

KEGG_A_class

Metabolism
Human Diseases
Human Diseases
Organismal Systems
Human Diseases
Human Diseases
Human Diseases
Organismal Systems
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Metabolism
Human Diseases
Organismal Systems
Environmental Information Processing
Environmental Information Processing
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Organismal Systems
Environmental Information Processing
Human Diseases
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Environmental Information Processing
Environmental Information Processing
Human Diseases
Organismal Systems
Human Diseases
Environmental Information Processing
Metabolism
Environmental Information Processing
Cellular Processes
Organismal Systems
Human Diseases
Human Diseases
Human Diseases
Metabolism
Human Diseases
Human Diseases
Organismal Systems
Environmental Information Processing
Human Diseases
Human Diseases
Metabolism

KEGG_B_class

Lipid metabolism
Cardiovascular diseases
Cancers
Nervous system
Cancers
Cancers
Cancers
Immune system
Endocrine system
Lipid metabolism
Endocrine and metabolic diseases
Endocrine system
Signal transduction
Signal transduction
Amino acid metabolism
Amino acid metabolism
Signal transduction
Immune system
Signal transduction
Cancers
Drug resistance
Infectious diseases
Global and overview maps
Metabolism of cofactors and vitamins
Xenobiotics biodegradation and met
Cardiovascular diseases
Cancers
Endocrine system
Endocrine system
Infectious diseases
Endocrine system
Immune diseases
Neurodegenerative diseases
Cancers
Endocrine system
Endocrine system
Signal transduction
Signal transduction
Cancers
Endocrine system
Infectious diseases
Signaling molecules and interaction
Lipid metabolism
Signal transduction
Cellular community - eukaryotes
Digestive system
Infectious diseases
Infectious diseases
Infectious diseases
Xenobiotics biodegradation and met
Infectious diseases
Infectious diseases
Immune system
Signal transduction
Cardiovascular diseases
Cancers
Amino acid metabolism

Human Diseases	Infectious diseases
Human Diseases	Infectious diseases
Human Diseases	Cancers
Organismal Systems	Excretory system
Human Diseases	Endocrine and metabolic diseases
Cellular Processes	Cell motility
Environmental Information Processing	Signal transduction
Human Diseases	Infectious diseases
Human Diseases	Cancers
Metabolism	Lipid metabolism
Human Diseases	Cancers
Cellular Processes	Cell growth and death
Cellular Processes	Transport and catabolism
Organismal Systems	Endocrine system
Organismal Systems	Endocrine system
Human Diseases	Cardiovascular diseases
Human Diseases	Cancers
Human Diseases	Infectious diseases
Human Diseases	Cancers
Human Diseases	Infectious diseases
Human Diseases	Cancers
Organismal Systems	Immune system
Metabolism	Glycan biosynthesis and metabolism
Human Diseases	Drug resistance
Metabolism	Xenobiotics biodegradation and metabolism
Organismal Systems	Immune system
Organismal Systems	Endocrine system
Human Diseases	Infectious diseases
Organismal Systems	Development
Cellular Processes	Transport and catabolism
Metabolism	Metabolism of terpenoids and polyketides
Environmental Information Processing	Signaling molecules and interaction
Cellular Processes	Transport and catabolism
Organismal Systems	Digestive system
Metabolism	Amino acid metabolism
Organismal Systems	Aging
Environmental Information Processing	Signal transduction
Organismal Systems	Endocrine system
Environmental Information Processing	Signal transduction
Organismal Systems	Immune system
Organismal Systems	Immune system
Organismal Systems	Endocrine system
Metabolism	Carbohydrate metabolism
Metabolism	Carbohydrate metabolism
Metabolism	Metabolism of other amino acids
Organismal Systems	Immune system
Genetic Information Processing	Replication and repair
Organismal Systems	Circulatory system
Environmental Information Processing	Signal transduction
Metabolism	Carbohydrate metabolism
Environmental Information Processing	Signal transduction
Human Diseases	Drug resistance
Cellular Processes	Cell growth and death
Metabolism	Carbohydrate metabolism
Human Diseases	Immune diseases
Metabolism	Lipid metabolism
Cellular Processes	Cell growth and death
Organismal Systems	Circulatory system

