

Supplemental file

Table SI. Biochemical parameters in CK, DbCM and SPM mouse (mean \pm SEM, n=10)

Group	Blood Glucose Concentration (mmol/L)	Body Weight (g)	Serum Insulin (ng/mL)	Serum Triglyceride Content (mmol/L)
CK	5.5 \pm 1.1	22.4 \pm 1.0	0.7 \pm 0.1	1.0 \pm 0.2
DbCM	26.1 \pm 3.1*	16.2 \pm 2.2*	0.4 \pm 0.1*	7.5 \pm 1.2*
SPM	24.6 \pm 5.8	17.7 \pm 1.6	0.4 \pm 0.1	6.2 \pm 0.7 [#]

*P < 0.05 versus CK group; [#]P < 0.05 versus DbCM group.
 CK, control check; DbCM, diabetic cardiomyopathy; SPM, spermine.

Table SII. Heart function related indexes in CK, DbCM and SPM mouse (mean \pm SEM, n=10)

Group	EF (%)	FS (%)	LVIDd (mm)	LVIDs (mm)
CK-0W	78.2 \pm 4.5	48.1 \pm 3.2	2.4 \pm 0.4	2.1 \pm 0.3
DbCM-0W	76.4 \pm 4.8	47.6 \pm 6.7	2.4 \pm 0.3	2.1 \pm 0.5
SPM-0W	77.7 \pm 4.7	49.4 \pm 5.4	2.4 \pm 0.5	2.0 \pm 0.5
CK-12W	75.0 \pm 4.0	46.0 \pm 5.1	2.7 \pm 0.4	2.2 \pm 0.3
DbCM-12W	48.6 \pm 4.1*	27.2 \pm 2.5*	4.4 \pm 0.4*	3.3 \pm 0.5*
SPM-12W	68.1 \pm 5.6 [#]	33.7 \pm 6.3 [#]	3.2 \pm 0.5 [#]	2.9 \pm 0.4 [#]

*P < 0.05 versus CK-12W group; [#]P < 0.05 versus DbCM-12W group.

CK, control check; DbCM, diabetic cardiomyopathy; SPM, spermine; EF, ejection fraction; FS, fractional shortening;
 LVIDd, left ventricular internal dimension at end-diastole; LVIDs, left ventricular internal dimension at end-systole.

Table SIII. Venn analysis identified 174 genes that differentially expressed in DbCM but reversal regulated by SPM.

Gene_ID	CK-1	CK-2	CK-3	DbCM-1	DbCM-2	DbCM-3	SPM-1	SPM-2	SPM-3	KEGG_ID	symbol	ncbi_description
ENSMUSG0000000682	22.7727 1731	15.5113 8441	12.9437 3218	8.42501 1863	2.73783 4646	6.902498 623	15.415 60521	12.1607 0637	10.6942 6228	K06488	Cd52	CD52 antigen spleen focus forming virus (SFFV) proviral integration oncogene
ENSMUSG0000002111	10.2434 683	6.78369 4526	5.78577 1471	4.64179 0254	4.31206 922	4.009051 857	8.3791 84085	6.59395 1844	5.29561 7353	K09438	Spi1	interferon regulatory factor 9
ENSMUSG0000002325	14.1068 9242	11.9535 8574	11.4235 8155	7.40540 3474	6.27634 8554	6.921892 999	9.0497 37664	8.75162 8539	8.95970 8244	K04693	Irf9	Epstein-Barr virus induced gene 3
ENSMUSG0000003206	1.53596 03	1.01976 1406	1.30369 5798	0.50179 6029	0.05671 8673	0.297524 819	1.4250 65103	0.92542 6546	0.71587 2017	None	Ebi3	hemopoietic cell kinase
ENSMUSG0000003283	3.37311 1559	3.17827 263	2.28530 3675	1.46826 1272	1.01684 2184	2.201972 842	3.1729 93036	2.89777 3747	2.73387 5116	K08893	Hck	histone deacetylase 9 adhesion G protein-coupled receptor E1
ENSMUSG0000004698	2.91471 1146	3.69048 3135	3.96643 1525	2.28623 019	2.12682 1674	2.526069 4	3.1858 67321	3.20034 5485	3.36945 3258	K11409	Hdac9	POU domain, class 2, transcription factor 2 polycystic kidney disease 2-like 2
ENSMUSG0000004730	11.1443 4453	10.9939 2867	9.10670 5695	5.45840 129	4.54817 899	5.354803 545	15.615 09346	11.2719 2598	6.95724 4046	K04591	Adgre1	cytochrome b-245, beta polypeptide
ENSMUSG0000008496	0.27810 5477	0.44783 2641	0.16492 4511	0.21646 2479	0.05535 167	0.064523 118	0.2823 58085	0.30989 494	0.23287 2814	K09364	Pou2f2	CD48 antigen
ENSMUSG0000014503	5.96571 9592	8.40403 9797	8.32757 2486	5.07428 9674	4.96019 8954	5.231770 233	6.5486 98198	6.66235 4446	6.98479 2332	K04991	Pkd2l2	
ENSMUSG0000015340	5.89059 2169	6.34587 9518	4.96000 6503	3.95775 9163	2.64457 9766	3.522306 925	7.1542 12855	6.04802 4013	5.09502 5787	K08008	Cybb	
ENSMUSG0000015355	5.10391 9495	5.33332 6357	4.00288 5948	3.22674 0886	2.37309 7821	2.098854 468	6.0758 93855	5.05845 0715	3.88464 3421	K06479	Cd48	

ENSMUSG00	0.64753	0.81637	0.73386	0.35974	0.35579	0.388089	0.5758	0.50734	0.57243			calcium channel,
000015968	6622	9296	8456	6915	8388	468	42305	8338	9896	K04851	Cacna1d	voltage-dependent, L type,
ENSMUSG00	0.70322	0.75922	0.43138	0.36697	0.32061	0.252961	0.5501	0.64546	0.56942			alpha 1D subunit
000016984	9595	8814	78	7608	9751	265	39828	3716	1221	None	Etaa1	Ewing tumor-associated
ENSMUSG00	0.05366	0.04046	0.04598				0.3495	0.18002				antigen 1
000017950	8852	7836	7008	0	0	0	92687	1009	0	K07292	Hnf4a	hepatic nuclear factor 4,
ENSMUSG00	1.71006	1.47584	1.06196	1.07281	0.49441	0.581882	1.2219	1.10723	1.19389			alpha
000018654	1508	9349	7641	7252	8094	018	63278	0671	8625	K09220	Ikzf1	IKAROS family zinc finger 1
ENSMUSG00	0.13882	0.47629	0.06939	0.02090	0.01358	0.023754	0.3847	0.16950	0.14508			arachidonate
000018924	6741	0804	0939	2508	517	23	71342	2223	5407	K00460	Alox15	15-lipoxygenase
ENSMUSG00	2.22816	2.01520	1.87794	1.09209	0.94467	1.236622	1.7495	1.67611	1.45755			
000020143	595	2242	0335	3237	6986	83	19634	8344	4847	K12367	Dock2	dedicator of cyto-kinesis 2
ENSMUSG00	1.63154	1.52091	1.38603	0.95279	0.81800	1.085657	1.0445	1.29272	1.53733			
000020181	7273	5482	1419	6177	2608	97	05019	5049	4409	None	Nav3	neuron navigator 3
ENSMUSG00	1.88611	1.27536	1.29452	1.13381	0.74378	0.842945	1.7366	1.39468	1.13668			
000020437	5533	7006	652	5878	8059	247	42698	0947	5543	K10356	Myo1g	myosin IG
ENSMUSG00	2.38334	2.90515	2.63929	1.73319	1.62685	2.293428	2.5135	2.70812	2.66243			ATP-binding cassette,
000020620	0765	2288	3671	1828	4766	83	23522	9064	3512	K05650	Abca8b	sub-family A (ABC1),
												member 8b
ENSMUSG00	0.09560	0.37006	0.19115	0.05758		0.016359	1.2992	0.75427	0.05450			solute carrier family 10
000021135	7095	4359	2398	0492	0	045	76572	259	035	K14341	Slc10a1	(sodium/bile acid
ENSMUSG00	3.74053	4.75418	3.44616	2.55014	2.40120	2.611328	3.6599	3.29389	2.99086			cotransporter family),
000021219	3509	1326	1663	7067	5545	695	70028	7369	7639	K16449	Rgs6	member 1
ENSMUSG00	4.52307	3.93510	2.92721	1.94174	1.08519	1.577709	3.3197	2.43416	1.91778			regulator of G-protein
000021423	7647	5009	6952	8718	8972	23	97375	3064	691	None	Ly86	signaling 6
ENSMUSG00	15.9772	15.0355	10.4971	8.71791	6.44990	8.194003	17.157	14.0490	10.6215			lymphocyte antigen 86
000021998	3751	8678	78	2925	6971	413	1484	739	6628	K17276	Lcp1	lymphocyte cytosolic protein
ENSMUSG00	3.34433	2.06098	2.37782	1.23865	1.20756	1.300544	2.7022	2.11640	1.56319	None	Epsti1	1
												epithelial stromal interaction

