

**Additional Table 3 KEGG pathway enrichment in ISP vs. IR group**

#Term	ID	Input number	Background	P-Value	Corrected P-Value	Input	KO	Entrez_ID	KO_name	Hyperlink
Alzheimer's disease	rno05010	8	200	0.0040638	0.3980958	ENSRNO	rno:293652	293652 68	Ndufs8	http://www
						G0000001	rno:68450	4509 2972	Apbb1,	.genome.jp
						7446 ENS	9 rno:2972	2 299858 2	FE65 Lrp1	/kegg-
						RNOG000	2 rno:2998	99643 116	Ndufa7 Cd	bin/show_p
						00050514	58 rno:299	671 10036	k5r1,	athway?rno
						ENSRNO	643 rno:11	2331 6829	Cdk5r,	05010/rno:
						G0000001	6671 rno:1	30	p35 Ndufa	100362331
						8020 ENS	00362331 r		412 Cacna1	%09red/rn
						RNOG000	no:682930		s, Cchl1a3	o:293652%
						00025053				09red/rno:
						ENSRNO				682930%0
G0000000				9red/rno:2						
6939 ENS				9722%09re						
RNOG000				d/rno:1166						
00021685				71%09red/						
ENSRNO				rno:299858						
G0000003				%09red/rn						
1851 ENS				o:299643%						
Glycosylphosphatidylinositol(GPI)-anchors biosynthesis	rno00563	3	26	0.0051367	0.3980958	ENSRNO	rno:296360	296360 28	Pigt Pigq P	http://www
						G0000001	rno:28715	7159 3627	igh	.genome.jp
						4690 ENS	9 rno:3627	56		/kegg-
						RNOG000	56			bin/show_p
						00020140				athway?rno
						ENSRNO				00563/rno:
						G0000001				296360%0
						0914				9red/rno:3
										62756%09
										red/rno:28
										7159%09re
Metabolic pathways	rno01100	26	1295	0.0109903	0.5432877	ENSRNO	rno:362757	362757 30	Rdh11 Sm	http://www
						G0000005	rno:30890	8909 8524	pd1 Pola2	.genome.jp
						4770 ENS	9 rno:8524	2 114700 3	Cyp27b1,	/kegg-
						RNOG000	2 rno:1147	14264 605	Cyp40 Rdh	bin/show_p
						00017977	00 rno:314	76 114711	12 Treh Gn	athway?rno
						ENSRNO	264 rno:60	309147 29	e,	01100/rno:
						G0000002	576 rno:11	215 36275	Uae1 Aldh	308909%0
						0906 ENS	4711 rno:3	6 25244 29	3b1 Arg2 P	9red/rno:6
						RNOG000	09147 rno:	3650 2919	igh Bckdha	0576%09re
						00046214	29215 rno:	4 29411 29	, BCKDA,	d/rno:3627
						ENSRNO	362756 rno	9643 2871	E1a Tcirg1	56%09red/
						G0000005	:25244 rno:	59 60356 3	, OC116,	rno:100362
						6553 ENS	293650 rno	08445 116	TIRC7 Chk	331%09red
						RNOG000	:29194 rno:	593 29365	a, CK-R,	/rno:29365
						00052010	29411 rno:	2 24479 11	Chk Ppt1,	2%09red/r
						ENSRNO	299643 rno	3956 6845	Ppt Ndufa7	no:293650
						G0000001	:287159 rn	09 296360	Pigq Csad	%09red/rn
						4365 ENS	o:60356 rn	299857 10	Cyp2s1 Up	o:116593%
						RNOG000	o:308445 r	0362331	b1,	09red/rno:
						00017512	no:116593		Bup1 Nduf	362757%0
						ENSRNO	rno:293652		s8 Idh1 Pec	9red/rno:2
						G0000005	rno:24479		r, TERP	99643%09
						3811 ENS	rno:113956		Pigt Shmt2	red/rno:29
						RNOG000	rno:68450		Ndufa4 2	6360%09re
						00010914	9 rno:2963			d/rno:1147
						ENSRNO	60 rno:299			00%09red/
						G0000002	857 rno:10			rno:24479
						0607 ENS	0362331			%09red/rn
						RNOG000				o:29411%0
						00017220				9red/rno:2
						ENSRNO				87159%09
						G0000001				red/rno:11

Hypertrophic cardiomyopathy (HCM)	rno05410	4	84	0.0224749	0.5432877	ENSRNO G00000020652 ENSRNOG00000005580 ENSRNO G00000046231 ENSRNOG00000019638	rno:59086 59086 25724 682930 682930 60374	Tgfb1, Tgfb Itgb4 Cacna1s, Cchl1a3 Lmna	http://www.genome.jp/kegg-bin/show_pathway?rno05410/rno:25724%09red/rno:60374%09red/rno:59086%09red/rno:682930%
Lysosome	rno04142	5	127	0.0227448	0.5432877	ENSRNO G00000017220 ENSRNOG0000000571 ENSRNO G00000014635 ENSRNOG00000017977 ENSRNO G00000012616	rno:293650 293650 25524 83800 83800 308909 411 29411	Tcirg1, OC116, TIRC7 Psa p, SGP-1, SGP1A Clta, LCA1, LCA2, LCA3 Smpd1 Ppt1, Ppt	http://www.genome.jp/kegg-bin/show_pathway?rno04142/rno:308909%09red/rno:25524%09red/rno:29411%09red/rno:83800%09red/rno:
ECM-receptor interaction	rno04512	4	86	0.0241729	0.5432877	ENSRNO G00000006094 ENSRNOG00000005580 ENSRNO G00000014297 ENSRNOG00000012471	rno:25406 25406 25724 24771 24771 9220 29220	Cd44, CD44A, METAA, RHAMM Itgb4 Sdc4, RATRYU DOCA, RYUDOC A Thbs4	http://www.genome.jp/kegg-bin/show_pathway?rno04512/rno:25724%09red/rno:24771%09red/rno:25406%09red/rno:29220%
Dilated cardiomyopathy	rno05414	4	88	0.0259466	0.5432877	ENSRNO G00000020652 ENSRNOG00000046231 ENSRNOG00000019638	rno:59086 59086 25724 682930 682930 60374	Tgfb1, Tgfb Itgb4 Cacna1s, Cchl1a3 Lmna	http://www.genome.jp/kegg-bin/show_pathway?rno05414/rno:25724%09red/rno:60374%09red/rno:59086%09red/rno:682930%
Steroid biosynthesis	rno00100	2	20	0.0289625	0.5432877	ENSRNO G00000046214 ENSRNOG000000053769	rno:114700 114700 26677 6770 0	Cyp27b1, Cyp40 Soat2, Acat-2	http://www.genome.jp/kegg-bin/show_pathway?rno00100/rno:26677%09red/rno:114700%09
Spliceosome	rno03040	5	140	0.0323288	0.5432877	ENSRNO G00000008489 ENSRNOG000000034066 ENSRNO G00000007921 ENSRNOG000000046174 ENSRNOG00000005	rno:366461 366461 24468 116655 366461 68771 68771 11	Ppih, RGD15649 Hspa8, Hsc70 Hnrnp, Hnrpm, Hnrpm4 Ppih, RGD15649 Snrpd3	http://www.genome.jp/kegg-bin/show_pathway?rno03040/rno:24468%09red/rno:116655%09red/rno:366461%09red/rno:68771%09red/rno:68771%