Human Diseases	Infectious diseases
Organismal Systems	Digestive system
Environmental Information Processing	Signal transduction
Metabolism	Amino acid metabolism
Organismal Systems	Digestive system
Human Diseases	Endocrine and metabolic diseases
Metabolism	Lipid metabolism
Human Diseases	Endocrine and metabolic diseases
Human Diseases	Cancers
Metabolism	Metabolism of other amino acids
Organismal Systems	Nervous system
Environmental Information Processing	Membrane transport
Human Diseases	Cancers
Metabolism	Amino acid metabolism
Human Diseases	Cancers
Human Diseases	Neurodegenerative diseases
Metabolism	Carbohydrate metabolism
Human Diseases	Infectious diseases
Human Diseases	Cancers
Human Diseases	Cancers
Human Diseases	Drug resistance
Organismal Systems	Endocrine system
Human Diseases	Cancers
Organismal Systems	Digestive system
Organismal Systems	Immune system
Human Diseases	Cancers
Human Diseases	Neurodegenerative diseases
Human Diseases	Cancers
Environmental Information Processing	Signal transduction
Human Diseases	Infectious diseases
Organismal Systems	Endocrine system
Environmental Information Processing	Signal transduction
Human Diseases	Infectious diseases
Cellular Processes	Cellular community - eukaryotes
Organismal Systems	Environmental adaptation
Organismal Systems	Sensory system
Human Diseases	Substance dependence
Organismal Systems	Endocrine system
Human Diseases	Cancers
Human Diseases	Cancers
Human Diseases	Immune diseases
Organismal Systems	Immune system
Metabolism	Global and overview maps
Organismal Systems	Sensory system
Human Diseases	Infectious diseases
Organismal Systems	Nervous system
Cellular Processes	Cell growth and death
Cellular Processes	Transport and catabolism
Cellular Processes	Transport and catabolism
Cellular Processes	Cell growth and death
Human Diseases	Immune diseases
Environmental Information Processing	Signaling molecules and interaction
Environmental Information Processing	Signal transduction
Human Diseases	Infectious diseases
Environmental Information Processing	Signal transduction
Human Diseases	Endocrine and metabolic diseases
Organismal Systems	Nervous system
Human Diseases	Endocrine and metabolic diseases

Environmental Information Processing
Cellular Processes
Organismal Systems
Metabolism
Organismal Systems
Organismal Systems
Human Diseases
Organismal Systems
Cellular Processes
Human Diseases
Human Diseases
Organismal Systems
Organismal Systems

Signal transduction
Cell growth and death
Immune system
Nucleotide metabolism
Immune system
Immune system
Immune diseases
Environmental adaptation
Transport and catabolism
Infectious diseases
Immune diseases
Immune system
Immune system

