

Pathway ID	Pathway Name	Diff	Gene C	Gene A	MoI	Enrichment	p-value	FDR	Gene Symb	Rank
4151	PI3K-Akt sig	112	356	5.425027	7.82E-51	1.99E-48	Tnc Fgf4			1
5200	Pathways in	99	326	5.236625	1.64E-43	2.09E-41	Fzd5 Fgf7			2
4010	MAPK signa	88	259	5.85891	3.44E-43	2.92E-41	Bdnf Atf2			3
5205	Proteoglyca	81	230	6.07283	3.57E-41	2.27E-39	Hspg2 Hs			4
1100	Metabolic p	179	1242	2.485223	6.59E-29	3.36E-27	Dgkd Dak			5
4810	Regulation	63	217	5.006275	6.99E-27	2.97E-25	Fgf16 Fgd			6
4510	Focal adhe	61	205	5.131093	1.04E-26	3.79E-25	Itga3 Pter			7
4722	Neurotropl	45	123	6.308721	3.41E-24	1.09E-22	Pik3ca Mi			8
4360	Axon guida	46	133	5.964034	1.66E-23	4.70E-22	Unc5d Se			9
5166	HTLV-I infe	68	290	4.043383	5.05E-23	1.29E-21	Il15ra Tgf			10
4390	Hippo signa	49	156	5.416333	7.65E-23	1.77E-21	Wnt3 Ccr			11
4144	Endocytosi	59	225	4.521717	9.41E-23	2.00E-21	Src Dnm1			12
4150	mTOR signa	31	62	8.621919	6.39E-22	1.25E-20	Eif4b Ddit			13
4910	Insulin sign	45	141	5.503352	2.16E-21	3.93E-20	Pik3ca Gy			14
4310	Wnt signali	46	148	5.359571	2.64E-21	4.48E-20	Siah1a Ca			15
5161	Hepatitis B	46	149	5.323601	3.60E-21	5.74E-20	Fas Nras			16
4062	Chemokine	53	199	4.59258	6.74E-21	1.01E-19	Gnai3 Shc			17
4141	Protein prc	48	169	4.897658	2.54E-20	3.59E-19	Rpn2 Ube			18
4912	GnRH signa	34	89	6.587533	2.89E-19	3.88E-18	Pla2g4d A			19
4728	Dopaminer	41	135	5.237017	1.05E-18	1.33E-17	Ppp2r3a I			20
4012	ErbB signal	33	87	6.540766	1.27E-18	1.55E-17	Crkl Egfr			21
5215	Prostate ca	33	89	6.393782	2.89E-18	3.35E-17	Chuk Ccn			22
5220	Chronic my	30	74	6.990745	5.34E-18	5.92E-17	Hdac1 Ctl			23
4916	Melanogen	34	100	5.862905	2.03E-17	2.16E-16	Creb3l4 C			24
5100	Bacterial in	30	78	6.632245	3.11E-17	3.18E-16	Elmo1 Cd			25
5203	Viral carcin	52	236	3.79949	1.18E-16	1.16E-15	Gtf2a1 Cc			26
4120	Ubiquitin n	39	143	4.702865	4.46E-16	4.21E-15	Nedd4 Uk			27
5202	Transcripti	44	181	4.191872	6.09E-16	5.54E-15	Cdkn1b D			28
4740	Olfactory ti	11	1080	0.175632	9.56E-16	8.31E-15	Adrbk2 A			29
4915	Estrogen si	32	99	5.573766	9.77E-16	8.31E-15	Shc2 Pik3			30
4725	Cholinergic	34	114	5.142899	1.89E-15	1.55E-14	Map2k1 C			31
5160	Hepatitis C	37	136	4.691338	2.82E-15	2.25E-14	Mapk12 C			32
4660	T cell recep	33	110	5.173151	4.09E-15	3.16E-14	Cblb Tnf			33
5221	Acute myel	24	57	7.260563	4.47E-15	3.35E-14	Pik3ca Cc			34