Malaria	rno05144	3	56	0.0350508	0.5432877	ENSRNO G0000002 0652 ENS RNOG000 00025053  ENSRNO G0000001 2471	rno:59086  rno:299858  rno:29220  59086 299 858 29220	Tgfb1, Tgfb Lrp1  Thbs4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05144/rno:29220%09red/rno:299858%09red/rno:5908">http://www .genome.jp /kegg- bin/show_p athway?rno 05144/rno: 29220%09 red/rno:29 9858%09re d/rno:5908</a>
Oxidative phosphorylation	rno00190	5	157	0.0481887	0.6790228	ENSRNO G0000001 7220 ENS RNOG000 00017446  ENSRNO G0000000 6939 ENS RNOG000 00031851  ENSRNO G0000005 0514	rno:293650  rno:29365 2 rno:2996 43 rno:100 331 68450 362331 rno 9  :684509	Tcirg1, OC116, TIRC7 Nd ufs8 Ndufa 7 Ndufa412	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00190/rno:100362331%09red/rno:299643%09red/rno:684509%09red/rno:293652%09red/rno:29">http://www .genome.jp /kegg- bin/show_p athway?rno 00190/rno: 100362331 %09red/rn o:299643% 09red/rno: 684509%0 9red/rno:2 93652%09 red/rno:29</a>
beta-Alanine metabolism	rno00410	2	32	0.0639969	0.6941058	ENSRNO G0000001 7512 ENS RNOG000 00038258	rno:309147  rno:11659 6593  3	Aldh3b1 U pb1, Bup1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00410/rno:116593%09red/rno:309147%09">http://www .genome.jp /kegg- bin/show_p athway?rno 00410/rno: 116593%0 9red/rno:3 09147%09</a>
Arrhythmic right ventricular cardiomyopathy (ARVC)	rno05412	3	74	0.0674332	0.6941058	ENSRNO G0000000 5580 ENS RNOG000 00046231  ENSRNO G0000001 9638	rno:25724  rno:682930  rno:60374  25724 682 930 60374	Itgb4 Cacn a1s, Cchl1a3 L mna	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05412/rno:25724%09red/rno:60374%09red/rno:68293">http://www .genome.jp /kegg- bin/show_p athway?rno 05412/rno: 25724%09 red/rno:60 374%09red /rno:68293</a>
Non-alcoholic fatty liver disease (NAFLD)	rno04932	5	175	0.0692191	0.6941058	ENSRNO G0000002 0652 ENS RNOG000 00017446  ENSRNO G0000000 6939 ENS RNOG000 00031851  ENSRNO G0000005 0514	rno:59086  rno:293652  rno:29964 3 rno:1003 31 684509  62331 rno: 684509	Tgfb1, Tgfb Ndufs 8 Ndufa7 N dufa412	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04932/rno:100362331%09red/rno:299643%09red/rno:684509%09red/rno:293652%09red/rno:59">http://www .genome.jp /kegg- bin/show_p athway?rno 04932/rno: 100362331 %09red/rn o:299643% 09red/rno: 684509%0 9red/rno:2 93652%09 red/rno:59</a>
Cyanoamino acid metabolism	rno00460	1	5	0.0707263	0.6941058	ENSRNO G0000000 8106	rno:299857   299857	Shmt2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00460/rno:299857%09">http://www .genome.jp /kegg- bin/show_p athway?rno 00460/rno: 299857%0</a>

Chronic myeloid leukemia	rno05220	3	76	0.0716496	0.6941058	ENSRNO G00000020652 ENSRNO RNOG00000001304 ENSRNO G00000025602	rno:59086 59086 309696 94201	Tgfb1, Tgfb Bcr Cdk4	http://www.genome.jp/kegg-bin/show_pathway?rno05220/rno:309696%09red/rno:94201%09red/rno:5908
Retinol metabolism	rno00830	3	80	0.0804261	0.7076939	ENSRNO G00000020743 ENSRNO RNOG00000056553 ENSRNO G00000054770	rno:308445 308445 31426 4264 36274	Cyp2s1 Rdh1	http://www.genome.jp/kegg-bin/show_pathway?rno00830/rno:362757%09red/rno:314264264%09red/rno:308445%09re
Peroxisome	rno04146	3	82	0.0849809	0.7076939	ENSRNO G00000015020 ENSRNO RNOG00000055295 ENSRNO G00000008748	rno:24479 113956 29534	Idh1 Pecr, TERP Pex2, Pxmp3	http://www.genome.jp/kegg-bin/show_pathway?rno04146/rno:113956%09red/rno:29534%09red/rno:2447
Endocytosis	rno04144	6	245	0.0867496	0.7076939	ENSRNO G00000025584 ENSRNO RNOG00000014635 ENSRNO G00000007648 ENSRNO RNOG00000020652 ENSRNO G00000034066 ENSRNO RNOG00000058733	rno:65218 83800 79434 9086 24468 314961	Agap2, Centg1, Pike Cita, LCA1, LCA2, LCA3 Rab11b Tgfb1, Tgfb Hspa8, Hsc70 Asap1, Ddef1	http://www.genome.jp/kegg-bin/show_pathway?rno04144/rno:24468%09red/rno:59086%09red/rno:65218%09red/rno:83800%09red/rno:314961%09red/rno:79
Tight junction	rno04530	4	139	0.0971237	0.7327777	ENSRNO G00000057817 ENSRNO RNOG00000004834 ENSRNO G00000007922 ENSRNO RNOG00000025602	rno:59317 360661 298487 94201	Epb4111, 4.1N, Epb4.111 Lgl2, RGD15603 Cldn19, claudin-19 Cdk4	http://www.genome.jp/kegg-bin/show_pathway?rno04530/rno:94201%09red/rno:360661%09red/rno:59317%09red/rno:298487
Biosynthesis of amino acids	rno01230	3	88	0.0992796	0.7327777	ENSRNO G00000053811 ENSRNO RNOG00000008106 ENSRNO G00000015020	rno:29215 29215 299857 24479	Arg2 Shmt2 Idh1	http://www.genome.jp/kegg-bin/show_pathway?rno01230/rno:299857%09red/rno:24479%09red/rno:2921