000022014	6199	1427	3393	8006	179	095	33805	0148	8278			1 (breast)
ENSMUSG00	0.95230	1.02512	0.77662	0.49052	0.40463	0.503845	1.9268	1.75350	1.01190			
000022148	2552	9577	7342	3663	8539	109	93438	3105	1405	K17698	Fyb	FYN binding protein
ENSMUSG00	5.61409	5.40429	3.97145	2.56208	2.38632	2.722493	4.1927	3.78154	3.36704			
000022488	0014	6251	5288	969	0023	148	72401	0361	5168	K05750	Nckap1l	NCK associated protein 1 like
ENSMUSG00	1.31768	0.97427	1.12330	0.33472	0.71196	0.753856	1.2142	1.57164	2.25034			
000022523	6247	0237	797	0539	5365	597	31752	2156	9361	K04358	Fgf12	fibroblast growth factor 12
ENSMUSG00	1.96871	2.02596	1.51009	1.10924	0.76333	1.207613	1.5498	1.67458	1.50575		Tmem45	
000022754	3275	8782	687	5231	9689	695	20054	3288	125	None	a	transmembrane protein 45a
ENSMUSG00	13.7522	11.9227	10.1657	9.31651	6.96415	7.209762	12.799	10.4232	9.88200			hematopoietic cell specific
000022831	555	3573	5193	5114	8435	306	64995	8073	024	K06106	Hcls1	Lyn substrate 1
ENSMUSG00	3.25444	3.24966	2.81392	2.17341	1.55382	2.189261	2.5635	2.82856	2.69300			StAR-related lipid transfer
000024378	5272	1688	3066	7883	6811	985	66738	9777	3763	None	Stard4	(START) domain containing 4
ENSMUSG00	6.26824	5.11069	3.74444	2.90615	1.30906	1.994663	6.1509	3.69741	2.68714			allograft inflammatory factor
000024397	1562	4533	61	3262	6984	058	51132	3447	7548	K18617	Aif1	1
ENSMUSG00	1.92013	2.29018	2.62608	1.56081	1.40635	1.511727	2.3697	2.75488	2.49578			
000024766	667	8714	6526	8732	9388	902	0863	0718	5847	None	Lipo3	lipase, member O3
ENSMUSG00	3.63208	3.07139	2.48027	2.28182	1.33910	1.761578	4.9395	3.44729	2.74602			phosphoinositide-3-kinase
000025017	9792	2665	3639	2436	2938	274	78347	9753	5672	K12230	Pik3ap1	adaptor protein 1
ENSMUSG00	0.36634	0.16113	0.16198	0.02651	0.04825	0.036164	0.1952	0.13895	0.06693			
000025279	8183	8199	6255	8928	9263	277	63148	3314	4283	K11995	Dnase1l3	deoxyribonuclease 1-like 3
ENSMUSG00	6.23938	3.74676	4.10848	2.73228	2.52232	3.110600	3.3899	3.84165	4.50913			signal transducer and
000026104	4756	6931	5144	156	3785	515	95501	0434	9529	K11220	Stat1	activator of transcription 1
ENSMUSG00	3.39450	4.74215	4.10837	3.19836	2.12049	2.547953	3.8747	4.04029	3.85381			CD55 molecule, decay
000026399	658	0929	3275	3866	6312	928	48005	8907	665	K04006	Cd55	accelerating factor for
ENSMUSG00	8.99124	7.14776	6.87493	3.95009	2.54236	2.789285	8.0159	4.47348	4.06548			complement
000026548	6599	6323	5039	6336	1622	737	64072	2319	5371	None	Slamf9	SLAM family member 9
ENSMUSG00	2.37221	2.89898	2.42645	1.79507	1.93248	1.694749	2.3614	2.30263	2.64296			interferon induced with
000026896	6536	4063	7792	4485	9195	234	2548	9185	8076	K12647	Ifih1	helicase C domain 1
ENSMUSG00	3.36685	3.27504	2.63293	2.09710	2.04445	2.029313	3.8341	3.21133	2.57194	K06548	Siglec1	sialic acid binding Ig-like

000027322	1693	3506	7983	3714	6422	051	12133	1282	3797			lectin 1, sialoadhesin
ENSMUSG00	2.62517	1.43340	1.17642	0.88592	0.64961	0.894930	1.2859	1.62482	1.72008			
000027514	819	1168	3721	9994	2188	794	44462	1443	0223	K12965	Zbp1	Z-DNA binding protein 1
ENSMUSG00	3.45085	3.26998	2.54016	2.31388	1.53100	1.765702	3.5317	3.09515	2.53008			
000027995	7857	6412	4225	4699	8998	202	06256	2459	9246	K10159	Tlr2	toll-like receptor 2
ENSMUSG00	6.02748	5.97802	5.57487	4.23598	4.72192	2.799773	5.3441	5.62966	6.21831			secreted frizzled-related
000027996	5612	6679	4285	2378	1598	409	65536	2299	853	K02176	Sfrp2	protein 2
ENSMUSG00	11.1851	7.76638	6.20783	4.03659	3.24582	4.149909	4.9276	6.53498	8.19813			
000028268	9601	4237	4499	2187	2313	16	66647	0111	6932	None	Gbp3	guanylate binding protein 3
ENSMUSG00	22.1715	13.9266	13.0886	10.0368	7.19310	8.676841	11.064	12.8461	14.6113			
000028270	1344	132	5904	0507	4553	488	11978	6757	5758	None	Gbp2	guanylate binding protein 2
ENSMUSG00	25.7385	21.0580	16.1762	14.2637	10.2837	12.19310	18.791	16.6473	14.2859			lysosomal-associated protein
000028581	259	142	1289	7869	2813	11	28714	3482	462	K12387	Laptm5	transmembrane 5
												sema domain,
												immunoglobulin domain (Ig),
ENSMUSG00	1.81499	2.42176	2.27713	1.69192	1.07281	0.932715	1.6172	1.88197	2.23937			short basic domain,
000028780	2146	1552	9933	1135	0313	835	71116	2612	7799	K06840	Sema3c	secreted, (semaphorin) 3C
ENSMUSG00	2.75962	2.16324	1.52959	1.00790	0.58822	1.215541	3.5421	4.02890	4.36109			
000029322	3825	3865	3995	5594	4544	213	29289	5485	6644	None	Plac8	placenta-specific 8
ENSMUSG00	1.23316	14.6088	0.54241	0.17329	0.14480	0.126601	118.20	54.3113	0.14059			
000029368	2315	0911	6075	3503	8295	638	52969	0828	1611	K16141	Alb	albumin
ENSMUSG00	8.66126	12.8251	12.7610	8.13347	6.72283	8.515698	9.4667	10.1789	10.8784			
000029469	392	7624	3604	3908	5529	219	88725	9078	5463	K19677	Ift81	intraflagellar transport 81
ENSMUSG00	9.46890	11.0827	9.37185	6.73410	7.47850	7.262154	8.9341	9.59962	9.65971			
000029669	3697	5877	6634	7969	516	659	12421	2487	6474	K17355	Tspan12	tetraspanin 12
ENSMUSG00	5.93388	6.05524	5.94382	3.83284	4.00663	4.233921	5.9843	6.35334	5.85186			
000030245	254	0455	8882	7116	6884	764	35588	8987	3889	None	Golt1b	golgi transport 1B
ENSMUSG00	1.79063	1.70251	1.64540	1.04847	0.70798	0.866560	3.4121	2.24236	1.34037			sialic acid binding Ig-like
000030474	9717	621	9657	724	6471	479	12712	2721	2591	None	Siglece	lectin E
ENSMUSG00	16.7009	17.5332	17.4534	11.0872	10.5192	11.43590	19.797	15.7342	14.0712			
000030560	0872	9307	5468	9371	8827	233	44537	9688	1182	K01275	Ctsc	cathepsin C

ENSMUSG00	38.5971	41.0008	32.7605	23.7853	16.6648	21.85436	37.513	27.2536	24.2693			TYRO protein tyrosine kinase
000030579	1292	9946	4332	7298	3933	912	30354	2484	6194	K07992	Tyrobp	binding protein
ENSMUSG00	3.81348	4.87604	4.07822	2.71065	2.39526	3.459840	4.0279	4.01475	3.92642			tripartite motif-containing
000030921	3335	6897	1972	7798	974	457	58659	78	4323	None	Trim30a	30A
ENSMUSG00	0.61057	0.62586	0.35030	0.39170	0.14547	0.240742	0.5079	0.47870	0.47920			Rho GTPase activating
000031389	0984	0552	1412	5492	4978	088	13778	5558	3348	K20122	Arhgap4	protein 4
												procollagen lysine,
ENSMUSG00	5.43237	6.62615	6.69016	4.54328	3.76137	4.561668	5.8037	6.42264	6.56639			2-oxoglutarate
000032374	7938	2378	1732	2417	8653	178	74188	2426	2034	K13645	Plod2	5-dioxygenase 2
ENSMUSG00	0.58437	0.41294	0.27772	0.12260	0.04687	0.122938	0.4453	0.51285	0.45508			adhesion G protein-coupled
000032915	2696	3486	6749	3895	2923	857	80624	4123	0265	K08445	Adgre4	receptor E4
ENSMUSG00	6.21971	5.37464	3.88469	4.06081	2.59615	3.032605	6.2596	4.78698	3.82790			RAS-related C3 botulinum
000033220	6763	2755	1155	7796	8189	126	08487	4996	5105	K07860	Rac2	substrate 2
ENSMUSG00	12.2511	10.0493	8.11085	6.58206	4.94685	5.063656	7.2217	7.80605	8.54591			receptor transporter protein
000033355	7241	6741	641	3573	076	892	88674	1829	2889	None	Rtp4	4
ENSMUSG00	0.20047	0.20977	0.49153	0.07466	0.06195	0.160680	0.1660	0.26558	0.31877			Fraser extracellular matrix
000034687	4469	2411	112	698	105	549	29796	2332	9591	None	Fras1	complex subunit 1
ENSMUSG00	0.72299	0.91026	0.79569	0.45690	0.44786	0.547611	0.6434	0.68526	0.67429			immunoglobulin
000036334	2157	1441	7449	2407	6035	09	3506	5217	3205	None	Igsf10	superfamily, member 10
ENSMUSG00	39.9052	39.4431	43.8255	27.4191	26.5369	28.50677	35.286	36.9016	37.7572			
000036446	5343	4646	9938	4604	4816	903	93626	9483	3255	K08122	Lum	lumican
ENSMUSG00	3.96158	4.17144	5.32040	2.66607	2.62361	3.089716	4.2663	4.22809	4.25803			family with sequence
000036501	2815	3389	6514	3257	6151	185	82871	7386	7525	None	Fam13b	similarity 13, member B
ENSMUSG00	4.64883	3.65959	3.02945	2.62482	1.84944	2.044375	3.5057	3.26444	2.71402			thymocyte selection
000037731	3691	8779	1996	6105	5073	908	04754	3333	5393	None	Themis2	associated family member 2
ENSMUSG00	17.0072	15.2567	13.1060	11.4630	10.1746	10.64865	16.617	13.9302	11.7854			signal-regulatory protein
000037902	3457	9073	3152	9104	919	386	2052	3004	7488	K06551	Sirpa	alpha
ENSMUSG00	32.0858	29.3332	26.3759	19.6028	14.9262	14.04203	35.968	28.9992	20.0959			
000038642	8236	6751	415	1122	6192	699	8153	5622	8851	K01368	Ctss	cathepsin S
ENSMUSG00	3.31318	3.08068	3.41591	2.36634	2.21687	2.220799	2.7765	3.23586	3.21952			lysophosphatidic acid
000038668	6582	3952	44	6153	8889	26	31278	6209	0118	K04289	Lpar1	receptor 1

