

Significant pathways

path_id	path_name	path_diffge ne_count	path_gene _count	enrichment	pvalue	FDR	-lg(P)
04020	Calcium signaling pathway	15	183	7.800565291	5.25396E-09	1.30298E-06	8.279513421
04015	Rap1 signaling pathway	15	213	6.701894123	4.17511E-08	5.17714E-06	7.379331614
04024	cAMP signaling pathway	14	197	6.763129704	1.14762E-07	9.48701E-06	6.940200964
04723	Retrograde endocannabinoid signaling	12	150	7.613351724	3.05362E-07	1.89324E-05	6.515185086
04140	Autophagy - animal	11	130	8.052583554	6.0018E-07	2.97689E-05	6.221718251
04728	Dopaminergic synapse	11	134	7.812207926	8.17354E-07	3.3784E-05	6.087589708
05010	Alzheimer's disease	12	175	6.525730049	1.63508E-06	5.79285E-05	5.786461121
04080	Neuroactive ligand-receptor interaction	15	285	5.008784029	1.87463E-06	5.81136E-05	5.727083589
05224	Breast cancer	11	151	6.932687828	2.71827E-06	6.98504E-05	5.56570772
04150	mTOR signaling pathway	11	153	6.842064458	3.0982E-06	6.98504E-05	5.508889911
04921	Oxytocin signaling pathway	11	153	6.842064458	3.0982E-06	6.98504E-05	5.508889911
04152	AMPK signaling pathway	10	126	7.552928298	3.983E-06	7.7112E-05	5.399789846
04713	Circadian entrainment	9	98	8.73981703	4.07208E-06	7.7112E-05	5.390183598
04151	PI3K-Akt signaling pathway	16	346	4.400781343	4.3531E-06	7.7112E-05	5.361201488
04730	Long-term depression	7	61	10.92079141	1.46612E-05	0.000217791	4.833830168
05033	Nicotine addiction	6	40	14.27503448	1.49374E-05	0.000217791	4.82572605
04310	Wnt signaling pathway	10	146	6.518280586	1.51657E-05	0.000217791	4.819137091
04721	Synaptic vesicle cycle	7	62	10.74464961	1.63778E-05	0.000217791	4.785744124
04114	Oocyte meiosis	9	116	7.383638526	1.66856E-05	0.000217791	4.777658391
05200	Pathways in cancer	16	394	3.864645545	2.2895E-05	0.000277383	4.640259616
05165	Human papillomavirus infection	15	350	4.078581281	2.34881E-05	0.000277383	4.629151879
04726	Serotonergic synapse	9	132	6.488652038	4.78608E-05	0.000539521	4.32002032
05205	Proteoglycans in cancer	11	206	5.081727486	5.45443E-05	0.00058813	4.263250307
04371	Apelin signaling pathway	9	139	6.161885388	7.24393E-05	0.000748539	4.140025871
04261	Adrenergic signaling in cardiomyocytes	9	147	5.826544687	0.000112945	0.001120419	3.947131261
05032	Morphine addiction	7	92	7.24095952	0.000222326	0.002026397	3.653009683
04510	Focal adhesion	10	199	4.782256108	0.000222689	0.002026397	3.652302104
04750	Inflammatory mediator regulation of TRP chann	8	125	6.090681379	0.000228787	0.002026397	3.640569095

04720	Long-term potentiation	6	67	8.522408646	0.000305442	0.002612055	3.515071363
04022	cGMP-PKG signaling pathway	9	168	5.098226601	0.000319292	0.002639477	3.495812617
05031	Amphetamine addiction	6	68	8.397079108	0.000332042	0.002656337	3.478806891
00190	Oxidative phosphorylation	8	134	5.681605764	0.000373265	0.002892806	3.427982375
00230	Purine metabolism	9	178	4.811809376	0.000495981	0.003727373	3.304534855
04144	Endocytosis	11	270	3.87716986	0.00062589	0.004530361	3.203502083
04931	Insulin resistance	7	109	6.111635558	0.000648633	0.004530361	3.188000896