Taurine and hypotaurine metabolism	rno00430	1	8	0.1041968	0.7341136	ENSRNO G00000011573	rno:60356 60356	Csad	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00430/rno:60356%09">http://www.genome.jp/kegg-bin/show_pathway?rno00430/rno:60356%09</a>
Intestinal immune network for IgA production	rno04672	2	45	0.1114728	0.7512295	ENSRNO G00000020652 ENSRNOG00017348	rno:59086 59086 116 rno:116562 562	Tgfb1, TgfbII2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04672/rno:116562%09red/rno:59086%09re">http://www.genome.jp/kegg-bin/show_pathway?rno04672/rno:116562%09red/rno:59086%09re</a>
Huntington's disease	rno05016	5	213	0.1274918	0.7982882	ENSRNO G00000014635 ENSRNOG00017446 ENSRNO G00000006939 ENSRNOG00031851 ENSRNO G00000050514	rno:83800 83800 293 rno:293652 652 29964  rno:29964 3 1003623 3 rno:1003 31 684509  62331 rno:684509	Clta, LCA1, LCA2, LCA3 Ndufs8 Ndufa7 Ndufa4I2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05016/rno:100362331%09red/rno:299643%09red/rno:684509%09red/rno:293652%09red/rno:83">http://www.genome.jp/kegg-bin/show_pathway?rno05016/rno:100362331%09red/rno:299643%09red/rno:684509%09red/rno:293652%09red/rno:83</a>
Fatty acid metabolism	rno01212	2	53	0.1440108	0.7982882	ENSRNO G00000012616 ENSRNOG00055295	rno:29411 29411 113 rno:113956 956	Ppt1, Ppt Pecr, TERP	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno01212/rno:113956%09red/rno:29411%09re">http://www.genome.jp/kegg-bin/show_pathway?rno01212/rno:113956%09red/rno:29411%09re</a>
T cell receptor signaling pathway	rno04660	3	107	0.1500644	0.7982882	ENSRNO G00000002278 ENSRNOG00017348 ENSRNO G00000025602	rno:84492 84492 116 rno:116562 562 94201   rno:94201	Tec II2 Cd k4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04660/rno:84492%09red/rno:94201%09red/rno:11656">http://www.genome.jp/kegg-bin/show_pathway?rno04660/rno:84492%09red/rno:94201%09red/rno:11656</a>
Protein processing in endoplasmic reticulum	rno04141	4	169	0.1600843	0.7982882	ENSRNO G00000019798 ENSRNOG00034066 ENSRNO G00000018294 ENSRNOG00025570	rno:287155 287155 24  rno:24468 468 25617  rno:25617 362891  rno:362891	Stub1, Chip Hspa8, Hsc70 Hspa5, BIP, GRP78 Os9, Os-9	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04141/rno:24468%09red/rno:287155%09red/rno:362891%09red/rno:25617">http://www.genome.jp/kegg-bin/show_pathway?rno04141/rno:24468%09red/rno:287155%09red/rno:362891%09red/rno:25617</a>





Glyoxylate and dicarboxylate metabolism	rno00630	1	25	0.2723856	0.7982882	ENSRNO G00000008106	rno:299857 299857	Shmt2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00630/rno:299857%0">http://www.genome.jp/kegg-bin/show_pathway?rno00630/rno:299857%0</a>
Fatty acid elongation	rno00062	1	27	0.289977	0.7982882	ENSRNO G00000012616	rno:29411  29411	Ppt1, Ppt	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00062/rno:29411%09">http://www.genome.jp/kegg-bin/show_pathway?rno00062/rno:29411%09</a>
Collecting duct acid secretion	rno04966	1	27	0.289977	0.7982882	ENSRNO G00000017220	rno:293650 293650	Tcirg1, OC116, TIRC7	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04966/rno:293650%0">http://www.genome.jp/kegg-bin/show_pathway?rno04966/rno:293650%0</a>
Biosynthesis of unsaturated fatty acids	rno01040	1	27	0.289977	0.7982882	ENSRNO G00000055295	rno:113956 113956	Pecr, TERP	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno01040/rno:113956%0">http://www.genome.jp/kegg-bin/show_pathway?rno01040/rno:113956%0</a>
Rheumatoid arthritis	rno05323	2	87	0.2943501	0.7982882	ENSRNO G00000017220 ENSRNO G00000000020652	rno:293650 293650 59 rno:59086  086	Tcirg1, OC116, TIRC7 Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05323/rno:59086%09red/rno:293650%09red/rno:293650%09red/rno:3082">http://www.genome.jp/kegg-bin/show_pathway?rno05323/rno:59086%09red/rno:293650%09red/rno:293650%09red/rno:3082</a>
Hippo signaling pathway	rno04390	3	157	0.308002	0.7982882	ENSRNO G00000014916 ENSRNO G0000000004834 ENSRNO G00000020652	rno:308265 308265 36 rno:36066 0661 59086 1 rno:59086  6	Lats1, RGD1564085 Llg12, RGD1560307 Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04390/rno:360661%09red/rno:59086%09red/rno:3082">http://www.genome.jp/kegg-bin/show_pathway?rno04390/rno:360661%09red/rno:59086%09red/rno:3082</a>
Epstein-Barr virus infection	rno05169	4	229	0.3145183	0.7982882	ENSRNO G00000026295 ENSRNO G0000000006094 ENSRNO G00000034066 ENSRNO G0000000005538	rno:362268 362268 25 rno:25406  406 24468 rno:24468  303353 rno:303353	Rbpjl, Rbpsuhl Cd44, CD44A, META, RHAMM Hspa8, Hsc70 Psm d11	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05169/rno:24468%09red/rno:362268%09red/rno:303353%09red/rno:25406">http://www.genome.jp/kegg-bin/show_pathway?rno05169/rno:24468%09red/rno:362268%09red/rno:303353%09red/rno:25406</a>
Citrate cycle (TCA cycle)	rno00020	1	32	0.3321228	0.7982882	ENSRNO G00000015020	rno:24479  24479	Idh1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00020/rno:24479%09">http://www.genome.jp/kegg-bin/show_pathway?rno00020/rno:24479%09</a>