Pathway	out (55)	All (8514)	Pvalue	Qvalue
Arachidonic acid metabolism	9	70	4.76E-10	8.85E-08
Fluid shear stress and atherosclerosis	9	149	3.87E-07	3.60E-05
Proteoglycans in cancer	10	210	7.47E-07	4.63E-05
Serotonergic synapse	8	125	1.18E-06	4.66E-05
Pathways in cancer	15	550	1.25E-06	4.66E-05
Bladder cancer	5	43	7.46E-06	2.31E-04
Chemical carcinogenesis	6	90	2.26E-05	5.40E-04
Platelet activation	7	135	2.32E-05	5.40E-04
Relaxin signaling pathway	7	138	2.68E-05	5.53E-04
Linoleic acid metabolism	4	30	3.77E-05	7.01E-04
AGE-RAGE signaling pathway in diabetes	6	114	8.58E-05	1.45E-03
PPAR signaling pathway	5	79	0.00014651	2.27E-03
Calcium signaling pathway	7	189	0.00019588	2.80E-03
Apelin signaling pathway	6	141	0.00027586	3.63E-03
Arginine and proline metabolism	4	51	0.00031097	3.63E-03
Arginine biosynthesis	3	21	0.00031246	3.63E-03
HIF-1 signaling pathway	5	102	0.00048386	5.29E-03
IL-17 signaling pathway	5	106	0.00057732	5.97E-03
VEGF signaling pathway	4	61	0.00061908	6.06E-03
MicroRNAs in cancer	6	168	0.00070292	6.54E-03
Endocrine resistance	5	116	0.00087017	7.36E-03
Chagas disease (American trypanosomiasis)	5	116	0.00087017	7.36E-03
Metabolic pathways	19	1416	0.00093118	7.53E-03
Retinol metabolism	4	75	0.00134873	1.05E-02
Drug metabolism - cytochrome P450	4	83	0.00196286	1.46E-02
Hypertrophic cardiomyopathy (HCM)	4	92	0.00285943	2.05E-02
Small cell lung cancer	4	100	0.00386306	2.66E-02
Ovarian Steroidogenesis	3	51	0.004267	2.83E-02
Estrogen signaling pathway	5	171	0.00476682	3.06E-02
Malaria	3	55	0.00527872	3.27E-02
Regulation of lipolysis in adipocyte	3	56	0.00555225	3.33E-02
Rheumatoid arthritis	5	188	0.00708759	4.12E-02
Amyotrophic lateral sclerosis (ALS)	3	63	0.0077055	4.34E-02
Transcriptional misregulation in cancer	5	195	0.00824075	4.51E-02
Renin secretion	3	67	0.00912859	4.63E-02
Renin-angiotensin system	2	23	0.00950364	4.63E-02
TNF signaling pathway	4	130	0.00970641	4.63E-02
PI3K-Akt signaling pathway	7	374	0.00982454	4.63E-02
Central carbon metabolism in cancer	3	69	0.00989404	4.63E-02
Thyroid hormone signaling pathway	4	131	0.00996485	4.63E-02
Toxoplasmosis	5	207	0.01051179	4.77E-02
Neuroactive ligand-receptor interactions	6	293	0.01110419	4.78E-02
Steroid hormone biosynthesis	3	72	0.0111106	4.78E-02
Rap1 signaling pathway	5	211	0.01135585	4.78E-02
Focal adhesion	5	212	0.01157392	4.78E-02
Bile secretion	3	75	0.01241013	5.02E-02
Human cytomegalovirus infection	6	307	0.01374834	5.44E-02
Human papillomavirus infection	7	416	0.01690157	6.55E-02
Leishmaniasis	4	155	0.0175636	6.67E-02
Metabolism of xenobiotics by cytochrome P450	3	87	0.01845395	6.86E-02
Kaposi sarcoma-associated herpesvirus infection	5	241	0.01920565	6.98E-02
Hepatitis B	4	160	0.01950141	6.98E-02
Complement and coagulation cascades	3	97	0.02454056	8.50E-02
cGMP - PKG signaling pathway	4	172	0.02467876	8.50E-02
Dilated cardiomyopathy (DCM)	3	100	0.02655391	8.98E-02
Prostate cancer	3	101	0.02724424	9.05E-02
Tryptophan metabolism	2	42	0.02991616	9.59E-02