04330	Notch signaling pathway	5	49	9.710907811	0.000657633	0.004530361	3.182016358
04014	Ras signaling pathway	10	228	4.173986691	0.000682446	0.004574231	3.165931881
05016	Huntington's disease	9	194	4.414959118	0.000944642	0.006165029	3.024732929
04961	Endocrine and other factor-regulated calcium re	5	54	8.811749681	0.00104458	0.006642459	2.981058197
04136	Autophagy - other	4	32	11.89586207	0.001376447	0.008533972	2.861240492
04142	Lysosome	7	124	5.372324805	0.001431673	0.008659875	2.844156179
04010	MAPK signaling pathway	10	252	3.776464149	0.001514478	0.008942633	2.819736964
04211	Longevity regulating pathway	6	90	6.34445977	0.001554603	0.008966081	2.808380564
04530	Tight junction	8	167	4.558893248	0.001677573	0.009455409	2.775318674
01522	Endocrine resistance	6	93	6.139799778	0.001853502	0.010214857	2.732006874
04068	FoxO signaling pathway	7	132	5.046729363	0.002085982	0.011246162	2.680689496
04360	Axon guidance	8	175	4.3504867	0.002285947	0.012062018	2.640933844
05231	Choline metabolism in cancer	6	99	5.7676907	0.00258428	0.013173812	2.587660517
04550	Signaling pathways regulating pluripotency of st	7	137	4.86254216	0.00260289	0.013173812	2.584544144
04910	Insulin signaling pathway	7	141	4.724597701	0.003085444	0.0153038	2.510682381
04072	Phospholipase D signaling pathway	7	147	4.531756979	0.003938958	0.01817786	2.404618681
04520	Adherens junction	5	72	6.608812261	0.003958082	0.01817786	2.402515158
04924	Renin secretion	5	72	6.608812261	0.003958082	0.01817786	2.402515158
05412	Arrhythmogenic right ventricular cardiomyopath	5	72	6.608812261	0.003958082	0.01817786	2.402515158
04962	Vasopressin-regulated water reabsorption	4	43	8.852734563	0.004311692	0.019441813	2.365352225
00532	Glycosaminoglycan biosynthesis - chondroitin s	3	20	14.27503448	0.004610999	0.02042014	2.336204936
05100	Bacterial invasion of epithelial cells	5	76	6.260980036	0.005049998	0.021971922	2.296708775
04390	Hippo signaling pathway	7	154	4.325768025	0.005158255	0.022055986	2.287497205
04724	Glutamatergic synapse	6	114	5.008784029	0.00539015	0.022656901	2.268399165
04722	Neurotrophin signaling pathway	6	121	4.719019664	0.007304801	0.030193175	2.13639164
04071	Sphingolipid signaling pathway	6	122	4.680339175	0.007615544	0.030961556	2.118299066
04611	Platelet activation	6	124	4.604849833	0.008266923	0.031670802	2.082656133
04810	Regulation of actin cytoskeleton	8	214	3.557640993	0.00826917	0.031670802	2.08253807
04350	TGF-beta signaling pathway	5	85	5.598052738	0.008300815	0.031670802	2.080879266
04911	Insulin secretion	5	85	5.598052738	0.008300815	0.031670802	2.080879266
04925	Aldosterone synthesis and secretion	5	86	5.532959102	0.00873814	0.032834222	2.058581011

04658	Th1 and Th2 cell differentiation	5	87	5.469361871	0.009192005	0.034024139	2.036589734
04727	GABAergic synapse	5	88	5.407210031	0.009662773	0.035240702	2.014898222
05414	Dilated cardiomyopathy (DCM)	5	89	5.346454862	0.010150805	0.036484053	1.99349951