ENSMUSG0000039031	6.641040111	8.597990788	7.948358608	5.399519604	4.490841955	5.140907254	5.609918645	6.727655813	7.388626349	None	Arhgap18	Rho GTPase activating protein 18
ENSMUSG0000039145	1.753350636	1.660744873	1.771992617	1.17893205	1.099977285	1.426077797	1.511772598	1.615168561	1.834678118	K08794	Camk1d	calcium/calmodulin-dependent protein kinase ID
ENSMUSG0000039232	1.322347167	1.649726162	1.345954745	0.935165565	0.737193245	0.932477338	0.974469719	1.377436382	1.538051338	K08487	Stx11	syntaxin 11
ENSMUSG0000040653	36.91932472	44.36063429	41.60864727	30.68966541	26.51148267	29.7599475	42.45704922	41.8640845	41.42601393	K17556	Ppp1r14c	protein phosphatase 1, regulatory (inhibitor) subunit 14c
ENSMUSG0000040747	7.180147753	6.367040151	5.738423528	4.205813701	2.686518064	4.352567208	8.685207341	7.55500432	5.271297641	K06489	Cd53	CD53 antigen
ENSMUSG0000042302	10.10723881	14.08037683	13.35712045	8.75160154	8.301653486	9.849185902	12.91775585	13.11553873	12.90216404	None	Ehbp1	EH domain binding protein 1
ENSMUSG0000043629	0.394964176	0.492894015	0.560116952	0.221276092	0.143814005	0.227889902	0.459880688	0.362324295	0.44505875	None	1700019D03Rik	RIKEN cDNA 1700019D03 gene
ENSMUSG0000044768	0.153227549	0.135522851	0.125026394	0.093530154	0.070514158	0.094952796	0.119222685	0.135354684	0.150299111	None	D1Ertd622e	DNA segment, Chr 1, ERATO Doi 622, expressed
ENSMUSG0000044811	4.462615023	4.064317515	3.910086826	2.312179929	1.207341999	2.021253775	3.872508153	3.007871283	2.494011312	K06719	Cd300c2	CD300C molecule 2
ENSMUSG0000044951	25.04500202	25.99278652	25.46899321	16.54519018	15.76707856	18.61755369	30.53914912	26.5330765	22.46003354	K00907	Mylk4	myosin light chain kinase family, member 4
ENSMUSG0000045868	0.308250866	0.251565683	0.207909278	0.123019555	0.090856953	0.162044473	0.185943985	0.345318879	0.328145973	None	Gvin1	GTPase, very large interferon inducible 1
ENSMUSG0000046879	5.725168442	4.046033775	3.734116209	2.194452373	2.263196443	3.210633388	4.018459108	3.745929025	3.946837986	K14139	Irgm1	immunity-related GTPase family M member 1
ENSMUSG0000048865	2.899713468	3.231111067	2.28570185	1.906973635	1.330723863	1.534108024	2.753440519	2.335251047	1.709966138	None	Arhgap30	Rho GTPase activating protein 30
ENSMUSG0000051457	2.046094015	1.241885764	0.839609971	0.827352298	0.620783836	0.74148039	2.819893477	2.240579092	1.536478879	K06477	Spn	sialophorin
ENSMUSG0000052336	4.704252121	3.04481509	2.009078501	0.93020113	0.77209604	0.815119558	1.523971651	1.489059424	1.414364751	K04192	Cx3cr1	chemokine (C-X3-C motif) receptor 1

ENSMUSG00	2.99462	3.02334	2.75256	1.69461	1.39639	1.796845	3.0727	2.54829	2.18635			
000052889	7967	1305	0073	0503	0563	478	03202	2589	1636	K19662	Prkcb	protein kinase C, beta
ENSMUSG00	2.37920	2.32048	1.98547	1.24600	1.10337	0.796497	2.4786	1.99166	1.48401			C-type lectin domain family
000053063	6081	5531	8026	41	3811	776	02675	8255	773	K17516	Clec12a	12, member a
ENSMUSG00	0.82650	0.42560	0.58441	0.19728	0.03945	0.172465	0.7389	0.81412	0.49796			
000053318	8645	7473	4756	8677	3496	16	50411	4668	0402	K16853	Slamf8	SLAM family member 8
ENSMUSG00	15.9340	13.6684	12.9723	9.26896	5.12763	8.470829	14.935	15.8006	16.6962			interferon inducible GTPase
000054072	85	2967	8816	9502	3413	981	85783	4183	1107	None	ligp1	1
ENSMUSG00	16.6348	11.2234	10.2090	8.62467	6.56798	7.301497	12.337	12.0097	9.86743			histocompatibility 2, Q
000055413	9027	1817	7589	1153	3138	56	81829	31	9255		H2-Q5	region locus 5
ENSMUSG00	0.99918	0.59460	0.54349	0.45722	0.24923	0.293327	0.8013	0.77283	0.61890			leukocyte-associated Ig-like
000055541	6562	6925	9348	8577	6538	169	74284	1142	7828	K06725	Lair1	receptor 1
ENSMUSG00	1.35989	1.53746	1.36449	0.85693	0.98574	0.982459	1.1527	1.41439	1.55040			
000055660	5744	6935	1304	0406	3211	214	887	9043	3635	None	Mettl4	methyltransferase like 4
												membrane-spanning
ENSMUSG00	0.41484	0.49693	0.46764	0.15947	0.08637	0.181231	0.4498	0.35646	0.29350			4-domains, subfamily A,
000056290	2442	5197	9878	4713	2855	798	08932	1553	2149	None	Ms4a4b	member 4B
ENSMUSG00	26.9384	24.8771	22.7351	18.3921	14.5289	14.69894	34.717	25.1140	16.7714			Fc receptor, IgG, low affinity
000059498	1705	4385	2984	5829	914	826	38276	6144	2066	K16824	Fcgr3	III
ENSMUSG00	9.89400	2.78136	4.90453	1.21063	0.64013	1.422436	2.5343	2.25271	2.30469		BC02310	
000063388	1959	3913	1218	3374	0555	981	50055	8648	4105	None	5	cDNA sequence BC023105
ENSMUSG00	2.13155	1.84279	2.46151	0.94068	0.82715	0.848926	1.5443	1.76034	1.64105			guanine nucleotide binding
000063594	494	851	7747	1749	771	585	09312	4341	9444	K04544	Gng8	protein (G protein), gamma 8
												leukocyte
ENSMUSG00	2.20418	1.54842	1.49011	0.82371	0.63622	0.976795	1.5028	1.35529	1.26552			immunoglobulin-like
000070873	5546	7187	8597	6384	2693	565	20498	4442	4488	K06512	Lilra5	receptor, subfamily A (with
ENSMUSG00	10.0081	10.1575	12.3973	7.41740	6.84340	8.376180	12.268	11.2679	10.6453			TM domain), member 5
000071342	4365	96	8776	8268	3146	837	63543	232	7206	None	Lsmem1	leucine-rich single-pass
												membrane protein 1
ENSMUSG00	2.97892	1.87903	1.78236	1.49175	1.08397	1.389443	1.8623	2.11804	2.32285			NLR family, CARD domain
000074151	1793	6212	3685	3046	9325	784	66806	481	9868		Nlrc5	containing 5

ENSMUSG00	1.08130	1.04778	0.65020	0.37947	0.08353	0.260835	0.7668	0.67577	0.47504	K04180	Ccr5	chemokine (C-C motif)
000079227	9626	0984	1618	6932	7154	998	64763	2654	1401			receptor 5
ENSMUSG00	0.44295	0.36183	0.47444	0.11909	0.12384	0.054138	0.3960	0.56460	0.57114			prostaglandin-endoperoxide
000083816	8437	6817	4955	6832	7397	07	32542	856	5107	None	Mndal	synthase 2 pseudogene
ENSMUSG00	5.24925	8.66920	6.23766	4.69740	3.24682	4.321452	6.6117	6.72851	6.97892			myeloid nuclear
000090272	4252	5126	3173	0092	211	542	49599	3579	3166			differentiation antigen like
ENSMUSG00	3.86971	2.68359	2.68251	1.59483	1.46496	0.942455	3.1062	2.73246	2.20054	None	Phf11b	PHD finger protein 11B
000091649	3339	1713	0705	1313	0941	096	13005	3485	3698			galactose-3-O-sulfotransfera
ENSMUSG00	0.89690	0.99436	1.06856	0.54571	0.34866	0.620171	1.0655	1.03854	0.91048			se 2B
000093805	1332	103	4379	9012	7731	284	19588	0012	8215	BC14752	Gal3st2b	
ENSMUSG00	0.64999	0.90381	0.33537	0.14206	0.04103	0.161446	0.4124	0.41354	0.27889			cDNA sequence BC147527
000094796	6377	5493	3587	4974	6583	853	20095	9454	1447			phospholipid scramblase
ENSMUSG00	1.60056	2.17377	1.82461	1.09925	0.76939	0.840821	1.2803	2.08345	2.02754	Gm2865	Plscr5	family, member 5
000095654	3924	8553	4644	0762	2854	959	7221	5239	1153			
ENSMUSG00	1.78828	1.61685	1.76287	0.83206	0.91143	1.243074	1.4767	1.70288	1.73439			predicted gene 28651
000101086	226	0074	5134	805	728	824	02847	5106	8257	7		
ENSMUSG00	2.82779	2.42127	2.22381	0.99345	0.77481	0.999967	2.5282	2.97457	2.29257			
000103649	2728	2276	1402	8243	4168	388	23525	2174	8426			
ENSMUSG00	0.05627	0.12185	0.04327	0.03584	0.00847	0.003703	0.0774	0.10976	0.15216	Gbp5	Gm3408	guanylate binding protein 5
000105449	2807	3965	2786	6204	1829	336	02166	8544	5034			
ENSMUSG00	8.16495	5.26366	4.12121	3.61300	2.68365	2.940420	4.2191	5.55279	6.01467			
000105504	2862	3026	2119	3437	7023	782	80552	1166	0828	Gm4084	4	predicted gene, 34084
ENSMUSG00	0.38647	0.54397	0.72119	0.05819	0.02521	0.044086	0.4607	0.36298	0.09791			
000113010	953	7502	532	0455	3155	241	15823	2269	5883			
ENSMUSG00	0.48626	0.79653	0.38553	0.20828	0.08204	0.157799	0.3373	0.33071	0.31861	1		predicted gene, 40841
000113216	598	3615	4597	361	2303	785	07736	5156	3228			
ENSMUSG00	7.13356	8.95199	8.56261	10.2402	11.0590	9.996689	7.8408	7.37224	7.53046			
000000296	1159	2653	9073	1515	1389	858	69048	019	5044	None	Tpd52l1	tumor protein D52-like 1
ENSMUSG00	6.82230	5.84690	8.64816	11.2118	11.3046	9.281590	7.8445	7.94334	8.06871			
000001739	5181	0136	8664	7096	3997	721	46788	4689	6662			claudin 15
ENSMUSG00	53.5117	52.8090	58.3211	81.3093	95.6044	78.10630	69.504	65.0465	60.6493	K06087	Cldn15	
										K20254	Plin4	perilipin 4