African trypanosomiasis	2	42	0.02991616	9.59E-02
Amoebiasis	3	106	0.03083959	9.69E-02
Thyroid cancer	2	43	0.03124756	9.69E-02
Endocrine and other factor-regulated	2	50	0.04119722	1.26E-01
Insulin resistance	3	122	0.0439372	1.32E-01
Regulation of actin cytoskeleton	4	218	0.05172375	1.53E-01
Sphingolipid signaling pathway	3	132	0.05332639	1.55E-01
Hepatitis C	3	144	0.06576419	1.88E-01
Acute myeloid leukemia	2	68	0.07121936	2.01E-01
Glycerolipid metabolism	2	71	0.07675671	2.10E-01
Renal cell carcinoma	2	71	0.07675671	2.10E-01
p53 signaling pathway	2	73	0.08052239	2.10E-01
Mitophagy - animal	2	73	0.08052239	2.10E-01
Oxytocin signaling pathway	3	158	0.08180415	2.10E-01
Prolactin signaling pathway	2	74	0.08242669	2.10E-01
Arrhythmogenic right ventricular card	2	74	0.08242669	2.10E-01
Gastric cancer	3	161	0.08544472	2.10E-01
Tuberculosis	4	259	0.08554679	2.10E-01
Breast cancer	3	162	0.08667363	2.10E-01
Legionellosis	2	77	0.08822236	2.10E-01
Pancreatic cancer	2	77	0.08822236	2.10E-01
Fc epsilon RI signaling pathway	2	79	0.09215264	2.16E-01
Glycosphingolipid biosynthesis - glob	1	15	0.09271063	2.16E-01
EGFR tyrosine kinase inhibitor resist	2	82	0.09814294	2.25E-01
Drug metabolism - other enzymes	2	84	0.102197	2.32E-01
Hematopoietic cell lineage	3	176	0.1046552	2.35E-01
Adipocytokine signaling pathway	2	87	0.1083641	2.40E-01
Pertussis	2	92	0.1188575	2.59E-01
Osteoclast differentiation	3	187	0.1197395	2.59E-01
Peroxisome	2	94	0.123125	2.63E-01
Terpenoid backbone biosynthesis	1	21	0.1273839	2.69E-01
ECM-receptor interaction	2	98	0.131771	2.75E-01
Phagosome	4	305	0.1335531	2.76E-01
Salivary secretion	2	100	0.1361463	2.78E-01
Histidine metabolism	1	24	0.1442293	2.92E-01
Longevity regulating pathway - mamr	2	105	0.1472246	2.94E-01
cAMP signaling pathway	3	208	0.1505975	2.97E-01
Aldosterone synthesis and secretion	2	107	0.1517081	2.97E-01
MAPK signaling pathway	4	332	0.1659875	3.22E-01
C-type lectin receptor signaling pathv	2	116	0.1722046	3.28E-01
Leukocyte transendothelial migration	2	117	0.174511	3.28E-01
Parathyroid hormone synthesis, secr	2	117	0.174511	3.28E-01
Ascorbate and aldarate metabolism	1	30	0.1769679	3.29E-01
Pentose phosphate pathway	1	31	0.1823035	3.32E-01
beta-Alanine metabolism	1	31	0.1823035	3.32E-01
Toll-like receptor signaling pathway	2	122	0.1861178	3.36E-01
Base excision repair	1	33	0.1928729	3.42E-01
Vascular smooth muscle contraction	2	125	0.1931362	3.42E-01
NF-kappa B signaling pathway	2	127	0.1978353	3.44E-01
Galactose metabolism	1	34	0.1981072	3.44E-01
AMPK signaling pathway	2	129	0.2025491	3.49E-01
Antifolate resistance	1	40	0.2288202	3.87E-01
Ferroptosis	1	40	0.2288202	3.87E-01
Pyruvate metabolism	1	42	0.2387989	4.00E-01
Inflammatory bowel disease (IBD)	2	145	0.2406597	4.00E-01
Fatty acid degradation	1	44	0.2486508	4.09E-01
Apoptosis	2	153	0.2598775	4.24E-01
Adrenergic signaling in cardiomyocyt	2	154	0.262283	4.24E-01