Antigen processing and presentation	rno04612	2	96	0.334543	0.7982882	ENSRNO G00000034066 ENSRNOG00000018294	rno:24468 24468 25617	Hspa8, Hsc70 Hsp a5, BIP, GRP78	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04612/rno:24468%09red/rno:25617%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04612/rno:24468%09red/rno:25617%09red</a>
Estrogen signaling pathway	rno04915	2	97	0.3389723	0.7982882	ENSRNO G00000034066 ENSRNOG0000001287	rno:24468 24468 171104	Hspa8, Hsc70 Gper, Gpr41, Gpr30	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04915/rno:24468%09red/rno:171104%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04915/rno:24468%09red/rno:171104%09red</a>
SNARE interactions in vesicular transport	rno04130	1	33	0.3402478	0.7982882	ENSRNO G00000060436	rno:100359100359 512	Vti1b	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04130/rno:100359100359%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04130/rno:100359100359%09red</a>
Prion diseases	rno05020	1	36	0.3640365	0.7982882	ENSRNO G00000018294	rno:25617 25617	Hspa5, BIP, GRP78	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05020/rno:25617%09red">http://www.genome.jp/kegg-bin/show_pathway?rno05020/rno:25617%09red</a>
Chagas disease (American trypanosomiasis)	rno05142	2	104	0.3697018	0.7982882	ENSRNO G00000020652 ENSRNOG00000017348	rno:59086 59086 116562	Tgfb1, TgfbII2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05142/rno:116562%09red/rno:59086%09red">http://www.genome.jp/kegg-bin/show_pathway?rno05142/rno:116562%09red/rno:59086%09red</a>
Bladder cancer	rno05219	1	37	0.3717745	0.7982882	ENSRNO G00000025602	rno:94201 94201	Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05219/rno:94201%09red">http://www.genome.jp/kegg-bin/show_pathway?rno05219/rno:94201%09red</a>
Tyrosine metabolism	rno00350	1	37	0.3717745	0.7982882	ENSRNO G00000017512	rno:309147 309147	Aldh3b1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00350/rno:309147%09red">http://www.genome.jp/kegg-bin/show_pathway?rno00350/rno:309147%09red</a>
Ribosome	rno03010	3	178	0.3775477	0.7982882	ENSRNO G00000042886 ENSRNOG00000031244 ENSRNOG0000003152	rno:691531 691531 297a 29659 6596 294282	Rps28 Rpl7a Rps18, Ke3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno03010/rno:691531%09red/rno:294282%09red/rno:29659%09red">http://www.genome.jp/kegg-bin/show_pathway?rno03010/rno:691531%09red/rno:294282%09red/rno:29659%09red</a>

DNA replication	rno03030	1	38	0.3794186	0.7982882	ENSRNO G00000020906	rno:85242 85242	Pola2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno03030/rno:85242%09">http://www.genome.jp/kegg-bin/show_pathway?rno03030/rno:85242%09</a>
Glycine, serine and threonine metabolism	rno00260	1	39	0.38697	0.7982882	ENSRNO G00000008106	rno:299857 299857	Shmt2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00260/rno:299857%0">http://www.genome.jp/kegg-bin/show_pathway?rno00260/rno:299857%0</a>
Pyrimidine metabolism	rno00240	2	108	0.38701	0.7982882	ENSRNO G00000020906 ENSRNO G00038258	rno:85242 85242 116  rno:116593 593	Pola2 Upb1, Bup1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00240/rno:116593%09red/rno:85242%09re">http://www.genome.jp/kegg-bin/show_pathway?rno00240/rno:116593%09red/rno:85242%09re</a>
Amoebiasis	rno05146	2	108	0.38701	0.7982882	ENSRNO G00000020652 ENSRNO G00053811	rno:59086 59086 292  rno:29215 15	Tgfb1, Tgfb Arg2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05146/rno:59086%09red/rno:29215%09red">http://www.genome.jp/kegg-bin/show_pathway?rno05146/rno:59086%09red/rno:29215%09red</a>
Tuberculosis	rno05152	3	181	0.3874016	0.7982882	ENSRNO G00000017220 ENSRNO G00020652 ENSRNO G00000046214	rno:293650 293650 59   rno:59086 086 11470  rno:114700 0	Tcirg1, OC116, TIRC7 Tgfb1, Tgfb Cyp27b1, Cyp40	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05152/rno:114700%09red/rno:59086%09red/rno:2936">http://www.genome.jp/kegg-bin/show_pathway?rno05152/rno:114700%09red/rno:59086%09red/rno:2936</a>
MAPK signaling pathway	rno04010	4	260	0.3996618	0.7982882	ENSRNO G00000020652 ENSRNO G00034066 ENSRNO G00000046231 ENSRNO G00011909	rno:59086 59086 244  rno:24468 68 682930  rno:682930 25597  rno:25597	Tgfb1, Tgfb Hspa8, Hsc70 Cacna1s, Cchl1a3 Rasa2, GAP1M	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04010/rno:24468%09red/rno:59086%09red/rno:25597%09red/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04010/rno:24468%09red/rno:59086%09red/rno:25597%09red/rno:682930%</a>
Pyruvate metabolism	rno00620	1	41	0.4017992	0.7982882	ENSRNO G00000019612	rno:302995 302995	Haghl	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00620/rno:302995%0">http://www.genome.jp/kegg-bin/show_pathway?rno00620/rno:302995%0</a>