04914	Progesterone-mediated oocyte maturation	5	90	5.287049808	0.010656464	0.037222579	1.972386874
04974	Protein digestion and absorption	5	90	5.287049808	0.010656464	0.037222579	1.972386874
04913	Ovarian steroidogenesis	4	58	6.563234245	0.013096127	0.045108882	1.882857125
05418	Fluid shear stress and atherosclerosis	6	142	4.021136474	0.016180948	0.05497089	1.790996051
04916	Melanogenesis	5	100	4.758344828	0.016762305	0.056176373	1.775666267
05012	Parkinson's disease	6	144	3.965287356	0.017318941	0.057267966	1.761478655
05217	Basal cell carcinoma	4	63	6.042342638	0.017645686	0.05758066	1.753361453
04922	Glucagon signaling pathway	5	102	4.665043949	0.018231193	0.058718647	1.739184918
04932	Non-alcoholic fatty liver disease (NAFLD)	6	151	3.781466088	0.021769654	0.069216335	1.662148478
00760	Nicotinate and nicotinamide metabolism	3	35	8.157162562	0.023557051	0.07395125	1.627879072
05143	African trypanosomiasis	3	36	7.930574713	0.025500328	0.079051016	1.59345424
04920	Adipocytokine signaling pathway	4	71	5.361515299	0.026954373	0.082526969	1.569370769
05216	Thyroid cancer	3	37	7.716234856	0.027536372	0.083280734	1.560093285
00562	Inositol phosphate metabolism	4	72	5.287049808	0.028307096	0.08357333	1.548104685
04917	Prolactin signaling pathway	4	72	5.287049808	0.028307096	0.08357333	1.548104685
04971	Gastric acid secretion	4	74	5.14415657	0.031145262	0.089814244	1.506608011
05210	Colorectal cancer	4	74	5.14415657	0.031145262	0.089814244	1.506608011
05212	Pancreatic cancer	4	75	5.075567816	0.032631845	0.093019513	1.486358365
05218	Melanoma	4	76	5.008784029	0.03416417	0.096280844	1.466429122
04260	Cardiac muscle contraction	4	78	4.880353669	0.03733682	0.102970151	1.427497824
04970	Salivary secretion	4	78	4.880353669	0.03733682	0.102970151	1.427497824
00604	Glycosphingolipid biosynthesis - ganglio series	2	15	12.68891954	0.042297199	0.114018535	1.373688395
00730	Thiamine metabolism	2	15	12.68891954	0.042297199	0.114018535	1.373688395
04512	ECM-receptor interaction	4	83	4.58635646	0.046215246	0.123240657	1.335214728
05152	Tuberculosis	6	178	3.207872917	0.046921896	0.123793938	1.32862445
04270	Vascular smooth muscle contraction	5	129	3.688639401	0.04791651	0.124341065	1.319514823
05410	Hypertrophic cardiomyopathy (HCM)	4	84	4.531756979	0.048132025	0.124341065	1.317565865
04012	ErbB signaling pathway	4	85	4.478442191	0.050098998	0.128088161	
04540	Gap junction	4	86	4.426367281	0.052116601	0.131886909	
00450	Selenocompound metabolism	2	17	11.19610548	0.054031143	0.134379436	
05215	Prostate cancer	4	87	4.375489497	0.054185257	0.134379436	
05160	Hepatitis C	5	134	3.551003603	0.055721536	0.135578326	
04742	Taste transduction	4	88	4.325768025	0.056305375	0.135578326	
00600	Sphingolipid metabolism	3	48	5.947931034	0.05630874	0.135578326	
04912	GnRH signaling pathway	4	89	4.27716389	0.058477355	0.139445999	

04657	IL-17 signaling pathway	4	91	4.183160288	0.062978431	0.148749056	
04740	Olfactory transduction	4	1122	0.339275924	0.067904737	0.158871461	
05014	Amyotrophic lateral sclerosis (ALS)	3	52	5.490397878	0.069771433	0.161713227	