000002831	0326	07	0483	399	186	406	5367	5717	5496			
ENSMUSG00	25.0281	26.4699	30.9802	83.9235	82.4700	74.70460	59.412	56.8997	52.3661			indolethylamine
000003477	7991	0988	1296	6779	0452	531	23561	5689	326	K00562	Inmt	N-methyltransferase
ENSMUSG00	107.436	100.081	117.215	145.167	172.680	145.8547	104.68	112.086	116.679			
000011305	3794	7258	95	4886	1728	761	17104	171	5691	K20255	Plin5	perilipin 5
ENSMUSG00	27.9750	27.7038	27.9162	41.3328	43.0874	41.84888	27.640	31.7711	34.2834			solute carrier family 41,
000013275	8394	909	1857	4849	5066	963	57565	778	0057	K15122	Slc41a1	member 1
ENSMUSG00	3.86667	3.93007	3.84605	6.06263	6.32532	6.002627	4.3668	4.21410	4.19843			wingless-type MMTV
000015957	6742	0627	1615	27	3663	166	01007	0382	7867	K01384	Wnt11	integration site family,
ENSMUSG00	12.5218	10.2054	10.6853	15.2772	16.9528	13.69486	10.587	10.7906	11.7740			member 11
000019066	9699	3415	4036	856	5537	989	50095	4274	952	K07884	Rab3d	RAB3D, member RAS
ENSMUSG00	18.3798	17.6735	17.7632	22.2598	24.1009	21.93683	16.776	16.1312	15.9366			oncogene family
000019139	8527	6689	257	9413	0703	929	09142	6547	0212	K01858	Isyna1	myo-inositol 1-phosphate
ENSMUSG00	7.97196	6.13326	6.81239	8.54570	10.1659	8.539231	5.9022	6.10461	6.54474			synthase A1
000020782	4196	3502	2051	549	2716	386	77344	4097	9686	K06094	Llg12	LLGL2 scribble cell polarity
ENSMUSG00	1.26219	1.69565	1.91713	1.95199	2.40327	2.469435	1.1722	1.43357	1.79412			complex component
000021280	8273	9146	8875	6384	5402	687	23881	8189	6652	None	Exoc3l4	exocyst complex component
ENSMUSG00	1.59033	1.67119	1.75684	3.02339	2.87331	3.806458	2.2323	2.54267	2.61326			3-like 4
000022231	1026	5445	0683	1368	0593	784	68278	8091	8847	K06841	Sema5a	sema domain, seven
ENSMUSG00	108.508	87.7082	90.4217	116.588	125.617	112.1443	102.17	89.7050	79.8958			thrombospondin repeats
000022579	729	7727	0301	7337	3388	743	19608	1813	6375	K20001	Gpihbp1	(type 1 and type 1-like),
ENSMUSG00	12.4099	9.51452	7.29865	11.8929	15.1755	13.29852	9.4592	8.47357	8.82985			transmembrane domain
000023439	1493	3069	6257	6064	3275	131	99472	1352	3854	K07825	Gnb3	(TM) and short cytoplasmic
ENSMUSG00	72.6670	64.5789	72.4417	86.1408	104.375	88.01811	59.398	65.4311	69.3093			domain, (semaphorin) 5A
000024197	5816	719	8743	0772	1968	268	95977	7389	886	K20287	Plin3	GPI-anchored HDL-binding
ENSMUSG00	1.46158	1.26138	0.96946	3.20710	3.21979	2.903866	2.1118	1.86066	2.01382	K06855	Mapk4	protein 1
												guanine nucleotide binding
												protein (G protein), beta 3
												perilipin 3
												mitogen-activated protein

000024558	8521	4451	0983	403	5037	062	59114	2549	6318			kinase 4
ENSMUSG00	15.5869	15.0853	15.9060	20.3664	21.8734	22.15237	15.766	15.2242	15.6031			methyl-CpG binding domain
000024561	955	1487	4951	5154	4068	991	38888	6654	5827	K11589	Mbd1	protein 1
ENSMUSG00	0.99196	0.95054	0.81456	1.69358	1.61206	4.697940	1.1561	1.06474	0.70683			coronin, actin binding
000024835	4127	402	4357	471	6069	006	08768	799	0282	K13886	Coro1b	protein 1B
ENSMUSG00	11.9991	11.2734	10.6299	15.7231	14.9791	13.05027	11.211	10.8864	11.1304			phosphatidylinositol 4-kinase
000025178	6966	2043	7423	5053	1439	541	6802	9055	8612	K13711	Pi4k2a	type 2 alpha
ENSMUSG00	322.317	289.538	285.927	463.833	474.193	426.5091	315.94	324.092	335.409			patatin-like phospholipase
000025509	5677	7776	942	5701	9309	009	24659	0493	2728	K16816	Pnpla2	domain containing 2
												solute carrier family 25
												(mitochondrial carrier,
ENSMUSG00	8.43109	8.47846	9.20510	14.3993	13.1521	11.47024	10.479	9.61089	9.48656			dicarboxylate transporter),
000025792	9662	1667	7681	4275	4357	605	20116	0096	3168	K13577	Slc25a10	member 10
												GNAS (guanine nucleotide
ENSMUSG00	3.99930	4.95677	4.81964	6.18742	10.2980	5.596260	4.2498	4.12222	3.98479			binding protein, alpha
000027523	754	1601	1118	291	8205	683	49586	2962	4411	K04632	Gnas	stimulating) complex locus
ENSMUSG00	0.34939	0.35376	0.39541	0.56081	0.58705	0.682445	0.3064	0.34673	0.40711			spalt like transcription factor
000027547	842	0518	7557	3907	4482	965	89998	0471	4285	K19871	Sall4	4
ENSMUSG00	17.4594	17.5517	16.2916	21.2305	22.4995	20.46444	15.120	14.4452	15.3558			phospholipase A2, group
000027999	0222	7408	6591	309	8879	385	11741	7085	7438	K01047	Pla2g12a	XIIA
												protein tyrosine
ENSMUSG00	2.25639	1.93129	1.94474	4.06303	4.73832	3.793016	3.1950	3.11007	3.11132			phosphatase, receptor type,
000028909	0215	868	5601	925	5973	459	52469	7621	0042	K16662	Ptpru	U
ENSMUSG00	11.2635	9.74772	11.4610	13.4764	14.3145	12.96846	9.9722	10.4929	10.3885			
000029001	9267	588	2332	0889	6516	54	68292	197	5936	K10103	Fbxo44	F-box protein 44
ENSMUSG00	0.77370	0.84227	0.83146	1.67458	1.68460	1.199750	0.7695	0.81749	1.02910			
000029123	4153	6327	3182	8253	037	047	60631	7372	7826	K08793	Stk32b	serine/threonine kinase 32B
ENSMUSG00	1.25238	1.73419	1.06650	2.26977	3.06387	2.182605	1.0989	1.24159	1.63055			cell growth regulator with EF
000029161	6649	5498	3125	7492	0368	209	76571	0669	0697	None	Cgref1	hand domain 1
ENSMUSG00	1.65172	1.98531	1.68388	2.73315	2.12843	2.504421	1.5498	1.61274	1.83339			
000031155	5947	8379	9051	8736	4094	833	52533	1759	7108	K08806	Pim2	proviral integration site 2

ENSMUSG00	135.684	127.713	126.519	255.413	245.223	199.8091	164.49	165.040	165.486			
000031765	4972	1327	8789	837	8383	221	385	3544	8221	K14739	Mt1	metallothionein 1
ENSMUSG00	98.7345	98.3973	106.667	149.900	163.929	150.1972	106.11	114.484	115.948			solute carrier family 27 (fatty
000031808	6544	0907	2583	5242	3111	3	07265	6454	7556	K08745	Slc27a1	acid transporter), member 1
ENSMUSG00	0.12895	0.07563	0.04297	0.42069	0.96749	2.059473	0.1152	0.08074	0.04084			RAB3A, member RAS
000031840	8979	012	2435	6548	8092	426	97392	567	0237	K07882	Rab3a	oncogene family
ENSMUSG00	14.0837	13.9332	14.1236	16.9491	18.9229	15.95466	11.638	13.2066	14.7946			purinergic receptor P2Y,
000032860	5391	734	165	6027	9584	549	43756	2344	6396	K04269	P2ry2	G-protein coupled 2
ENSMUSG00	0.08777	0.12134	0.18803	0.41536	0.42948	0.557863	0.1345	0.22376	0.20253			acid-sensing (proton-gated)
000033007	7853	2813	4615	9739	3919	684	35239	8747	2047	K04831	Asic4	ion channel family member 4
ENSMUSG00	3.44241	3.82343	2.82609	5.02383	5.66459	4.689138	3.8686	3.82917	3.38018			heat shock transcription
000033249	6214	0904	8624	1746	4051	285	6176	4196	1289	K09417	Hsf4	factor 4
ENSMUSG00	12.4798	10.3131	11.8204	13.6087	15.7527	14.50550	11.721	10.7975	10.4315			
000034245	0715	2039	81	1423	1899	312	24959	8007	4779	K11418	Hdac11	histone deacetylase 11
ENSMUSG00	3.21341	2.70120	2.92683	7.86671	7.74492	6.618427	6.0545	5.26481	4.98654			
000034472	9124	6431	5729	4503	4773	247	76503	8841	9294	K07844	Rasd2	RASD family, member 2
ENSMUSG00	157.441	152.645	135.080	307.773	262.526	289.0359	192.83	202.212	208.891			
000036181	058	1432	3787	5457	6705	21	878	3652	7368	K11275	Hist1h1c	histone cluster 1, H1c
ENSMUSG00	49.3812	48.7479	51.7872	89.7648	99.2027	84.79953	64.940	66.9917	70.7235			leucine-rich
000037095	1419	6302	1683	3884	3239	922	05482	8074	7153	None	Lrg1	alpha-2-glycoprotein 1
												serine (or cysteine)
ENSMUSG00	17.8379	15.7018	20.9411	32.3932	34.7374	32.56500	17.993	22.2405	26.5924			peptidase inhibitor, clade E,
000037411	4067	0249	4837	1504	4671	217	89834	3805	0597	K03982	Serpine1	member 1
ENSMUSG00	7.21290	6.67048	6.49934	10.2787	10.6355	9.847002	5.5281	6.19848	7.11072			solute carrier family 43,
000038178	7045	1291	4739	2837	967	725	32058	7422	8186	K08229	Slc43a2	member 2
ENSMUSG00	1.24235	1.12684	1.17253	2.13778	2.00105	1.564613	1.4487	1.41323	1.20232			synaptic vesicle glycoprotein
000038486	8394	3412	0752	5391	4169	962	9925	5535	7521	K06258	Sv2a	2 a
ENSMUSG00	13.9408	14.9031	13.7534	18.7312	18.0104	17.02944	10.108	9.62233	9.21228			dicarbonyl L-xylulose
000039450	3252	8815	3597	9959	1283	391	57897	96	8394	K03331	Dcxr	reductase
ENSMUSG00	190.238	181.082	180.598	236.815	253.981	217.5152	140.70	151.180	165.080			solute carrier family 25,
000040740	8697	4702	4019	335	0578	693	01275	0578	4583	K15117	Slc25a34	member 34