PI3K-Akt signaling pathway	rno04151	5	340	0.409013	0.7982882	ENSRNO G0000001 7348 ENSRNO RNOG000 00005580 ENSRNO G0000001 2471 ENSRNO RNOG000 00025602 ENSRNO G0000001 0103	rno:116562 116562 25 rno:25724  724 29220 7348 29220 94201 300 rno:94201  253 rno:300253	Ii2 Itgb4 Thbs4 Cdk4 Eif4b	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04151/rno:25724%09red/rno:29220%09red/rno:94201%09red/rno:116562%09red/rno:">http://www.genome.jp/kegg-bin/show_pathway?rno04151/rno:25724%09red/rno:29220%09red/rno:94201%09red/rno:116562%09red/rno:</a>
Vasopressin-regulated water reabsorption	rno04962	1	42	0.4090792	0.7982882	ENSRNO G0000000 7648	rno:79434  79434	Rab11b	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04962/rno:79434%09">http://www.genome.jp/kegg-bin/show_pathway?rno04962/rno:79434%09</a>
Glutamate synaptic	rno04724	2	115	0.4167805	0.7982882	ENSRNO G0000000 5662 ENSRNO RNOG000 00005479	rno:81672  81672 294 rno:29482  82	Grm7 Slca2, Eaat2, Glt, Glt-1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04724/rno:81672%09red/rno:29482%09red/rno:">http://www.genome.jp/kegg-bin/show_pathway?rno04724/rno:81672%09red/rno:29482%09red/rno:</a>
Phagosome	rno04145	3	195	0.4328137	0.7982882	ENSRNO G0000001 5158 ENSRNO RNOG000 00017220 ENSRNO G0000001 2471	rno:316457 316457 29 rno:29365 3650 29220 rno:29220  0	Pikfyve, Pip5k3 Tcrg1, OC116, TIRC7 Thbs4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04145/rno:29220%09red/rno:293650%09red/rno:3164">http://www.genome.jp/kegg-bin/show_pathway?rno04145/rno:29220%09red/rno:293650%09red/rno:3164</a>
Leukocyte transendothelial migration	rno04670	2	120	0.4375951	0.7982882	ENSRNO G0000000 7922 ENSRNO RNOG000 00004696	rno:298487 298487 29 rno:29901 9012 2	Cldn19, claudin-19 Arhgap5, LRRGT00 098	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04670/rno:299012%09red/rno:298487%09">http://www.genome.jp/kegg-bin/show_pathway?rno04670/rno:299012%09red/rno:298487%09</a>
Carbon metabolism	rno01200	2	121	0.4417098	0.7982882	ENSRNO G0000000 8106 ENSRNO RNOG000 00015020	rno:299857 299857 24 rno:24479  479	Shmt2 Idh1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno01200/rno:299857%09red/rno:24479%09">http://www.genome.jp/kegg-bin/show_pathway?rno01200/rno:299857%09red/rno:24479%09</a>
Amino sugar and nucleotide sugar metabolism	rno00520	1	47	0.4441754	0.7982882	ENSRNO G0000001 4365	rno:114711 114711	Gne, Uae1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00520/rno:114711%0">http://www.genome.jp/kegg-bin/show_pathway?rno00520/rno:114711%0</a>
Cocaine addiction	rno05030	1	47	0.4441754	0.7982882	ENSRNO G0000002 1685	rno:116671 116671	Cdk5r1, Cdk5r, p35	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05030/rno:116671%0">http://www.genome.jp/kegg-bin/show_pathway?rno05030/rno:116671%0</a>

Vascular smooth muscle contraction	rno04270	2	123	0.4498892	0.7982882	ENSRNO G00000053766 ENSRNOG00000046231	rno:56820 56820 682 rno:682930 930	Ramp3 Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04270/rno:56820%09red/rno:682930%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04270/rno:56820%09red/rno:682930%09red</a>
Sphingolipid metabolism	rno00600	1	48	0.4509412	0.7982882	ENSRNO G00000017977	rno:308909 308909	Smpd1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00600/rno:308909%0">http://www.genome.jp/kegg-bin/show_pathway?rno00600/rno:308909%0</a>
Toxoplasmosis	rno05145	2	124	0.4539535	0.7982882	ENSRNO G00000020652 ENSRNOG000000034066	rno:59086 59086 244 rno:24468 68	Tgfb1, Tgfb Hspa8, Hsc70	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05145/rno:24468%09red/rno:59086%09red">http://www.genome.jp/kegg-bin/show_pathway?rno05145/rno:24468%09red/rno:59086%09red</a>
Proteasome	rno03050	1	49	0.457625	0.7982882	ENSRNO G00000005538	rno:303353 303353	Psm11	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno03050/rno:303353%0">http://www.genome.jp/kegg-bin/show_pathway?rno03050/rno:303353%0</a>
Osteoclast differentiation	rno04380	2	126	0.4620304	0.7982882	ENSRNO G00000020652 ENSRNOG00000002278	rno:59086 59086 844 rno:84492 92	Tgfb1, Tgfb Tec	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04380/rno:84492%09red/rno:59086%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04380/rno:84492%09red/rno:59086%09red</a>
Endocrine and other factor-regulated calcium reabsorption	rno04961	1	50	0.4642276	0.7982882	ENSRNO G00000014635	rno:83800 83800	Clta, LCA1, LCA2, LCA3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04961/rno:83800%09">http://www.genome.jp/kegg-bin/show_pathway?rno04961/rno:83800%09</a>
Cell cycle	rno04110	2	127	0.4660426	0.7982882	ENSRNO G00000020652 ENSRNOG000000025602	rno:59086 59086 942 rno:94201 01	Tgfb1, Tgfb Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04110/rno:94201%09red/rno:59086%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04110/rno:94201%09red/rno:59086%09red</a>
Notch signaling pathway	rno04330	1	51	0.4707501	0.7982882	ENSRNO G00000026295	rno:362268 362268	Rbpjl, Rbpsuhl	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04330/rno:362268%0">http://www.genome.jp/kegg-bin/show_pathway?rno04330/rno:362268%0</a>

Focal adhesion	rno04510	3	208	0.4738469	0.7982882	ENSRNO G00000005580 ENSRNOG00000004696 ENSRNO G00000012471	rno:25724 25724 299012 29220 29220	Itgb4 Arhgap5, LRRGT0098 Thbs4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04510/rno:25724%09red/rno:29220%09red/rno:29901">http://www.genome.jp/kegg-bin/show_pathway?rno04510/rno:25724%09red/rno:29220%09red/rno:29901</a>
Starch and sucrose metabolism	rno00500	1	52	0.4771935	0.7982882	ENSRNO G00000052010	rno:60576 60576	Treh	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00500/rno:60576%09">http://www.genome.jp/kegg-bin/show_pathway?rno00500/rno:60576%09</a>
Valine, leucine and isoleucine degradation	rno00280	1	52	0.4771935	0.7982882	ENSRNO G00000020607	rno:25244 25244	Bckdha, BCKDA, E1a	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00280/rno:25244%09">http://www.genome.jp/kegg-bin/show_pathway?rno00280/rno:25244%09</a>
Cytokine-cytokine receptor interaction	rno04060	3	215	0.495377	0.7982882	ENSRNO G00000020652 ENSRNOG00000012430 ENSRNO G00000017348	rno:59086 59086 29363 116562 116562	Tgfb1, Tgfb Cxcr5, Blr1, NLR Il2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04060/rno:116562%09red/rno:29363%09red/rno:59086">http://www.genome.jp/kegg-bin/show_pathway?rno04060/rno:116562%09red/rno:29363%09red/rno:59086</a>
Drug metabolism - other enzymes	rno00983	1	55	0.4960582	0.7982882	ENSRNO G00000038258	rno:116593 116593	Upb1, Bup1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00983/rno:116593%0">http://www.genome.jp/kegg-bin/show_pathway?rno00983/rno:116593%0</a>
FoxO signaling pathway	rno04068	2	135	0.4974896	0.7982882	ENSRNO G00000025584 ENSRNOG00020652	rno:65218 65218 59086 86 59086	Agap2, Centg1, Pike Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04068/rno:65218%09red/rno:59086%09red">http://www.genome.jp/kegg-bin/show_pathway?rno04068/rno:65218%09red/rno:59086%09red</a>
Ubiquitin mediated proteolysis	rno04120	2	135	0.4974896	0.7982882	ENSRNO G00000012937 ENSRNOG00019798	rno:291999 291999 28715 7155 5	Wwp2 Stub1, Chip	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04120/rno:291999%09red/rno:28715%09">http://www.genome.jp/kegg-bin/show_pathway?rno04120/rno:291999%09red/rno:28715%09</a>
Glutathione metabolism	rno00480	1	56	0.5021944	0.7982882	ENSRNO G00000015020	rno:24479 24479	Idh1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00480/rno:24479%09">http://www.genome.jp/kegg-bin/show_pathway?rno00480/rno:24479%09</a>