Measles	2	155	0.2646888	4.24E-01
Fat digestion and absorption	1	49	0.2727361	4.32E-01
Wnt signaling pathway	2	159	0.274314	4.32E-01
Valine, leucine and isoleucine degrac	1	50	0.2774613	4.34E-01
Mineral absorption	1	55	0.3006393	4.66E-01
Type II diabetes mellitus	1	56	0.3051865	4.69E-01
Sphingolipid metabolism	1	57	0.3097047	4.72E-01
Non-alcoholic fatty liver disease (NAF	2	178	0.3199046	4.76E-01
Hepatocellular carcinoma	2	178	0.3199046	4.76E-01
Glutathione metabolism	1	60	0.3230869	4.76E-01
Long-term depression	1	60	0.3230869	4.76E-01
ABC transporters	1	61	0.3274907	4.76E-01
Endometrial cancer	1	61	0.3274907	4.76E-01
Lysine degradation	1	65	0.3448266	4.93E-01
Basal cell carcinoma	1	65	0.3448266	4.93E-01
Alzheimer disease	2	199	0.3695408	5.25E-01
Glycolysis / Gluconeogenesis	1	72	0.3741147	5.26E-01
Herpes simplex infection	3	341	0.3792807	5.26E-01
Non-small cell lung cancer	1	74	0.3822439	5.26E-01
Glioma	1	75	0.3862696	5.26E-01
Platinum drug resistance	1	76	0.3902695	5.26E-01
Cortisol synthesis and secretion	1	76	0.3902695	5.26E-01
Melanoma	1	76	0.3902695	5.26E-01
Gastric acid secretion	1	77	0.3942438	5.28E-01
RIG-I-like receptor signaling pathway	1	79	0.4021162	5.30E-01
Chronic myeloid leukemia	1	79	0.4021162	5.30E-01
Huntington disease	2	217	0.4110038	5.38E-01
Colorectal cancer	1	88	0.436317	5.68E-01
TGF-beta signaling pathway	1	92	0.4508936	5.82E-01
HTLV-I infection	3	386	0.4578439	5.87E-01
GnRH signaling pathway	1	96	0.4651	5.89E-01
Ras signaling pathway	2	243	0.4685238	5.89E-01
Salmonella infection	1	97	0.4685949	5.89E-01
Gap junction	1	98	0.4720673	5.89E-01
Circadian entrainment	1	99	0.4755174	5.90E-01
Inflammatory mediator regulation of τ	1	101	0.4823514	5.90E-01
Morphine addiction	1	101	0.4823514	5.90E-01
Glucagon signaling pathway	1	107	0.502333	6.11E-01
Viral carcinogenesis	2	262	0.5084754	6.11E-01
Choline metabolism in cancer	1	109	0.5088237	6.11E-01
Asthma	1	110	0.5120379	6.11E-01
T cell receptor signaling pathway	1	114	0.5246891	6.22E-01
Carbon metabolism	1	117	0.5339657	6.25E-01
Taste transduction	1	117	0.5339657	6.25E-01
Influenza A	2	277	0.5386538	6.26E-01
Neurotrophin signaling pathway	1	124	0.5549253	6.41E-01
Cell cycle	1	129	0.5693269	6.54E-01
Autophagy - animal	1	133	0.5805179	6.62E-01
Lysosome	1	139	0.5967711	6.77E-01
Cellular senescence	2	328	0.6317131	7.06E-01
Allograft rejection	1	154	0.6347474	7.06E-01
Cytokine-cytokine receptor interactio	2	330	0.6350565	7.06E-01
Phospholipase D signaling pathway	1	157	0.6419099	7.06E-01
Staphylococcus aureus infection	1	157	0.6419099	7.06E-01
Hippo signaling pathway	1	159	0.646608	7.07E-01
Type I diabetes mellitus	1	166	0.6625799	7.19E-01
Retrograde endocannabinoid signalir	1	168	0.6670117	7.19E-01
Cushing syndrome	1	169	0.6692061	7.19E-01

mTOR signaling pathway	1	172	0.6757044	7.22E-01
Necroptosis	1	176	0.6841742	7.27E-01
Th17 cell differentiation	1	186	0.70441	7.44E-01
Purine metabolism	1	189	0.7102285	7.46E-01
NOD-like receptor signaling pathway	1	193	0.7178119	7.50E-01
Chemokine signaling pathway	1	207	0.7428507	7.72E-01
Systemic lupus erythematosus	1	226	0.7733735	7.99E-01
Thermogenesis	1	251	0.8081707	8.30E-01
Endocytosis	1	305	0.866406	8.84E-01
Epstein-Barr virus infection	1	309	0.8699512	8.84E-01
Graft-versus-host disease	1	314	0.8742529	8.84E-01
Natural killer cell mediated cytotoxicit	1	523	0.9697495	9.72E-01
Antigen processing and presentation	1	536	0.9723491	9.72E-01