5222	Small cell l	29	86	5.814782	6.39E-15	4.65E-14	Itgav Pik3			35
4622	RIG-I-like r	26	69	6.497678	7.80E-15	5.52E-14	Mavs Cyl			36
4512	ECM-recep	29	87	5.747946	9.05E-15	6.23E-14	Itgav Lam			37
4380	Osteoclast	35	127	4.752239	1.06E-14	7.10E-14	Cylid Rela			38
5169	Epstein-Bai	47	220	3.683911	1.25E-14	8.10E-14	Tbk1 Ywh			39
5164	Influenza A	41	172	4.11045	1.27E-14	8.10E-14	Trim25 N			40
5214	Glioma	25	66	6.531757	2.27E-14	1.41E-13	Braf Pik3c			41
5212	Pancreatic	25	67	6.434268	3.43E-14	2.08E-13	Chuk Pik3			42
4020	Calcium sig	42	185	3.914817	3.69E-14	2.19E-13	Cacna1c I			43
4666	Fc gamma I	29	92	5.435557	4.76E-14	2.76E-13	Arpc4 Ppi			44
4911	Insulin secr	28	88	5.486675	1.02E-13	5.75E-13	Trpm4 Sn			45
4370	VEGF signa	24	66	6.270486	2.23E-13	1.23E-12	Ptk2 Pla2			46

4630 Jak-STAT si	37	156	4.089884	3.06E-13	1.66E-12	Socs7 Cbl	47
5218 Melanoma	25	73	5.905424	3.38E-13	1.80E-12	Fgf16 Fgf	48
4270 Vascular sn	33	127	4.480682	3.92E-13	2.04E-12	Ednra Prk	49
5162 Measles	34	140	4.187789	1.41E-12	7.19E-12	Pik3ca Ifn	50
4723 Retrograde	29	104	4.808378	1.59E-12	7.80E-12	Mgll Map	51
5142 Chagas dise	29	104	4.808378	1.59E-12	7.80E-12	Akt1 Ppp	52
4340 Hedgehog :	20	49	7.038301	1.93E-12	9.31E-12	Wnt3 Lrp	53
4080 Neuroactiv	50	282	3.057418	3.44E-12	1.62E-11	Adcyap1r	54
4114 Oocyte me	30	115	4.498392	4.29E-12	1.99E-11	Ppp2r5a I	55
4530 Tight juncti	33	138	4.123526	4.83E-12	2.20E-11	Mpp5 Prk	56
4514 Cell adhesi	36	163	3.808455	6.23E-12	2.79E-11	Cdh3 Nrx	57
5213 Endometria	20	52	6.632245	7.28E-12	3.18E-11	Braf Egfr	58
4914 Progesterone	26	89	5.037525	7.36E-12	3.18E-11	Adcy2 Cd	59
5210 Colorectal c	22	64	5.927569	8.71E-12	3.70E-11	Pik3cd Cc	60
4066 HIF-1 signa	29	113	4.42541	1.54E-11	6.35E-11	Prkcb Ld	61
5145 Toxoplasma	29	113	4.42541	1.54E-11	6.35E-11	Il10ra Ccr	62
4724 Glutamater	29	117	4.274114	3.91E-11	1.58E-10	Slc38a1 C	63
4115 p53 signalin	22	69	5.498035	4.81E-11	1.89E-10	Bai1 Bax	64
5211 Renal cell c	22	69	5.498035	4.81E-11	1.89E-10	Pak4 Nra	65
3015 mRNA surv	26	97	4.622059	6.35E-11	2.45E-10	Wdr33 Pp	66
5414 Dilated can	25	90	4.789955	6.45E-11	2.46E-10	Tnf Lmna	67
4664 Fc epsilon f	22	71	5.343161	9.08E-11	3.40E-10	Mapk3 Ni	68
4713 Circadian e	26	99	4.528685	1.05E-10	3.87E-10	Gnb5 Gng	69