Non-small cell lung cancer	rno05223	1	56	0.5021944	0.7982882	ENSRNO G00000025602	rno:94201  94201	Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05223/rno:94201%09">http://www.genome.jp/kegg-bin/show_pathway?rno05223/rno:94201%09</a>
Lysine degradation	rno00310	1	57	0.5082562	0.7982882	ENSRNO G00000016790	rno:361688  361688	Suv420h1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00310/rno:361688%0">http://www.genome.jp/kegg-bin/show_pathway?rno00310/rno:361688%0</a>
Amyotrophic lateral sclerosis (ALS)	rno05014	1	59	0.5201598	0.7982882	ENSRNO G00000005479	rno:29482  29482	Slc1a2, Eaat2, Glt, Glt-1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05014/rno:29482%09">http://www.genome.jp/kegg-bin/show_pathway?rno05014/rno:29482%09</a>
Hepatitis B	rno05161	2	141	0.520288	0.7982882	ENSRNO G00000020652 ENSRNOG00025602	rno:59086  59086 94201  01	Tgfb1, Tgfb Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05161/rno:94201%09red/rno:59086%09red">http://www.genome.jp/kegg-bin/show_pathway?rno05161/rno:94201%09red/rno:59086%09red</a>
Arginine and proline metabolism	rno00330	1	60	0.5260035	0.7982882	ENSRNO G00000053811	rno:29215  29215	Arg2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00330/rno:29215%09">http://www.genome.jp/kegg-bin/show_pathway?rno00330/rno:29215%09</a>
Legionellosis	rno05134	1	61	0.5317762	0.7982882	ENSRNO G00000034066	rno:24468  24468	Hspa8, Hsc70	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05134/rno:24468%09">http://www.genome.jp/kegg-bin/show_pathway?rno05134/rno:24468%09</a>
Long-term depression	rno04730	1	62	0.5374788	0.7982882	ENSRNO G00000001313	rno:25740  25740	Gnaz, GXA	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04730/rno:25740%09">http://www.genome.jp/kegg-bin/show_pathway?rno04730/rno:25740%09</a>
Glioma	rno05214	1	64	0.5486773	0.7982882	ENSRNO G00000025602	rno:94201  94201	Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05214/rno:94201%09">http://www.genome.jp/kegg-bin/show_pathway?rno05214/rno:94201%09</a>
mTOR signaling pathway	rno04150	1	64	0.5486773	0.7982882	ENSRNO G00000010103	rno:300253  300253	Eif4b	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04150/rno:300253%0">http://www.genome.jp/kegg-bin/show_pathway?rno04150/rno:300253%0</a>

Viral carcinogenesis	rno05203	3	234	0.5514751	0.7982882	ENSRNO G0000002 6295 ENSRNO G0000002 00025602 ENSRNO G0000001 1909	rno:362268 362268 94 rno:94201  201 25597 rno:25597	Rbpjl, Rbpsuhl Cdk4 Rasa2, GAP1M	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05203/rno:362268%09red/rno:94201%09red/rno:25597">http://www.genome.jp/kegg-bin/show_pathway?rno05203/rno:362268%09red/rno:94201%09red/rno:25597</a>
Graft-versus-host disease	rno05332	1	66	0.5596054	0.7982882	ENSRNO G0000001 7348	rno:116562 116562	Il2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05332/rno:116562%0">http://www.genome.jp/kegg-bin/show_pathway?rno05332/rno:116562%0</a>
Inositol phosphate metabolism	rno00562	1	66	0.5596054	0.7982882	ENSRNO G0000001 5158	rno:316457 316457	Pikfyve, Pip5k3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00562/rno:316457%0">http://www.genome.jp/kegg-bin/show_pathway?rno00562/rno:316457%0</a>
Renal cell carcinoma	rno05211	1	68	0.5702698	0.7982882	ENSRNO G0000002 0652	rno:59086  59086	Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05211/rno:59086%09">http://www.genome.jp/kegg-bin/show_pathway?rno05211/rno:59086%09</a>
Colorectal cancer	rno05210	1	68	0.5702698	0.7982882	ENSRNO G0000002 0652	rno:59086  59086	Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05210/rno:59086%09">http://www.genome.jp/kegg-bin/show_pathway?rno05210/rno:59086%09</a>
Allograft rejection	rno05330	1	68	0.5702698	0.7982882	ENSRNO G0000001 7348	rno:116562 116562	Il2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05330/rno:116562%0">http://www.genome.jp/kegg-bin/show_pathway?rno05330/rno:116562%0</a>
Aminoacyl-tRNA biosynthesis	rno00970	1	69	0.575505	0.7982882	ENSRNO G0000000 2813	rno:304919 304919	Dars2, RGD13082 86	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00970/rno:304919%0">http://www.genome.jp/kegg-bin/show_pathway?rno00970/rno:304919%0</a>
Drug metabolism - cytochrome P450	rno00982	1	69	0.575505	0.7982882	ENSRNO G0000001 7512	rno:309147 309147	Aldh3b1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00982/rno:309147%0">http://www.genome.jp/kegg-bin/show_pathway?rno00982/rno:309147%0</a>
Thyroid hormone synthesis	rno04918	1	69	0.575505	0.7982882	ENSRNO G0000001 8294	rno:25617  25617	Hspa5, BIP, GRP78	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04918/rno:25617%09">http://www.genome.jp/kegg-bin/show_pathway?rno04918/rno:25617%09</a>