03015	mRNA surveillance pathway	4	96	3.965287356	0.075164235	0.171015874	
04915	Estrogen signaling pathway	4	96	3.965287356	0.075164235	0.171015874	
04070	Phosphatidylinositol signaling system	4	98	3.884363125	0.080418627	0.180845125	
04923	Regulation of lipolysis in adipocytes	3	55	5.19092163	0.080942778	0.180845125	
04659	Th17 cell differentiation	4	102	3.732035159	0.091591523	0.202809801	
04972	Pancreatic secretion	4	103	3.695801808	0.094524557	0.207452125	
04066	HIF-1 signaling pathway	4	105	3.625405583	0.100559952	0.218762002	
04060	Cytokine-cytokine receptor interaction	7	271	2.45818552	0.101715189	0.219351015	
04630	Jak-STAT signaling pathway	5	159	2.992669703	0.107524834	0.229880679	
04213	Longevity regulating pathway - multiple species	3	62	4.604849833	0.110606455	0.23444787	
05167	Kaposi's sarcoma-associated herpesvirus infection	6	217	2.631342762	0.111800148	0.234969802	
04725	Cholinergic synapse	4	113	3.368739701	0.126985361	0.263876669	
04141	Protein processing in endoplasmic reticulum	5	167	2.84930828	0.128949067	0.263876669	
00010	Glycolysis / Gluconeogenesis	3	66	4.325768025	0.129810297	0.263876669	
05211	Renal cell carcinoma	3	66	4.325768025	0.129810297	0.263876669	
04621	NOD-like receptor signaling pathway	5	168	2.832348112	0.131800724	0.265744549	
04919	Thyroid hormone signaling pathway	4	115	3.310152924	0.134168295	0.268336589	
04622	RIG-I-like receptor signaling pathway	3	68	4.198539554	0.14002109	0.277801842	
05214	Glioma	3	71	4.021136474	0.156090703	0.307226145	
00030	Pentose phosphate pathway	2	32	5.947931034	0.177748598	0.344387908	
00052	Galactose metabolism	2	32	5.947931034	0.177748598	0.344387908	
04380	Osteoclast differentiation	4	128	2.973965517	0.18653224	0.358604617	
05132	Salmonella infection	3	78	3.660265252	0.197039699	0.375891117	
00051	Fructose and mannose metabolism	2	35	5.438108374	0.20891013	0.390848452	
03410	Base excision repair	2	35	5.438108374	0.20891013	0.390848452	
01521	EGFR tyrosine kinase inhibitor resistance	3	80	3.568758621	0.209608242	0.390848452	
03018	RNA degradation	3	82	3.481715728	0.222554036	0.411891051	
00250	Alanine, aspartate and glutamate metabolism	2	37	5.14415657	0.230679661	0.42376708	
04146	Peroxisome	3	84	3.398817734	0.23587173	0.430119037	
00440	Phosphonate and phosphinate metabolism	1	6	15.86114943	0.245664389	0.444706339	
04975	Fat digestion and absorption	2	40	4.758344828	0.264721576	0.475731529	
04340	Hedgehog signaling pathway	2	44	4.325768025	0.312491226	0.557538303	
05166	HTLV-I infection	6	282	2.024827586	0.315143763	0.558254665	
00740	Riboflavin metabolism	1	8	11.89586207	0.324157242	0.567303171	
04978	Mineral absorption	2	45	4.229639847	0.324826815	0.567303171	

00564	Glycerophospholipid metabolism	3	97	2.943306079	0.331091365	0.574200409	
00380	Tryptophan metabolism	2	46	4.137691154	0.337310472	0.580923591	
04933	AGE-RAGE signaling pathway in diabetic comp	3	100	2.855006897	0.355079124	0.604575962	
04930	Type II diabetes mellitus	2	48	3.965287356	0.36270421	0.604575962	