ENSMUSG00	8.64810	6.65011	6.26734	10.6232	9.48856	9.338988	6.6325	6.63606	6.67458			transmembrane and
000041143	265	6763	4448	3643	5693	432	30523	2704	4621	None	Tmco4	coiled-coil domains 4
ENSMUSG00	7.60679	5.75719	6.63720	11.9958	10.8593	10.88975	6.8857	6.46730	6.18172			
000041889	9864	8079	5935	815	9004	152	54679	2239	4625	None	Shisa4	shisa family member 4
ENSMUSG00	23.0779	27.2995	28.6890	37.1447	36.9726	33.94143	22.516	27.0607	31.2674		A530016	RIKEN cDNA A530016L24
000043122	4972	467	8885	7486	9991	797	08761	9636	4632	None	L24Rik	gene
ENSMUSG00	2.22955	2.30816	2.22883	3.25459	3.12632	3.349694	2.5160	2.25999	2.36365			leukocyte receptor cluster
000043432	7466	3616	6965	6897	8671	06	14056	2532	3599	None	Leng9	(LRC) member 9
ENSMUSG00	5.77007	6.39567	6.62190	9.15687	10.4571	8.727736	6.6445	6.39473	5.92056			
000045573	6259	7513	6924	7893	776	911	45976	3872	5985	K18832	Penk	preproenkephalin
ENSMUSG00	2.61375	2.44513	2.71488	3.39789	3.21901	3.534227	2.2456	2.07165	2.68919		B430212	RIKEN cDNA B430212C06
000046415	8753	3591	1472	6645	7174	34	69084	1302	646		C06Rik	gene
ENSMUSG00	7.63945	6.61085	6.26730	9.18939	13.9560	9.199876	5.0298	6.37559	7.61306			RAS,
000049892	2026	1765	6921	6249	6794	171	09943	9927	6288	K07843	Rasd1	dexamethasone-induced 1
ENSMUSG00	0.87115	0.87929	0.86171	1.19430	1.12169	1.270945	0.8034	0.80096	0.80153			
000050737	969	6053	1028	5777	8471	752	67172	9594	0238	K15729	Ptges	prostaglandin E synthase
ENSMUSG00	3.31575	3.92268	3.65757	9.85563	7.10476	6.798399	5.0089	4.61754	5.59434			cytochrome c oxidase
000051811	2129	2208	8609	9499	5256	733	65428	8119	4486	K02267	Cox6b2	subunit VIb polypeptide 2
ENSMUSG00	15.2487	14.6103	14.3510	18.1628	18.6916	17.44771	14.288	13.5830	12.3726			ELMO/CED-12 domain
000056698	8682	8869	8057	128	3998	393	81938	6946	2213	None	Elmod3	containing 3
ENSMUSG00	0.21267	0.48331	0.30119	0.72048	1.26605	0.773296	0.0792	0.39949	0.42095		Gm1003	
000057913	6388	935	4184	8499	5774	489	27496	2092	5275		2	predicted gene 10032
ENSMUSG00	1.49998	1.38980	1.33978	1.99786	1.84999	1.746484	1.3569	1.35043	1.45039			
000071454	0939	3808	6551	2004	5141	374	47486	2761	2014	None	Dtnb	dystrobrevin, beta
ENSMUSG00	32.8546	35.0159	39.6635	75.2903	80.1070	69.38922	57.066	54.2974	50.2566			
000072949	1548	0604	74	2821	841	867	04613	6144	8547	K01068	Acot1	acyl-CoA thioesterase 1
ENSMUSG00	1.23966	2.95655	1.84512	6.24242	5.55329	6.245611	3.3496	2.71668	3.45480			immunoglobulin heavy
000076612	3336	2076	4505	024	0748	265	39323	6077	1437		Ighg2c	constant gamma 2C
ENSMUSG00	1.36652	1.52998	1.75149	2.68959	2.52356	3.232452	1.2983	1.89498	2.47449			
000078234	1388	1724	4143	6088	3227	623	54667	4109	8797	None	Klhdc7a	kelch domain containing 7A
ENSMUSG00	34.5860	37.6966	36.4978	54.6698	65.9938	65.63155	53.892	45.5767	39.1381	K15464	Bnip3	BCL2/adenovirus E1B

000078566	7368	186	3993	0022	239	783	33831	9236	1049		interacting protein 3
ENSMUSG00	0.26797	0.44790	0.50898	1.12974	0.89159	0.917050	0.4312	0.47819	0.20367		
000095134	5657	2416	9211	0336	2097	324	5659	8116	7591	Mid1-ps1	midline 1, pseudogene 1
ENSMUSG00	0.83608	1.32390	0.94725	1.76239	2.94540	2.622763	0.7475	1.15170	1.00616	Gm3829	
000103156	405	5245	571	4923	0714	926	11422	2409	7297	3	predicted gene, 38293
ENSMUSG00	0.39088	0.55624	0.18388	2.12044	0.64125	0.295070	0.2466	0.23754	0.31675		
000116953	1508	1461	4796	7656	832	163	86478	6045	4012		

Table SIV. KEGG analysis of the DEGs in DbCM compared to CK.

class_A	class_B	Term	ID	Input number	Background number	P-Value	Input
Human Diseases	Cancers: Overview	Pathway s in cancer	mmu 05200	47	398	4.80095 E-13	ENSMUSG00000032766 ENSMUSG00000030170 ENSMUSG00000002111 ENSMUSG000000023067 ENSMUSG000000031520 ENSMUSG000000027985 ENSMUSG0000020826 ENSMUSG000000022523 ENSMUSG000000030110 ENSMUSG00000045382 ENSMUSG00000005672 ENSMUSG000000028645 ENSMUSG000000024421 ENSMUSG000000041417 ENSMUSG000000027347 ENSMUSG000000027669 ENSMUSG000000022994 ENSMUSG000000050147 ENSMUSG000000022952 ENSMUSG000000026104 ENSMUSG000000021025 ENSMUSG000000038668 ENSMUSG0000027111 ENSMUSG000000063594 ENSMUSG000000042826 ENSMUSG00000031274 ENSMUSG000000021277 ENSMUSG000000067158 ENSMUSG000000031740 ENSMUSG000000086451 ENSMUSG000000027523 ENSMUSG000000031628 ENSMUSG000000066687 ENSMUSG000000026029 ENSMUSG000000083816 ENSMUSG000000024621 ENSMUSG000000023439 ENSMUSG000000033220 ENSMUSG0000017737 ENSMUSG000000031503 ENSMUSG000000031502 ENSMUSG00000031659 ENSMUSG000000015957 ENSMUSG000000007659 ENSMUSG000000071042 ENSMUSG000000052889 ENSMUSG000000049115
							ENSMUSG000000032766 ENSMUSG000000048756 ENSMUSG000000048126 ENSMUSG000000020241 ENSMUSG000000019970 ENSMUSG000000001930 ENSMUSG0000027954 ENSMUSG000000022523 ENSMUSG000000025017 ENSMUSG00000029661 ENSMUSG000000023067 ENSMUSG000000001281 ENSMUSG000000005672 ENSMUSG000000031502 ENSMUSG000000041417 ENSMUSG000000029120 ENSMUSG000000024621 ENSMUSG000000042284 ENSMUSG000000042453 ENSMUSG000000001119 ENSMUSG000000024421 ENSMUSG000000023885 ENSMUSG000000000000
Environmen tal Information Processing	Signal transducti on	PI3K-Akt signaling pathway	mmu 04151	42	350	5.2252E -12	ENSMUSG000000032766 ENSMUSG000000048756 ENSMUSG000000048126 ENSMUSG000000020241 ENSMUSG000000019970 ENSMUSG000000001930 ENSMUSG0000027954 ENSMUSG000000022523 ENSMUSG000000025017 ENSMUSG00000029661 ENSMUSG000000023067 ENSMUSG000000001281 ENSMUSG000000005672 ENSMUSG000000031502 ENSMUSG000000041417 ENSMUSG000000029120 ENSMUSG000000024621 ENSMUSG000000042284 ENSMUSG000000042453 ENSMUSG000000001119 ENSMUSG000000024421 ENSMUSG000000023885 ENSMUSG000000000000

Organismal Systems	Digestive system	Protein digestion and absorption	mmu04974	22	90	5.26878E-12	0000038668 ENSMUSG00000001506 ENSMUSG000000027111 ENSMUSG00000063594 ENSMUSG000000042826 ENSMUSG000000031274 ENSMUSG000000031490 ENSMUSG000000026971 ENSMUSG000000020108 ENSMUSG000000067158 ENSMUSG000000022817 ENSMUSG000000031520 ENSMUSG000000023439 ENSMUSG000000027995 ENSMUSG000000031503 ENSMUSG000000055980 ENSMUSG00000027669 ENSMUSG00000007659 ENSMUSG000000092368 ENSMUSG00000039115
							ENSMUSG000000048126 ENSMUSG000000020241 ENSMUSG000000058806 ENSMUSG000000029675 ENSMUSG000000061119 ENSMUSG000000010095 ENSMUSG000000029661 ENSMUSG000000026042 ENSMUSG000000026043 ENSMUSG00000001119 ENSMUSG000000001506 ENSMUSG000000027966 ENSMUSG000000031274 ENSMUSG000000028339 ENSMUSG000000026837 ENSMUSG000000067158 ENSMUSG000000004098 ENSMUSG000000000958 ENSMUSG000000033161 ENSMUSG000000022371 ENSMUSG000000031503 ENSMUSG000000031502
Metabolism	Global and overview maps	Metabolic pathway	mmu01100	91	1298	3.36098E-11	ENSMUSG0000000101111 ENSMUSG000000040364 ENSMUSG000000036880 ENSMUSG000000026003 ENSMUSG000000032420 ENSMUSG000000039450 ENSMUSG000000029925 ENSMUSG000000053604 ENSMUSG000000052102 ENSMUSG000000025509 ENSMUSG000000074207 ENSMUSG000000069835 ENSMUSG000000029330 ENSMUSG000000033793 ENSMUSG000000025190 ENSMUSG000000035824 ENSMUSG000000092329 ENSMUSG000000019916 ENSMUSG000000039347 ENSMUSG000000000320 ENSMUSG000000013584 ENSMUSG000000020638 ENSMUSG000000027227 ENSMUSG000000020534 ENSMUSG000000027875 ENSMUSG000000024843 ENSMUSG000000048087 ENSMUSG000000030972 ENSMUSG000000072949 ENSMUSG000000001270 ENSMUSG000000021608 ENSMUSG000000032315 ENSMUSG000000074264 ENSMUSG000000030483 ENSMUSG000000020407 ENSMUSG0000000101249 ENSMUSG000000005547 ENSMUSG000000024827 ENSMUSG000000019139 ENSMUSG000000024903 ENSMUSG000000020520 ENSMUSG000000030541 ENSMUSG000000083816 ENSMUSG000000026687 ENSMUSG000000033308 ENSMUSG0000000107653 ENSMUSG000000064367 ENSMUSG000000032271 ENSMUSG000000021456 ENSMUSG000000039497 ENSMUSG000000020826 ENSMUSG000000021226 ENSMUSG000000047250 ENSMUSG000000059447 ENSMUSG0