Melanoma	rno05218	1	71	0.5857856	0.7982882	ENSRNO G0000002 5602	rno:94201  94201	Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05218/rno:94201%09">http://www .genome.jp /kegg- bin/show_p athway?rno 05218/rno: 94201%09</a>
Complement and coagulation cascades	rno04610	1	72	0.5908324	0.7982882	ENSRNO G0000000 2783	rno:304917 304917	Serpinc1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04610/rno:304917%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04610/rno: 304917%0</a>
Leishmaniasis	rno05140	1	73	0.595818	0.7982882	ENSRNO G0000002 0652	rno:59086  59086	Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05140/rno:59086%09">http://www .genome.jp /kegg- bin/show_p athway?rno 05140/rno: 59086%09</a>
p53 signaling pathway	rno04115	1	75	0.6056081	0.7982882	ENSRNO G0000002 5602	rno:94201  94201	Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04115/rno:94201%09">http://www .genome.jp /kegg- bin/show_p athway?rno 04115/rno: 94201%09</a>
Prolactin signaling pathway	rno04917	1	75	0.6056081	0.7982882	ENSRNO G0000005 5684	rno:114596 114596	Wap	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04917/rno:114596%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04917/rno: 114596%0</a>
Glycolysis / Gluconeogenesis	rno00010	1	75	0.6056081	0.7982882	ENSRNO G0000001 7512	rno:309147 309147	Aldh3b1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00010/rno:309147%0">http://www .genome.jp /kegg- bin/show_p athway?rno 00010/rno: 309147%0</a>
Type I diabetes mellitus	rno04940	1	75	0.6056081	0.7982882	ENSRNO G0000001 7348	rno:116562 116562	Ii2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04940/rno:116562%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04940/rno: 116562%0</a>
RNA transport	rno03013	2	166	0.6076116	0.7982882	ENSRNO G0000004 9505 ENS RNOG000 00010103	rno:683983 683983 30  rno:30025 0253  3	Nup43 Eif4 b	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno03013/rno:683983%09red/rno:300253%09">http://www .genome.jp /kegg- bin/show_p athway?rno 03013/rno: 683983%0 9red/rno:3 00253%09</a>
Autoimmune thyroid disease	rno05320	1	76	0.6104142	0.7982882	ENSRNO G0000001 7348	rno:116562 116562	Ii2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05320/rno:116562%0">http://www .genome.jp /kegg- bin/show_p athway?rno 05320/rno: 116562%0</a>
Bacterial invasion of epithelial cells	rno05100	1	78	0.6198519	0.7982882	ENSRNO G0000001 4635	rno:83800  83800	Clta, LCA1, LCA2, LCA3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05100/rno:83800%09">http://www .genome.jp /kegg- bin/show_p athway?rno 05100/rno: 83800%09</a>



PPAR signaling pathway	rno03320	1	79	0.6244849	0.7982882	ENSRNO G00000007545	rno:362850 362850	Angptl4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno03320/rno:362850%0">http://www.genome.jp/kegg-bin/show_pathway?rno03320/rno:362850%0</a>
Cell adhesion molecules (CAMs)	rno04514	2	172	0.6266908	0.7982882	ENSRNO G00000007922 ENSRNOG00014297	rno:298487 298487 24 rno:24771  771	Cldn19, claudin-19 Sdc4, RATRYU DOCA, RYUDOC A	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04514/rno:24771%09red/rno:298487%09re">http://www.genome.jp/kegg-bin/show_pathway?rno04514/rno:24771%09red/rno:298487%09re</a>
Phosphatidylinositol signaling system	rno04070	1	81	0.6335828	0.7982882	ENSRNO G00000001518	rno:316457 316457	Pikfyve, Pip5k3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04070/rno:316457%0">http://www.genome.jp/kegg-bin/show_pathway?rno04070/rno:316457%0</a>
TGF-beta signaling pathway	rno04350	1	82	0.638049	0.7982882	ENSRNO G000000020652	rno:59086  59086	Tgfb1, Tgfb	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04350/rno:59086%09">http://www.genome.jp/kegg-bin/show_pathway?rno04350/rno:59086%09</a>
Influenza A	rno05164	2	176	0.6390066	0.7982882	ENSRNO G000000034066 ENSRNOG00020683	rno:24468  24468 361 rno:361522 522	Hspa8, Hsc70 Hnrnpul1, Hnrpul1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05164/rno:24468%09red/rno:361522%09re">http://www.genome.jp/kegg-bin/show_pathway?rno05164/rno:24468%09red/rno:361522%09re</a>
Hematopoietic cell lineage	rno04640	1	83	0.642461	0.7982882	ENSRNO G00000006094	rno:25406  25406	Cd44, CD44A, METAA, RHAMM	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04640/rno:25406%09">http://www.genome.jp/kegg-bin/show_pathway?rno04640/rno:25406%09</a>
Cardiac muscle contraction	rno04260	1	84	0.6468193	0.7982882	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04260/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04260/rno:682930%0</a>
Insulin secretion	rno04911	1	86	0.6553778	0.7982882	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04911/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04911/rno:682930%0</a>
Chemical carcinogenesis	rno05204	1	87	0.6595792	0.7982882	ENSRNO G000000017512	rno:309147 309147	Aldh3b1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05204/rno:309147%0">http://www.genome.jp/kegg-bin/show_pathway?rno05204/rno:309147%0</a>

Small cell lung cancer	rno05222	1	89	0.6678294	0.7982882	ENSRNO G00000025602	rno:94201  94201	Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05222/rno:94201%09">http://www.genome.jp/kegg-bin/show_pathway?rno05222/rno:94201%09</a>
GnRH signaling pathway	rno04912	1	90	0.6718794	0.7982882	ENSRNO G00000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04912/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04912/rno:682930%0</a>
GABAergic synapse	rno04727	1	90	0.6718794	0.7982882	ENSRNO G00000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04727/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04727/rno:682930%0</a>
Fc gamma R-mediated phagocytosis	rno04666	1	91	0.6758803	0.7982882	ENSRNO G00000058733	rno:314961 314961	Asap1, Ddef1	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04666/rno:314961%0">http://www.genome.jp/kegg-bin/show_pathway?rno04666/rno:314961%0</a>
Glycerophospholipid metabolism	rno00564	1	92	0.6798325	0.7982882	ENSRNO G00000016791	rno:29194  29194	Chka, CKR, Chk	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00564/rno:29194%09">http://www.genome.jp/kegg-bin/show_pathway?rno00564/rno:29194%09</a>
Neuroactive ligand-receptor interaction	rno04080	3	289	0.6912103	0.8011808	ENSRNO G00000015259 ENSRNO G00000000016887 ENSRNO G00000005662	rno:81753  81753 170 rno:170704 704 81672  rno:81672	Pth2r, Pthr2 Hrh4  Grm7	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04080/rno:170704%09red/rno:81753%09red/rno:81672">http://www.genome.jp/kegg-bin/show_pathway?rno04080/rno:170704%09red/rno:81753%09red/rno:81672</a>
mRNA surveillance pathway	rno03015	1	96	0.6951668	0.8011808	ENSRNO G00000019590	rno:681012 681012	Smg5	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno03015/rno:681012%0">http://www.genome.jp/kegg-bin/show_pathway?rno03015/rno:681012%0</a>
HTLV-I infection	rno05166	3	292	0.6978026	0.8011808	ENSRNO G00000020652 ENSRNO G00000000017348 ENSRNO G00000025602	rno:59086  59086 116 rno:116562 562 94201  rno:94201	Tgfb1, TgfbII2 Cdk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05166/rno:116562%09red/rno:94201%09red/rno:5908">http://www.genome.jp/kegg-bin/show_pathway?rno05166/rno:116562%09red/rno:94201%09red/rno:5908</a>
Retrograde endocannabinoid signaling	rno04723	1	103	0.7202609	0.8208856	ENSRNO G00000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04723/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04723/rno:682930%0</a>