05030	Cocaine addiction	2	48	3.965287356	0.36270421	0.604575962	
00750	Vitamin B6 metabolism	1	9	10.57409962	0.362786945	0.604575962	
05142	Chagas disease (American trypanosomiasis)	3	101	2.826739502	0.363233139	0.604575962	
05144	Malaria	2	49	3.884363125	0.375605596	0.621001251	
04370	VEGF signaling pathway	2	58	3.281617122	0.497113995	0.811080729	
05213	Endometrial cancer	2	58	3.281617122	0.497113995	0.811080729	
04145	Phagosome	4	182	2.091580144	0.504751016	0.818158509	
04650	Natural killer cell mediated cytotoxicity	3	118	2.41949737	0.512958208	0.826062568	
04218	Cellular senescence	4	186	2.046599926	0.53410173	0.854562768	
00061	Fatty acid biosynthesis	1	14	6.797635468	0.549938651	0.874261446	
05223	Non-small cell lung cancer	2	66	2.88384535	0.611740347	0.966315963	
00603	Glycosphingolipid biosynthesis - globo and isog	1	16	5.947931034	0.622078286	0.976426676	
05034	Alcoholism	4	199	1.912902443	0.634049981	0.987613928	
04926	Relaxin signaling pathway	3	131	2.179394578	0.639688085	0.987613928	
04664	Fc epsilon RI signaling pathway	2	68	2.799026369	0.64115259	0.987613928	
04210	Apoptosis	3	136	2.099269777	0.690746957	1	
04662	B cell receptor signaling pathway	2	72	2.643524904	0.700710817	1	
04918	Thyroid hormone synthesis	2	73	2.607312234	0.71573644	1	
00220	Arginine biosynthesis	1	19	5.008784029	0.727473119	1	
05133	Pertussis	2	75	2.537783908	0.745931651	1	
00531	Glycosaminoglycan degradation	1	21	4.531756979	0.795905501	1	
00360	Phenylalanine metabolism	1	23	4.137691154	0.862908814	1	
00515	Mannose type O-glycan biosynthesis	1	23	4.137691154	0.862908814	1	
00900	Terpenoid backbone biosynthesis	1	23	4.137691154	0.862908814	1	
00534	Glycosaminoglycan biosynthesis - heparan sulfa	1	24	3.965287356	0.895883907	1	
00340	Histidine metabolism	1	25	3.806675862	0.928512861	1	
04666	Fc gamma R-mediated phagocytosis	2	87	2.187744748	0.930074862	1	
04392	Hippo signaling pathway - multiple species	1	26	3.660265252	0.960799302	1	
00601	Glycosphingolipid biosynthesis - lacto and neola	1	27	3.524699872	0.992746823	1	
04950	Maturity onset diabetes of the young	1	27	3.524699872	0.992746823	1	
04966	Collecting duct acid secretion	1	27	3.524699872	0.992746823	1	
05222	Small cell lung cancer	2	92	2.068845577	1	1	
05204	Chemical carcinogenesis	2	93	2.046599926	1	1	
05164	Influenza A	3	168	1.699408867	1	1	

04514	Cell adhesion molecules (CAMs)	3	169	1.689353193	1	1	
03020	RNA polymerase	1	30	3.172229885	1	1	
04620	Toll-like receptor signaling pathway	2	99	1.922563567	1	1	
00640	Propanoate metabolism	1	31	3.069899889	1	1	
00020	Citrate cycle (TCA cycle)	1	32	2.973965517	1	1	
04215	Apoptosis - multiple species	1	32	2.973965517	1	1	
00240	Pyrimidine metabolism	2	101	1.884493001	1	1	
00410	beta-Alanine metabolism	1	33	2.88384535	1	1	
00500	Starch and sucrose metabolism	1	33	2.88384535	1	1	
04660	T cell receptor signaling pathway	2	103	1.847900904	1	1	
04064	NF-kappa B signaling pathway	2	104	1.830132626	1	1	
