornithine metabolism
mmu00471	D-Glutamine and D-glutamate metabolism
mmu00460	Cyanoamino acid metabolism
mmu00450	Selenoamino acid metabolism
mmu00440	Aminophosphonate metabolism
mmu00430	Taurine and hypotaurine metabolism
mmu00410	beta-Alanine metabolism
mmu00401	Novobiocin biosynthesis
mmu00400	Phenylalanine, tyrosine and tryptophan biosynthesis
mmu00380	Tryptophan metabolism
mmu00363	Bisphenol A degradation
mmu00361	gamma-Hexachlorocyclohexane degradation
mmu00360	Phenylalanine metabolism
mmu00350	Tyrosine metabolism
mmu00340	Histidine metabolism
mmu00330	Arginine and proline metabolism
mmu00310	Lysine degradation
mmu00300	Lysine biosynthesis
mmu00290	Valine, leucine and isoleucine biosynthesis
mmu00281	Geraniol degradation
mmu00280	Valine, leucine and isoleucine degradation
mmu00272	Cysteine metabolism
mmu00271	Methionine metabolism
mmu00260	Glycine, serine and threonine metabolism
mmu00252	Alanine and aspartate metabolism
mmu00251	Glutamate metabolism

mmu00240	Pyrimidine metabolism	
mmu00232	Caffeine metabolism	
mmu00230	Purine metabolism	
mmu00220	Urea cycle and metabolism of amino groups	
mmu00190	Oxidative phosphorylation	
mmu00150	Androgen and estrogen metabolism	
mmu00140	C21-Steroid hormone metabolism	
mmu00130	Ubiquinone biosynthesis	
mmu00120	Bile acid biosynthesis	
mmu00100	Biosynthesis of steroids	
mmu00072	Synthesis and degradation of ketone bodies	
mmu00071	Fatty acid metabolism	
mmu00062	Fatty acid elongation in mitochondria	
mmu00061	Fatty acid biosynthesis	
mmu00053	Ascorbate and aldarate metabolism	
mmu00052	Galactose metabolism	
mmu00051	Fructose and mannose metabolism	
mmu00040	Pentose and glucuronate interconversions	
mmu00031	Inositol metabolism	
mmu00030	Pentose phosphate pathway	
mmu00020	Citrate cycle (TCA cycle)	
mmu00010	Glycolysis / Gluconeogenesis	