4142 Lysosome	29	124	4.032833	1.79E-10	6.52E-10	Slc11a2 N	70
4060 Cytokine-cy	45	266	2.917191	2.17E-10	7.77E-10	Ghr Tgfb2	71
4971 Gastric acid	22	74	5.126546	2.25E-10	7.77E-10	Prkacb M	72
5412 Arrhythmo	22	74	5.126546	2.25E-10	7.77E-10	Itgb1 Tcf	73
5223 Non-small c	19	55	5.956962	2.26E-10	7.77E-10	Raf1 Pik3	74
5168 Herpes sim	39	211	3.18725	2.53E-10	8.61E-10	Socs3 Eif	75
4720 Long-term	21	70	5.173151	4.91E-10	1.65E-09	Raf1 Rps	76
4960 Aldosterone	16	40	6.897535	5.22E-10	1.73E-09	Atp1b4 N	77
5410 Hypertroph	23	84	4.721527	5.37E-10	1.75E-09	Itgav Itga	78
4920 Adipocytok	21	71	5.10029	6.59E-10	2.13E-09	Camkk1 F	79
4540 Gap junctio	23	88	4.506912	1.47E-09	4.70E-09	Adcy2 Cd	80
3040 Spliceosom	29	137	3.650155	2.22E-09	6.98E-09	Snnp40 S	81
4961 Endocrine :	18	56	5.542662	2.66E-09	8.27E-09	Ap2a1 At	82
4962 Vasopressin	16	44	6.270486	2.77E-09	8.51E-09	Aqp2 Prk	83
4726 Serotonerg	28	130	3.714057	2.81E-09	8.53E-09	Slc18a2 C	84
4930 Type II diab	17	50	5.862905	2.84E-09	8.53E-09	Ikbkb Hk1	85
4970 Salivary sec	21	77	4.702865	3.43E-09	1.02E-08	Adcy3 Ad	86
5032 Morphine :	23	93	4.264605	4.78E-09	1.40E-08	Arrb1 Gnl	87
4620 Toll-like rec	24	101	4.097545	5.15E-09	1.49E-08	Chuk Map	88
5146 Amoebiasis	26	120	3.736165	9.38E-09	2.69E-08	Pik3ca Il1	89
4727 GABAergic	22	90	4.21516	1.33E-08	3.78E-08	Gad2 Prk	90
5217 Basal cell c	17	55	5.329913	1.49E-08	4.18E-08	Wnt3a W	91
4721 Synaptic ve	18	63	4.926811	2.19E-08	6.04E-08	Atp6v1a I	92
5031 Amphetam	19	70	4.68047	2.20E-08	6.04E-08	Grin2b Pr	93

4662 B cell recep	20	78	4.421497	2.66E-08	7.21E-08	Mapk3 Ik	94
230 Purine met	31	173	3.089936	4.07E-08	1.09E-07	Gmps Pol	95
5216 Thyroid car	12	29	7.135381	5.82E-08	1.55E-07	Tcf7 Braf	96
4520 Adherens j	19	75	4.368439	7.53E-08	1.98E-07	Smad3 Pv	97
4350 TGF-beta si	20	83	4.155142	8.30E-08	2.16E-07	Inhbe Tnf	98
564 Glycerophc	21	91	3.979347	8.65E-08	2.23E-07	Pla2g4d L	99
532 Glycosamir	10	20	8.621919	9.16E-08	2.34E-07	B3gat3 Cl	100
4210 Apoptosis	20	84	4.105676	1.03E-07	2.60E-07	Rela Ikbl	101
4330 Notch signa	15	49	5.278726	1.31E-07	3.28E-07	Dll4 Hdac	102
5034 Alcoholism	33	202	2.817063	1.48E-07	3.66E-07	H2afj Nra	103
5030 Cocaine ad	15	50	5.173151	1.77E-07	4.34E-07	Nfkb1 Gri	104
4110 Cell cycle	25	129	3.341829	1.91E-07	4.63E-07	Cdk2 Cdk	105
4070 Phosphatid	19	81	4.044851	2.84E-07	6.84E-07	Prkcb Pip	106