00040	Pentose and glucuronate interconversions	1	34	2.799026369	1	1	
05146	Amoebiasis	2	106	1.795601822	1	1	
04614	Renin-angiotensin system	1	35	2.719054187	1	1	
05145	Toxoplasmosis	2	108	1.762349936	1	1	
04960	Aldosterone-regulated sodium reabsorption	1	38	2.504392015	1	1	
00350	Tyrosine metabolism	1	39	2.440176835	1	1	
04670	Leukocyte transendothelial migration	2	115	1.655076462	1	1	
00260	Glycine, serine and threonine metabolism	1	40	2.379172414	1	1	
00860	Porphyrin and chlorophyll metabolism	1	41	2.321143818	1	1	
04216	Ferroptosis	1	41	2.321143818	1	1	
05219	Bladder cancer	1	41	2.321143818	1	1	
04973	Carbohydrate digestion and absorption	1	43	2.213183641	1	1	
03022	Basal transcription factors	1	44	2.162884013	1	1	
03420	Nucleotide excision repair	1	44	2.162884013	1	1	
00565	Ether lipid metabolism	1	45	2.114819923	1	1	
03050	Proteasome	1	46	2.068845577	1	1	
02010	ABC transporters	1	47	2.024827586	1	1	
00510	N-Glycan biosynthesis	1	49	1.942181562	1	1	
00520	Amino sugar and nucleotide sugar metabolism	1	49	1.942181562	1	1	
03040	Spliceosome	2	133	1.431081151	1	1	
00071	Fatty acid degradation	1	50	1.903337931	1	1	
00330	Arginine and proline metabolism	1	50	1.903337931	1	1	
00591	Linoleic acid metabolism	1	50	1.903337931	1	1	
00983	Drug metabolism - other enzymes	1	51	1.866017579	1	1	
04217	Necroptosis	3	177	1.612998247	1	1	
05134	Legionellosis	1	58	1.640808561	1	1	
04062	Chemokine signaling pathway	3	195	1.464106101	1	1	

00561	Glycerolipid metabolism	1	61	1.560113058	1	1	
04137	Mitophagy - animal	1	63	1.51058566	1	1	
05230	Central carbon metabolism in cancer	1	64	1.486982759	1	1	
00980	Metabolism of xenobiotics by cytochrome P450	1	65	1.464106101	1	1	
00982	Drug metabolism - cytochrome P450	1	67	1.420401441	1	1	
05221	Acute myeloid leukemia	1	69	1.379230385	1	1	
04940	Type I diabetes mellitus	1	70	1.359527094	1	1	
04976	Bile secretion	1	71	1.340378825	1	1	
05220	Chronic myeloid leukemia	1	78	1.220088417	1	1	
05323	Rheumatoid arthritis	1	83	1.146589115	1	1	
03320	PPAR signaling pathway	1	85	1.119610548	1	1	
00140	Steroid hormone biosynthesis	1	87	1.093872374	1	1	
04610	Complement and coagulation cascades	1	87	1.093872374	1	1	
05416	Viral myocarditis	1	88	1.081442006	1	1	
00590	Arachidonic acid metabolism	1	89	1.069290972	1	1	
04120	Ubiquitin mediated proteolysis	2	140	1.359527094	1	1	
03013	RNA transport	2	167	1.139723312	1	1	
03010	Ribosome	2	177	1.075332164	1	1	
05202	Transcriptional misregulation in cancer	2	183	1.040075372	1	1	
05203	Viral carcinogenesis	1	231	0.411977907	1	1	
04640	Hematopoietic cell lineage	1	95	1.001756806	1	1	
04668	TNF signaling pathway	1	108	0.881174968	1	1	
05206	MicroRNAs in cancer	2	281	0.677344459	1	1	
03008	Ribosome biogenesis in eukaryotes	1	116	0.820404281	1	1	
04110	Cell cycle	1	124	0.767474972	1	1	
05161	Hepatitis B	1	143	0.665502773	1	1	
05162	Measles	1	136	0.699756592	1	1	
05168	Herpes simplex infection	2	215	0.885273456	1	1	
05169	Epstein-Barr virus infection	2	220	0.865153605	1	1	
05322	Systemic lupus erythematosus	1	142	0.670189412	1	1	