	metabolic diseases	signaling pathway in diabetic complications					0000031502 ENSMUSG00000029661 ENSMUSG000000067158 ENSMUSG00000031740 ENSMUSG00000026043 ENSMUSG00000026104 ENSMUSG000000001506 ENSMUSG00000015340 ENSMUSG000000052889 ENSMUSG000000031628 ENSMUSG000000049115 ENSMUSG000000031274
							ENSMUSG000000066861 ENSMUSG000000066800 ENSMUSG000000060586 ENSMUSG000000022504 ENSMUSG000000041417 ENSMUSG000000037548 ENSMUSG00000027509 ENSMUSG00000026104 ENSMUSG000000021025 ENSMUSG000000052776 ENSMUSG000000022965 ENSMUSG000000079547 ENSMUSG000000076617 ENSMUSG000000029580 ENSMUSG000000073421 ENSMUSG000000026896 ENSMUSG000000037649 ENSMUSG00000002325 ENSMUSG000000036594 ENSMUSG000000032690 ENSMUSG000000020641 ENSMUSG000000040033 ENSMUSG000000052889
Human Diseases	Infectious diseases: Viral	Influenza A	mmu 05164	23	172	5.60364 E-08	ENSMUSG000000048126 ENSMUSG000000020241 ENSMUSG000000001930 ENSMUSG000000029661 ENSMUSG000000001281 ENSMUSG000000041417 ENSMUSG000000042284 ENSMUSG000000042453 ENSMUSG000000001119 ENSMUSG000000024421 ENSMUSG000000023885 ENSMUSG000000044951 ENSMUSG000000001506 ENSMUSG000000027111 ENSMUSG000000031274 ENSMUSG000000067158 ENSMUSG000000029580 ENSMUSG000000026971 ENSMUSG000000022817 ENSMUSG000000031520 ENSMUSG000000033220 ENSMUSG000000031503 ENSMUSG000000031502 ENSMUSG000000039115 ENSMUSG000000052889
Cellular Processes	Cellular community - eukaryotes	Focal adhesion	mmu 04510	25	203	6.44509 E-08	ENSMUSG000000059498 ENSMUSG000000041417 ENSMUSG000000031264 ENSMUSG000000002111 ENSMUSG000000026480 ENSMUSG000000061132 ENSMUSG00000000409 ENSMUSG000000024621 ENSMUSG00000015340 ENSMUSG000000002325 ENSMUSG00000015947 ENSMUSG000000037902 ENSMUSG000000040033 ENSMUSG00000002983 ENSMUSG000000026104 ENSMUSG000000021025 ENSMUSG000000030579 ENSMUSG000000071715 ENSMUSG000000022965 ENSMUSG000000070873
Organismal Systems	Development	Osteoclast differentiation	mmu 04380	20	133	7.38699 E-08	ENSMUSG000000030170 ENSMUSG000000028064 ENSMUSG000000003934 ENSMUSG000000027954 ENSMUSG000000029095 ENSMUSG000000057897 ENSMUSG000000000000
Organismal Systems	Development	Axon guidance	mmu 04360	23	176	8.16689 E-08	

Environmental Information Processing	Signaling molecules and interaction	Cell adhesion molecules (CAMs)	mmu 04514	23	176	8.16689 E-08	0000028780 ENSMUSG00000045382 ENSMUSG00000041417 ENSMUSG00000021904 ENSMUSG00000006494 ENSMUSG00000022231 ENSMUSG000000031398 ENSMUSG00000066877 ENSMUSG00000031558 ENSMUSG00000005958 ENSMUSG00000056427 ENSMUSG00000032475 ENSMUSG00000033220 ENSMUSG00000020902 ENSMUSG00000001227 ENSMUSG00000019647 ENSMUSG00000052133
							ENSMUSG00000060586 ENSMUSG00000001281 ENSMUSG00000001029 ENSMUSG000000037548 ENSMUSG00000032012 ENSMUSG00000071552 ENSMUSG0000079547 ENSMUSG00000076617 ENSMUSG00000048163 ENSMUSG00000027111 ENSMUSG00000055413 ENSMUSG00000016494 ENSMUSG00000073421 ENSMUSG00000053977 ENSMUSG00000047085 ENSMUSG00000037649 ENSMUSG00000036594 ENSMUSG00000027322 ENSMUSG00000051457 ENSMUSG00000021614 ENSMUSG00000039115 ENSMUSG00000021638 ENSMUSG0000001739
							ENSMUSG00000032766 ENSMUSG00000041112 ENSMUSG00000029417 ENSMUSG00000045382 ENSMUSG00000022994 ENSMUSG00000041417 ENSMUSG0000027669 ENSMUSG00000026104 ENSMUSG00000021025 ENSMUSG00000020676 ENSMUSG00000063594 ENSMUSG00000048756 ENSMUSG00000003283 ENSMUSG00000026180 ENSMUSG00000020395 ENSMUSG00000023439 ENSMUSG00000033220 ENSMUSG00000059456 ENSMUSG00000031659 ENSMUSG00000052336 ENSMUSG00000040033 ENSMUSG00000052889 ENSMUSG0000020143
Organismal Systems	Immune system	Chemokine signaling pathway	mmu 04062	23	198	5.44049 E-07	ENSMUSG00000044734 ENSMUSG00000041417 ENSMUSG00000026073 ENSMUSG00000027995 ENSMUSG00000031503 ENSMUSG00000031502 ENSMUSG0000029661 ENSMUSG00000067158 ENSMUSG00000052688 ENSMUSG00000026043 ENSMUSG00000024421 ENSMUSG00000020826 ENSMUSG00000027523 ENSMUSG00000001506 ENSMUSG00000052889 ENSMUSG00000031628 ENSMUSG00000031274
							ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000079547 ENSMUSG00000076617 ENSMUSG0000058715 ENSMUSG00000073421 ENSMUSG00000020676
Human Diseases	Infectious diseases: Parasitic	Amoebiasis	mmu 05146	17	111	5.49253 E-07	
Human Diseases	Immune diseases	Asthma	mmu 05310	9	26	9.40619 E-07	

Organismal Systems	Immune system	Leukocyte transendothelial migration	mmu04670	17	121	1.60151E-06	ENSMUSG00000059456 ENSMUSG00000056917 ENSMUSG00000041417 ENSMUSG00000026480 ENSMUSG00000020395 ENSMUSG00000033220 ENSMUSG0000052889 ENSMUSG00000017737 ENSMUSG00000032011 ENSMUSG00000015340 ENSMUSG00000031740 ENSMUSG00000068036 ENSMUSG00000045382 ENSMUSG00000029580 ENSMUSG00000021638 ENSMUSG00000001739 ENSMUSG00000071715
Organismal Systems	Immune system	Platelet activation	mmu04611	17	123	1.95885E-06	ENSMUSG00000031659 ENSMUSG00000041417 ENSMUSG00000031264 ENSMUSG00000029661 ENSMUSG00000050147 ENSMUSG00000047250 ENSMUSG0000001930 ENSMUSG00000027347 ENSMUSG00000034881 ENSMUSG00000026043 ENSMUSG00000058715 ENSMUSG00000027523 ENSMUSG00000044951 ENSMUSG00000029580 ENSMUSG00000022994 ENSMUSG00000001506 ENSMUSG00000029925
Organismal Systems	Environmental adaptation	Circadian entrainment	mmu04713	15	98	2.53228E-06	ENSMUSG00000032766 ENSMUSG00000055866 ENSMUSG00000024112 ENSMUSG00000023439 ENSMUSG00000027669 ENSMUSG00000022994 ENSMUSG0000049892 ENSMUSG00000031659 ENSMUSG00000020866 ENSMUSG00000057897 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00000063594 ENSMUSG00000052889 ENSMUSG00000020893
Organismal Systems	Nervous system	GABAergic synapse	mmu04727	14	89	4.09241E-06	ENSMUSG00000032766 ENSMUSG00000031340 ENSMUSG00000031343 ENSMUSG00000023439 ENSMUSG00000026473 ENSMUSG00000022994 ENSMUSG0000097675 ENSMUSG00000031659 ENSMUSG00000027669 ENSMUSG00000057880 ENSMUSG00000026407 ENSMUSG00000015968 ENSMUSG00000052889 ENSMUSG00000063594
Human Diseases	Infectious diseases: Bacterial	Staphylococcus aureus infection	mmu05150	11	53	4.34897E-06	ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000015947 ENSMUSG00000059498 ENSMUSG0000056529 ENSMUSG00000079547 ENSMUSG00000076617 ENSMUSG00000048163 ENSMUSG00000073421
Human Diseases	Cardiovascular diseases	Dilated cardiomyopathy	mmu05414	14	90	4.5941E-06	ENSMUSG00000027523 ENSMUSG00000053093 ENSMUSG00000026407 ENSMUSG00000022817 ENSMUSG00000042284 ENSMUSG00000026971 ENSMUSG0000031659 ENSMUSG00000015968 ENSMUSG00000039115 ENSMUSG0000001281 ENSMUSG00000022994 ENSMUSG00000029580 ENSMUSG00000027111 ENSMUSG00000031799

							ENSMUSG00000033318 ENSMUSG00000027890 ENSMUSG00000003549 ENSMUSG000000041417 ENSMUSG00000028329 ENSMUSG00000023067 ENSMUSG0000026688 ENSMUSG00000020914 ENSMUSG00000058135 ENSMUSG0000008540 ENSMUSG00000007659 ENSMUSG00000031628 ENSMUSG00000026029
Human Diseases	Drug resistance: Antineoplastic	Platinum drug resistance	mmu01524	13	78	5.12739E-06	
Organismal Systems	Immune system	Intestinal immune network for IgA production	mmu04672	10	44	5.89574E-06	ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000045382 ENSMUSG00000079547 ENSMUSG0000076617 ENSMUSG00000001281 ENSMUSG00000073421 ENSMUSG00000010142
Environmental Information Processing	Signal transduction	Ras signaling pathway	mmu04014	23	231	5.90149E-06	ENSMUSG00000032766 ENSMUSG00000052142 ENSMUSG00000027954 ENSMUSG00000022523 ENSMUSG00000005672 ENSMUSG00000041417 ENSMUSG0000027347 ENSMUSG00000027669 ENSMUSG00000024621 ENSMUSG00000032035 ENSMUSG00000063594 ENSMUSG00000042826 ENSMUSG00000068036 ENSMUSG00000030742 ENSMUSG00000031520 ENSMUSG00000023439 ENSMUSG00000027999 ENSMUSG00000033220 ENSMUSG00000041193 ENSMUSG00000041202 ENSMUSG00000007659 ENSMUSG00000071042 ENSMUSG0000052889
Human Diseases	Infectious diseases: Viral	Hepatitis C	mmu05160	17	137	7.23607E-06	ENSMUSG00000066861 ENSMUSG00000018899 ENSMUSG00000022383 ENSMUSG00000034459 ENSMUSG00000029120 ENSMUSG00000021277 ENSMUSG0000023067 ENSMUSG00000066800 ENSMUSG00000002325 ENSMUSG00000040033 ENSMUSG00000032690 ENSMUSG00000026104 ENSMUSG00000021025 ENSMUSG00000052776 ENSMUSG00000021638 ENSMUSG00000001739 ENSMUSG00000041417
Human Diseases	Cardiovascular diseases	Viral myocarditis	mmu05416	14	96	8.92314E-06	ENSMUSG00000037649 ENSMUSG00000026029 ENSMUSG00000053093 ENSMUSG00000033220 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG0000060586 ENSMUSG00000026399 ENSMUSG00000055413 ENSMUSG00000079547 ENSMUSG00000076617 ENSMUSG00000029580 ENSMUSG00000073421 ENSMUSG00000031628
Metabolism	Lipid	Fatty	mmu	8	27	9.90594	ENSMUSG00000028937 ENSMUSG00000072949 ENSMUSG00000059447 ENSM