4621 NOD-like re	16	59	4.676295	3.17E-07	7.52E-07	Tnf Mapk	107
5152 Tuberculos	30	179	2.890029	3.19E-07	7.52E-07	Rela Map	108
4972 Pancreatic	21	103	3.515734	8.15E-07	1.91E-06	Plcb1 Atp	109
4670 Leukocyte t	23	121	3.277754	8.78E-07	2.04E-06	Gnai3 Thy	110
561 Glycerolipid	15	56	4.618885	9.19E-07	2.11E-06	Aldh3a2 L	111
4973 Carbohydrate	13	45	4.981553	2.07E-06	4.71E-06	Prkcb Akt	112
562 Inositol pho	15	61	4.240288	3.03E-06	6.83E-06	Inpp5b Pl	113
4320 Dorso-vent	9	22	7.054297	3.65E-06	8.17E-06	Grb2 Map	114
4974 Protein dig	18	88	3.527149	5.10E-06	1.13E-05	Atp1b3 A	115
5020 Prion disea	11	35	5.419492	5.58E-06	1.23E-05	Prnp Stip	116
4650 Natural kill	22	125	3.034915	5.94E-06	1.29E-05	Sh2d1a M	117
5133 Pertussis	16	74	3.728397	8.50E-06	1.84E-05	Gnai3 Ma	118
5140 Leishmania	15	66	3.919054	8.75E-06	1.88E-05	Nfkb1 Jak	119
4064 NF-kappa B	19	103	3.180902	1.35E-05	2.88E-05	Traf2 Chu	120
4730 Long-term	14	61	3.957602	1.60E-05	3.38E-05	Gna11 Plc	121
5132 Salmonella	16	79	3.492423	2.07E-05	4.32E-05	Arpc5 Arp	122
5016 Huntington	27	189	2.463405	2.87E-05	5.96E-05	Pparg Ap	123
512 Mucin type	9	28	5.542662	3.69E-05	7.59E-05	Galnt3 Gc	124
4640 Hematopoi	16	88	3.135243	8.47E-05	0.000173	Itga3 Itga	125
410 beta-Alanin	9	31	5.006275	9.20E-05	0.000186	Aldh1b1 C	126
5219 Bladder car	10	39	4.421497	0.000114	0.000229	Raf1 Map	127
4950 Maturity on	8	26	5.305796	0.000154	0.000307	Nr5a2 On	128
330 Arginine an	12	57	3.630282	0.000174	0.000344	Cndp1 Ac	129
4913 Ovarian ste	12	58	3.56769	0.000208	0.000407	Cyp1b1 A	130
510 N-Glycan b	11	50	3.793644	0.000223	0.000435	Mgat3 M	131
5134 Legionellos	12	59	3.507221	0.000247	0.000477	Nfkb1 Tnf	132
3013 RNA transp	23	172	2.305862	0.000399	0.000765	Clns1a Th	133
514 Other type	8	30	4.598357	0.000469	0.000886	B3gat1 Pc	134
3060 Protein exp	8	30	4.598357	0.000469	0.000886	Immp1l S	135
240 Pyrimidine	16	102	2.704916	0.000515	0.000966	Uck1 Nm	136
100 Steroid bio	6	17	6.08606	0.000537	0.001	Dhcr24 C	137
62 Fatty acid e	7	24	5.029453	0.000631	0.001167	Hadha Ek	138
4975 Fat digesti	9	40	3.879863	0.000777	0.001415	Ppap2b D	139
5033 Nicotine ac	9	40	3.879863	0.000777	0.001415	Gabra3 Sl	140

4964 Proximal tu	6	20	5.173151	0.001448	0.002614	Atp1b4 A	141
4130 SNARE inte	8	35	3.941449	0.001456	0.002614	Snap25 V	142