Cholinergic synapse	rno04725	1	111	0.746428	0.8444988	ENSRNO G0000004 6231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04725/rno:682930%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04725/rno: 682930%0</a>
Regulation of actin cytoskeleton	rno04810	2	220	0.7540626	0.8469544	ENSRNO G0000001 5158 ENS RNOG000 00005580	rno:316457 316457 25  rno:25724  724	Pikfyve, Pip5k3 Itgb 4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04810/rno:25724%09red/rno:316457%09re">http://www .genome.jp /kegg- bin/show_p athway?rno 04810/rno: 25724%09 red/rno:31 6457%09re</a>
Pathways in cancer	rno05200	3	329	0.7704933	0.8591831	ENSRNO G0000002 0652 ENS RNOG000 00001304  ENSRNO G0000002 5602	rno:59086  59086 309 rno:309696 696 94201   rno:94201	Tgfb1, Tgfb BcrC dk4	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05200/rno:309696%09red/rno:94201%09red/rno:5908">http://www .genome.jp /kegg- bin/show_p athway?rno 05200/rno: 309696%0 9red/rno:9 4201%09re d/rno:5908</a>
Serotonergic synapse	rno04726	1	124	0.7838459	0.8602572	ENSRNO G0000004 6231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04726/rno:682930%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04726/rno: 682930%0</a>
Systemic lupus erythematosus	rno05322	1	126	0.7890921	0.8602572	ENSRNO G0000005 0410	rno:687711 687711	Snrpd3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05322/rno:687711%0">http://www .genome.jp /kegg- bin/show_p athway?rno 05322/rno: 687711%0</a>
Hepatitis C	rno05160	1	128	0.7942113	0.8602572	ENSRNO G0000000 7922	rno:298487 298487	Cldn19, claudin-19	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05160/rno:298487%0">http://www .genome.jp /kegg- bin/show_p athway?rno 05160/rno: 298487%0</a>
AMPK signaling pathway	rno04152	1	130	0.7992067	0.8602572	ENSRNO G0000000 7648	rno:79434  79434	Rab11b	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04152/rno:79434%09">http://www .genome.jp /kegg- bin/show_p athway?rno 04152/rno: 79434%09</a>
Axon guidance	rno04360	1	130	0.7992067	0.8602572	ENSRNO G0000001 9737	rno:310630 310630	Sema4a	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04360/rno:310630%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04360/rno: 310630%0</a>
Jak-STAT signaling pathway	rno04630	1	142	0.8267401	0.8761699	ENSRNO G0000001 7348	rno:116562 116562	Il2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04630/rno:116562%0">http://www .genome.jp /kegg- bin/show_p athway?rno 04630/rno: 116562%0</a>

Wnt signaling pathway	rno04310	1	142	0.8267401	0.8761699	ENSRNO G00000015911	rno:293649 293649	Lrp5	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04310/rno:293649%0">http://www.genome.jp/kegg-bin/show_pathway?rno04310/rno:293649%0</a>
MicroRNAs in cancer	rno05206	1	144	0.8309482	0.8761699	ENSRNO G00000006094	rno:25406 25406	Cd44, CD44A, METAA, RHAMM	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno05206/rno:25406%09">http://www.genome.jp/kegg-bin/show_pathway?rno05206/rno:25406%09</a>
Adrenergic signaling in cardiomyocytes	rno04261	1	148	0.8390611	0.8787465	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04261/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04261/rno:682930%0</a>
Oxytocin signaling pathway	rno04921	1	158	0.8576856	0.8922232	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04921/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04921/rno:682930%0</a>
cGMP-PKG signaling pathway	rno04022	1	171	0.8787221	0.9057684	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04022/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04022/rno:682930%0</a>
Chemokine signaling pathway	rno04062	1	178	0.8887343	0.9057684	ENSRNO G000000012430	rno:29363 29363	Cxcr5, Blr1, NLR	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04062/rno:29363%09">http://www.genome.jp/kegg-bin/show_pathway?rno04062/rno:29363%09</a>
Calcium signaling pathway	rno04020	1	182	0.8940811	0.9057684	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04020/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04020/rno:682930%0</a>
Purine metabolism	rno00230	1	182	0.8940811	0.9057684	ENSRNO G000000020906	rno:85242 85242	Pola2	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno00230/rno:85242%09">http://www.genome.jp/kegg-bin/show_pathway?rno00230/rno:85242%09</a>
cAMP signaling pathway	rno04024	1	195	0.9097515	0.915659	ENSRNO G000000046231	rno:682930 682930	Cacna1s, Cchl1a3	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04024/rno:682930%0">http://www.genome.jp/kegg-bin/show_pathway?rno04024/rno:682930%0</a>
Ras signaling pathway	rno04014	1	230	0.9413787	0.9413787	ENSRNO G000000011909	rno:25597 25597	Rasa2, GAP1M	<a href="http://www.genome.jp/kegg-bin/show_pathway?rno04014/rno:25597%09">http://www.genome.jp/kegg-bin/show_pathway?rno04014/rno:25597%09</a>

---

##Databases: KEGG PATHWAY. ##Statistical test method: hypergeometric test / Fisher's exact test. ##FDR correction method: Benjamini and Hochberg. KEGG: Kyoto Encyclopedia of Genes and Genomes; IR: ischemia/reperfusion; ISP: *in situ* ischemic