Pathway ID	Genes	K_IDs
ko00590	ENSG00000059377;ENSG000000073	K01832+K11987+K00509+K01254+K01254
ko05418	ENSG00000005961;ENSG000000087	K06476+K01398+K01403+K05448+K05448
ko05205	ENSG000000087245;ENSG000000091	K01398+K08550+K08268+K01403+K01403
ko04726	ENSG000000073756;ENSG000000091	K11987+K00509+K04157+K05037+K05037
ko05200	ENSG00000005961;ENSG000000073	K06476+K13241+K11987+K01398+K01398
ko05219	ENSG000000087245;ENSG000001000	K01398+K01403+K05448+K04451+K04451
ko05204	ENSG000000073756;ENSG000001381	K11987+K17719+K17718+K07408+K07408
ko04611	ENSG00000005961;ENSG000000059	K06476+K01832+K00907+K00509+K00509
ko04926	ENSG00000007171;ENSG000000087	K13241+K01398+K13240+K01403+K01403
ko00591	ENSG00000138109;ENSG000001381	K17719+K17718+K17689+K17721K17721
ko04933	ENSG000000087245;ENSG000001000	K01398+K03982+K05448+K04166+K04166
ko03320	ENSG00000112033;ENSG000001381	K04504+K08530+K08751+K07294+K07294
ko04020	ENSG00000007171;ENSG000000065	K13241+K00907+K13240+K04157+K04157
ko04371	ENSG00000007171;ENSG000000065	K13241+K00907+K13240+K03982+K03982
ko00330	ENSG00000007171;ENSG000000089	K13241+K13240+K00128+K13242K13242
ko00220	ENSG00000007171;ENSG000000089	K13241+K13240+K13242K13242
ko04066	ENSG00000007171;ENSG000001000	K13241+K08268+K03982+K05448+K05448
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ko05206	ENSG000000073756;ENSG000000089	K11987+K05658+K01403+K05448+K05448
ko01522	ENSG000000087245;ENSG000000091	K01398+K08550+K01403+K08551+K08551
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ko04913	ENSG000000073756;ENSG000001400	K11987+K07408+K00461K00461
ko04915	ENSG000000087245;ENSG000000091	K01398+K08550+K01403+K08551+K08551
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ko05323	ENSG00000112715;ENSG000001381	K05448+K10159+K01394+K01388+K01388
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ko05202	ENSG00000005381;ENSG000001000	K10789+K01403+K08530+K04451+K04451
ko04924	ENSG00000144891;ENSG000001593	K04166+K01283+K04142K04142
ko04614	ENSG00000144891;ENSG000001593	K04166+K01283K01283
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ko04151	ENSG00000005961;ENSG000001120	K06476+K05448+K05098+K10159+K10159
ko05230	ENSG00000100644;ENSG000001410	K08268+K04451+K00036K00036
ko04919	ENSG000000091831;ENSG000001000	K08550+K08268+K04451+K06493K06493
ko05145	ENSG00000007171;ENSG000001381	K13241+K10159+K04180+K03156+K03156
ko04080	ENSG00000102468;ENSG000001200	K04157+K01315+K04166+K04142+K04142
ko00140	ENSG00000140465;ENSG000001600	K07408+K17689+K07433K07433
ko04015	ENSG00000005961;ENSG000001120	K06476+K05448+K05098+K04270+K04270
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ko04976	ENSG000000085563;ENSG000001120	K05658+K00021+K17689K17689
ko05163	ENSG000000073756;ENSG000001120	K11987+K05448+K04451+K04180+K04180
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ko05140	ENSG00000007171;ENSG000000073	K13241+K11987+K10159+K03156K03156
ko00980	ENSG00000138109;ENSG000001400	K17719+K07408+K17689K17689
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ko05161	ENSG00000100985;ENSG000001381	K01403+K10159+K04451+K03156K03156
ko04610	ENSG00000106366;ENSG000001200	K03982+K01315+K01313K01313
ko04022	ENSG00000065534;ENSG000001410	K00907+K04166+K13242+K04142K04142
ko05414	ENSG00000005961;ENSG000002200	K06476+K03156+K06493K06493
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ko05216 ENSG00000132170;ENSG00000141K08530+K04451
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ko04927	ENSG00000144891	K04166
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ko05210	ENSG00000141510	K04451
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