4623 Cytosolic D	11	62	3.05939	0.001602	0.002857	Rela Polr	143
4744 Phototrans	7	28	4.310959	0.001761	0.003118	Rho Gnat	144
4978 Mineral ab	9	46	3.373794	0.002287	0.004023	Slc30a1 S	145
603 Glycosphin	5	15	5.747946	0.002404	0.004198	St8sia1 N	146
650 Butanoate	7	30	4.023562	0.002734	0.004743	Acsm5 Ak	147
640 Propanoate	7	31	3.89377	0.003357	0.005745	Aldh1b1 J	148
4710 Circadian rl	7	31	3.89377	0.003357	0.005745	Bhlhe40 F	149
5144 Malaria	9	49	3.167235	0.003648	0.006202	Sdc2 Tnf	150
4976 Bile secreti	11	72	2.634475	0.005607	0.009469	Adcy2 Atj	151
4672 Intestinal ir	8	43	3.208156	0.005937	0.00996	Pigr Cd86	152
4140 Regulation	7	35	3.448767	0.007008	0.011605	Atg12 Prk	153
5143 African try	7	35	3.448767	0.007008	0.011605	Il12a Gna	154
5010 Alzheimer's	21	183	1.978801	0.007195	0.011836	Atp5g2 A	155
4966 Collecting c	6	27	3.831964	0.007797	0.012746	Atp6v1g1	156
5014 Amyotroph	9	55	2.821719	0.008266	0.013426	Bax Cyca	157
10 Glycolysis /	10	66	2.612703	0.009106	0.014691	Aldh3a2 F	158
3022 Basal trans	8	46	2.998928	0.00916	0.014691	Taf11 Taf	159
600 Sphingolipi	8	47	2.935121	0.010488	0.016657	Kdsr Neu	160
3018 RNA degra	11	78	2.431823	0.010517	0.016657	Parn Pan	161
4260 Cardiac mu	11	79	2.401041	0.011592	0.018247	Atp1a2 Sl	162
3410 Base excisi	7	39	3.095048	0.0131	0.020494	Pold3 Xrc	163
310 Lysine degr	8	49	2.81532	0.01358	0.021115	Aldh1b1 I	164
5323 Rheumatoi	11	84	2.258122	0.018324	0.028083	Atp6v1f A	165
533 Glycosamir	4	15	4.598357	0.018392	0.028083	B3gnt1 Fu	166
604 Glycosphin	4	15	4.598357	0.018392	0.028083	St3gal5 St	167
4145 Phagosome	19	180	1.820183	0.020468	0.031067	Itgb3 Rab	168
534 Glycosamir	5	24	3.592466	0.022012	0.033213	Hs3st3a1	169
770 Pantothen	4	16	4.310959	0.023413	0.035119	Aasdhpt	170
500 Starch and	8	54	2.554643	0.024286	0.036217	Pygm Kl	171
601 Glycosphin	5	25	3.448767	0.026226	0.038882	B3gnt5 Fu	172
1230 Biosynthes	10	77	2.239459	0.026704	0.039362	Prps1 Pga	173
250 Alanine, as	6	35	2.956086	0.028809	0.04222	Gad2 Gfp	174
450 Selenocom	4	17	4.057373	0.029234	0.042598	Papss2 Co	175
5340 Primary im	6	36	2.873973	0.032917	0.047692	Cd4 Icos	176
920 Sulfur meta	3	11	4.702865	0.045246	0.065185	Chst11 Pa	177
51 Fructose ar	6	39	2.652898	0.047615	0.067832	Sord Mtr	178
270 Cysteine ar	6	39	2.652898	0.047615	0.067832	Dnmt3b C	179