	metabolism	acid elongation	00062			E-06	USG00000063275 ENSMUSG00000028497 ENSMUSG00000025745 ENSMUSG0000021226 ENSMUSG00000036880
		Inflammatory bowel disease (IBD)					ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000027995 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000022965 ENSMUSG0000026104 ENSMUSG00000079547 ENSMUSG00000076617 ENSMUSG00000073421 ENSMUSG00000030745
Human Diseases	Immune diseases	disease (IBD)	mmu 05321	11	59	1.06666 E-05	ENSMUSG00000030170 ENSMUSG00000002111 ENSMUSG00000060586 ENSMUSG00000063889 ENSMUSG00000022994 ENSMUSG00000033863 ENSMUSG0000028645 ENSMUSG00000041417 ENSMUSG00000037548 ENSMUSG00000032035 ENSMUSG00000002983 ENSMUSG00000021025 ENSMUSG00000076617 ENSMUSG00000028211 ENSMUSG00000029521 ENSMUSG00000079547 ENSMUSG00000055413 ENSMUSG00000073421 ENSMUSG00000037649 ENSMUSG00000000409 ENSMUSG00000023067 ENSMUSG00000036594 ENSMUSG0000031659 ENSMUSG00000015957 ENSMUSG00000007659 ENSMUSG00000026073
Human Diseases	Infectious diseases: Viral	HTLV-I infection B cell receptor	mmu 05166	26	295	1.13029 E-05	ENSMUSG00000025491 ENSMUSG00000041417 ENSMUSG00000031264 ENSMUSG00000026288 ENSMUSG00000061132 ENSMUSG00000021025 ENSMUSG0000033220 ENSMUSG00000036526 ENSMUSG00000025017 ENSMUSG00000040592 ENSMUSG00000071042 ENSMUSG00000052889
Organismal Systems	Immune system	signaling pathway	mmu 04662	12	75	1.69239 E-05	ENSMUSG00000055866 ENSMUSG00000017737 ENSMUSG00000037169 ENSMUSG00000024621 ENSMUSG00000002111 ENSMUSG00000030795 ENSMUSG0000043613 ENSMUSG00000048416 ENSMUSG00000023067 ENSMUSG00000020427 ENSMUSG00000066687 ENSMUSG00000025223 ENSMUSG00000015947 ENSMUSG00000022952 ENSMUSG00000007659 ENSMUSG00000001281 ENSMUSG00000013089 ENSMUSG00000026073 ENSMUSG00000014030
Human Diseases	Cancers: Overview	Arachidonic acid metabolism	mmu 05202	19	180	1.77126 E-05	ENSMUSG00000083816 ENSMUSG00000000320 ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG00000022040 ENSMUSG00000006344 ENSMUSG0000047250 ENSMUSG00000018924 ENSMUSG00000041202 ENSMUSG00000030483 ENSMUSG00000015090 ENSMUSG00000050737 ENSMUSG000000299
Metabolism	Lipid metabolism	metabolism	mmu 00590	13	90	2.02657 E-05	

Cellular Processes	Cell motility	Regulation of actin cytoskeleton	mmu04810	21	218	2.31977E-05	ENSMUSG000000042826 ENSMUSG000000022488 ENSMUSG000000022443 ENSMUSG000000041417 ENSMUSG000000030789 ENSMUSG000000033220 ENSMUSG0000020900 ENSMUSG000000046993 ENSMUSG000000042284 ENSMUSG00000026971 ENSMUSG000000049775 ENSMUSG000000022523 ENSMUSG000000025372 ENSMUSG000000034480 ENSMUSG000000044951 ENSMUSG000000022817 ENSMUSG000000039115 ENSMUSG00000001281 ENSMUSG000000037946 ENSMUSG000000029580 ENSMUSG000000027111
		Natural killer cell mediated cytotoxicity	mmu04650	15	121	2.48136E-05	ENSMUSG00000001029 ENSMUSG000000005763 ENSMUSG000000041417 ENSMUSG000000000409 ENSMUSG000000033220 ENSMUSG000000059456 ENSMUSG0000015355 ENSMUSG000000054520 ENSMUSG000000030579 ENSMUSG00000033024 ENSMUSG000000030742 ENSMUSG000000022965 ENSMUSG000000031628 ENSMUSG000000052889 ENSMUSG000000058715
Organismal Systems	Immune system						ENSMUSG000000041417 ENSMUSG000000028645 ENSMUSG000000005413 ENSMUSG000000037411 ENSMUSG000000023067 ENSMUSG000000031490 ENSMUSG0000015340 ENSMUSG000000020826 ENSMUSG000000022965 ENSMUSG00000057897 ENSMUSG000000092368 ENSMUSG000000026773 ENSMUSG000000052889 ENSMUSG000000006494
Environmental Information Processing	Signal transduction	HIF-1 signaling pathway	mmu04066	14	110	3.52656E-05	ENSMUSG000000021135 ENSMUSG000000037583 ENSMUSG000000060961 ENSMUSG000000031659 ENSMUSG000000029802 ENSMUSG000000023829 ENSMUSG0000000027523 ENSMUSG000000033161 ENSMUSG000000022994 ENSMUSG00000038776 ENSMUSG000000028645
Organismal Systems	Digestive system	Bile secretion	mmu04976	11	71	4.90723E-05	ENSMUSG000000024421 ENSMUSG000000083816 ENSMUSG000000041417 ENSMUSG000000021277 ENSMUSG000000031503 ENSMUSG000000031502 ENSMUSG000000067158 ENSMUSG000000020826 ENSMUSG000000007659 ENSMUSG00000021025 ENSMUSG000000027111 ENSMUSG000000031274
Human Diseases	Cancers: Specific types	Small cell lung cancer	mmu05222	12	85	5.11077E-05	ENSMUSG000000026687 ENSMUSG000000039783 ENSMUSG000000027187 ENSMUSG000000003477 ENSMUSG000000024087 ENSMUSG000000025745 ENSMUSG000000063558 ENSMUSG000000032315 ENSMUSG000000024903
Metabolism	Amino acid metabolism	Tryptophan metabolism	mmu00380	9	47	5.60128E-05	

Organismal Systems	Endocrine system	Aldosterone synthesis and secretion	mmu04925	12	86	5.65998E-05	ENSMUSG00000024112 ENSMUSG00000053214 ENSMUSG00000022994 ENSMUSG000000039145 ENSMUSG00000031659 ENSMUSG00000026407 ENSMUSG0000020866 ENSMUSG00000057897 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00000052889 ENSMUSG00000049115
							ENSMUSG00000030798 ENSMUSG00000026073 ENSMUSG00000024621 ENSMUSG00000042284 ENSMUSG00000060586 ENSMUSG00000015947 ENSMUSG0000026399 ENSMUSG00000005540 ENSMUSG00000016494 ENSMUSG00000005672 ENSMUSG00000053977 ENSMUSG00000027111
Organismal Systems	Immune system	Hematopoietic cell lineage	mmu04640	12	87	6.25942E-05	ENSMUSG00000019828 ENSMUSG00000020937 ENSMUSG00000024112 ENSMUSG00000086451 ENSMUSG00000059456 ENSMUSG00000015968 ENSMUSG0000031659 ENSMUSG00000020866 ENSMUSG00000026407 ENSMUSG00000034881 ENSMUSG00000057897 ENSMUSG00000020788 ENSMUSG00000020826 ENSMUSG00000044951 ENSMUSG00000056529 ENSMUSG00000052889 ENSMUSG00000049115 ENSMUSG00000027523
Environmental Information Processing	Signal transduction	Calcium signaling pathway	mmu04020	18	182	6.35109E-05	ENSMUSG00000061740 ENSMUSG00000032766 ENSMUSG00000083816 ENSMUSG00000023439 ENSMUSG00000027669 ENSMUSG00000026407 ENSMUSG0000000320 ENSMUSG00000047250 ENSMUSG00000018924 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00000031628 ENSMUSG00000052889 ENSMUSG00000060882 ENSMUSG00000063594
Organismal Systems	Nervous system	Serotonergic synapse	mmu04726	15	133	6.66671E-05	ENSMUSG00000032766 ENSMUSG00000019828 ENSMUSG00000031340 ENSMUSG00000031343 ENSMUSG00000023439 ENSMUSG00000027669 ENSMUSG0000022994 ENSMUSG00000083816 ENSMUSG00000031659 ENSMUSG00000026407 ENSMUSG00000015968 ENSMUSG00000052889 ENSMUSG00000063594
Organismal Systems	Nervous system	Retrograde endocannabinoid signaling	mmu04723	13	103	7.17245E-05	ENSMUSG00000026687 ENSMUSG00000074207 ENSMUSG00000018574 ENSMUSG00000026003 ENSMUSG00000059447 ENSMUSG00000020777 ENSMUSG0000025745 ENSMUSG00000024900 ENSMUSG00000036880
Metabolism	Lipid metabolism	Fatty acid degradation	mmu00071	9	49	7.44547E-05	ENSMUSG00000083816 ENSMUSG00000031264 ENSMUSG00000000409 ENSMUSG00000061132 ENSMUSG00000021277 ENSMUSG00000056130 ENSMUSG00000000000
Environmental	Signal transduction	NF-kappa B	mmu04064	13	104	7.84094E-05	

Information Processing	on	signaling pathway					0000021025 ENSMUSG00000036526 ENSMUSG00000002983 ENSMUSG00000007659 ENSMUSG00000030742 ENSMUSG000000052889 ENSMUSG000000015312
Metabolism	Lipid metabolism	Biosynthesis of unsaturated fatty acids	mmu01040	7	28	8.9664E-05	ENSMUSG00000028937 ENSMUSG000000072949 ENSMUSG000000063275 ENSMUSG000000028497 ENSMUSG00000020777 ENSMUSG000000021226 ENSMUSG00000025745 ENSMUSG000000031543 ENSMUSG000000030170 ENSMUSG000000025351 ENSMUSG000000041417 ENSMUSG000000022831 ENSMUSG000000036446 ENSMUSG000000031628 ENSMUSG000000027995 ENSMUSG000000017737 ENSMUSG000000023067 ENSMUSG000000022817 ENSMUSG000000029661 ENSMUSG000000015957 ENSMUSG000000031740 ENSMUSG000000057897 ENSMUSG000000092368 ENSMUSG000000029580 ENSMUSG000000052889 ENSMUSG000000001506 ENSMUSG000000033318 ENSMUSG000000083816 ENSMUSG000000024087 ENSMUSG000000030711 ENSMUSG000000026688 ENSMUSG000000027890 ENSMUSG000000058135 ENSMUSG000000008540 ENSMUSG000000030483 ENSMUSG000000074207 ENSMUSG000000032315 ENSMUSG000000038776 ENSMUSG000000032766 ENSMUSG000000031340 ENSMUSG000000031343 ENSMUSG000000023439 ENSMUSG000000027669 ENSMUSG000000022994 ENSMUSG000000031659 ENSMUSG000000027523 ENSMUSG000000075270 ENSMUSG000000052889 ENSMUSG000000019990 ENSMUSG000000063594 ENSMUSG000000063275 ENSMUSG000000018574 ENSMUSG000000026003 ENSMUSG000000059447 ENSMUSG000000028497 ENSMUSG000000020777 ENSMUSG000000036880 ENSMUSG000000024900 ENSMUSG000000025745 ENSMUSG000000035064 ENSMUSG000000083816 ENSMUSG000000041417 ENSMUSG000000022994 ENSMUSG000000039145 ENSMUSG000000023067 ENSMUSG000000031659 ENSMUSG000000044216 ENSMUSG000000026407 ENSMUSG000000057897 ENSMUSG000000015968 ENSMUSG000000044951 ENSMUSG0000000029580 ENSMUSG000000052889 ENSMUSG000000042529 ENSMUSG000000027523
Human Diseases	Cancers: Overview	Proteoglycans in cancer	mmu05205	19	208	0.000106601	
Human Diseases	Cancers: Overview	Chemical carcinogenesis	mmu05204	12	93	0.00011137	
Human Diseases	Substance dependence	Morphine addiction	mmu05032	12	93	0.00011137	
Metabolism	Global and overview maps	Fatty acid metabolism	mmu01212	9	52	0.000111512	
Organismal Systems	Endocrine system	Oxytocin signaling pathway	mmu04921	16	158	0.00012366	

Cellular Processes	Cell growth and death	p53 signaling pathway	mmu 04115	10	68	0.000157534	ENSMUSG000000036390 ENSMUSG000000026029 ENSMUSG000000037411 ENSMUSG000000023067 ENSMUSG000000020427 ENSMUSG000000026389 ENSMUSG00000019851 ENSMUSG000000031628 ENSMUSG000000015312 ENSMUSG00000029521
							ENSMUSG000000042826 ENSMUSG000000056917 ENSMUSG000000041417 ENSMUSG000000024621 ENSMUSG000000033220 ENSMUSG000000052889 ENSMUSG000000027523 ENSMUSG000000050147 ENSMUSG000000031659 ENSMUSG00000027954 ENSMUSG000000030742 ENSMUSG000000005672 ENSMUSG000000068036 ENSMUSG000000071042 ENSMUSG000000038668 ENSMUSG000000022523 ENSMUSG000000022994 ENSMUSG000000029580 ENSMUSG000000031520
Environmental Information Processing	Signal transduction	Rap1 signaling pathway	mmu 04015	19	215	0.000158479	ENSMUSG000000032766 ENSMUSG000000041417 ENSMUSG000000023439 ENSMUSG000000027669 ENSMUSG000000022994 ENSMUSG000000031659 ENSMUSG000000044216 ENSMUSG000000026407 ENSMUSG000000057897 ENSMUSG00000015968 ENSMUSG000000052889 ENSMUSG000000042529 ENSMUSG000000063594
Organismal Systems	Nervous system	Cholinergic synapse	mmu 04725	13	113	0.000167123	ENSMUSG000000042826 ENSMUSG000000036390 ENSMUSG000000024112 ENSMUSG000000031530 ENSMUSG000000033220 ENSMUSG000000061288 ENSMUSG00000015968 ENSMUSG000000028862 ENSMUSG000000027347 ENSMUSG000000022523 ENSMUSG000000026407 ENSMUSG000000020866 ENSMUSG000000037337 ENSMUSG000000002983 ENSMUSG000000031506 ENSMUSG000000071042 ENSMUSG000000031628 ENSMUSG000000026074 ENSMUSG000000052889 ENSMUSG000000026073 ENSMUSG000000015312
Environmental Information Processing	Signal transduction	MAPK signaling pathway	mmu 04010	21	254	0.000173409	ENSMUSG000000037649 ENSMUSG000000024610 ENSMUSG000000037548 ENSMUSG000000036594 ENSMUSG000000060586 ENSMUSG000000055413 ENSMUSG000000038642 ENSMUSG000000079547 ENSMUSG000000076617 ENSMUSG000000073421 ENSMUSG000000053977 ENSMUSG000000022504
Organismal Systems	Immune system	Antigen presentation	mmu 04612	12	98	0.000174072	ENSMUSG000000022186 ENSMUSG000000026687 ENSMUSG000000027875 ENSMUSG000000059447 ENSMUSG000000057880 ENSMUSG000000025745 ENSMUSG000000063558 ENSMUSG000000024903 ENSMUSG000000036880
Metabolism	Amino acid metabolism	Valine, leucine and isoleucine	mmu 00280	9	56	0.000183868	

		e degradat ion Hypertro phic					ENSMUSG00000053093 ENSMUSG00000026407 ENSMUSG00000022817 ENSMUSG000000042284 ENSMUSG00000026971 ENSMUSG00000015968 ENSMUSG00000039115 ENSMUSG00000001281 ENSMUSG00000029580 ENSMUSG00000027111 ENSMUSG00000031799
Human Diseases	Cardiovascular diseases	cardiomyopathy (HCM)	mmu05410	11	84	0.000189313	
Metabolism	Metabolism of other amino acids	Glutathione metabolism	mmu00480	9	57	0.000207053	ENSMUSG00000033318 ENSMUSG00000030541 ENSMUSG00000027890 ENSMUSG00000006344 ENSMUSG00000026688 ENSMUSG00000058135 ENSMUSG0000008540 ENSMUSG00000011179 ENSMUSG00000032350
Human Diseases	Immune diseases	Rheumatoid arthritis	mmu05323	11	85	0.000207849	ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000027995 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000043613 ENSMUSG0000079547 ENSMUSG00000076617 ENSMUSG00000039347 ENSMUSG00000073421 ENSMUSG00000033793
Organismal Systems	Endocrine system	Insulin secretion	mmu04911	11	86	0.000227897	ENSMUSG00000031840 ENSMUSG00000022994 ENSMUSG00000096146 ENSMUSG00000026407 ENSMUSG00000031659 ENSMUSG00000057897 ENSMUSG0000015968 ENSMUSG00000027523 ENSMUSG00000033161 ENSMUSG00000052889 ENSMUSG00000028645
Organismal Systems	Circulatory system	Adrenergic signaling in cardiomyocytes	mmu04261	15	152	0.000257	ENSMUSG00000041417 ENSMUSG00000061086 ENSMUSG00000029120 ENSMUSG00000026407 ENSMUSG00000032511 ENSMUSG00000031659 ENSMUSG0000053093 ENSMUSG00000057897 ENSMUSG00000015968 ENSMUSG00000063889 ENSMUSG00000027523 ENSMUSG00000033161 ENSMUSG00000022994 ENSMUSG00000049115 ENSMUSG00000031799
Organismal Systems	Digestive system	Pancreatic secretion	mmu04972	12	103	0.000264714	ENSMUSG00000027999 ENSMUSG00000056025 ENSMUSG00000019066 ENSMUSG00000022994 ENSMUSG00000060961 ENSMUSG00000031659 ENSMUSG0000041193 ENSMUSG00000041202 ENSMUSG00000020788 ENSMUSG00000027523 ENSMUSG00000033161 ENSMUSG00000052889
Human	Cardiovascular	Arrhythmia	mmu	10	74	0.00029	ENSMUSG00000022817 ENSMUSG00000026407 ENSMUSG00000027985 ENSMUSG00000000000

Diseases	ular diseases	mogenic right ventricular cardiomyopathy (ARVC) Fc gamma R-mediated	05412			2067	USG00000042284 ENSMUSG00000026971 ENSMUSG00000015968 ENSMUSG0000039115 ENSMUSG00000001281 ENSMUSG00000029580 ENSMUSG00000027111
Organismal Systems	Immune system	phagocytosis Primary immunity	mmu 04666	11	90	0.00032 5232	ENSMUSG00000069662 ENSMUSG00000041417 ENSMUSG00000026288 ENSMUSG00000046993 ENSMUSG00000036995 ENSMUSG00000033220 ENSMUSG0000003283 ENSMUSG00000030742 ENSMUSG00000052889 ENSMUSG00000020143 ENSMUSG00000015947
Human Diseases	Immune diseases	deficiency	mmu 05340	7	37	0.00040 0097	ENSMUSG00000031264 ENSMUSG00000000409 ENSMUSG00000061132 ENSMUSG00000029591 ENSMUSG00000010142 ENSMUSG00000053977 ENSMUSG00000022504
Human Diseases	Endocrine and metabolic diseases	Insulin resistance	mmu 04931	12	111	0.00049 1942	ENSMUSG00000031808 ENSMUSG00000033871 ENSMUSG00000041417 ENSMUSG00000022383 ENSMUSG00000042010 ENSMUSG00000055980 ENSMUSG0000033083 ENSMUSG00000021025 ENSMUSG00000046794 ENSMUSG00000052889 ENSMUSG00000024900 ENSMUSG00000028645
Metabolism	Xenobiotics biodegradation and metabolism	Metabolism of xenobiotics by cytochrome P450	mmu 00980	9	65	0.00049 4966	ENSMUSG00000033318 ENSMUSG00000027890 ENSMUSG00000024087 ENSMUSG00000074207 ENSMUSG00000026688 ENSMUSG00000058135 ENSMUSG0000008540 ENSMUSG00000032315 ENSMUSG00000038776
Organismal Systems	Circulatory system	Vascular smooth muscle contractile	mmu 04270	13	128	0.00050 4068	ENSMUSG00000027523 ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG00000022994 ENSMUSG00000031659 ENSMUSG00000026407 ENSMUSG0000041202 ENSMUSG00000086451 ENSMUSG00000015968 ENSMUSG00000044951 ENSMUSG00000052889 ENSMUSG00000049115 ENSMUSG000000410

		on				46	
		Cardiac				ENSMUSG00000061086 ENSMUSG00000053093 ENSMUSG00000026407 ENSM	
		muscle				USG000000101249 ENSMUSG00000051811 ENSMUSG000000102070 ENSMUSG0	
Organismal	Circulator	contracti	mmu		0.00051	0000015968 ENSMUSG00000033161 ENSMUSG000000101111 ENSMUSG000000	
Systems	y system	on	04260	10	1475	031799	
	Xenobiotic						
	s	Drug					
	biodegrad	metaboli					
	ation and	sm -				ENSMUSG00000028088 ENSMUSG00000033318 ENSMUSG00000040170 ENSM	
	metabolis	cytochro	mmu		0.00060	USG00000074207 ENSMUSG00000026688 ENSMUSG00000027890 ENSMUSG0	
Metabolism	m	me P450	00982	9	357	0000058135 ENSMUSG00000008540 ENSMUSG00000063558	
						ENSMUSG00000032766 ENSMUSG00000019828 ENSMUSG00000023439 ENSM	
		Glutamat				USG00000026473 ENSMUSG00000022994 ENSMUSG00000001985 ENSMUSG0	
Organismal	Nervous	ergic	mmu		0.00065	0000031659 ENSMUSG00000027669 ENSMUSG00000015968 ENSMUSG000000	
Systems	system	synapse	04724	12	6523	027523 ENSMUSG00000052889 ENSMUSG00000063594	
	Transport					ENSMUSG00000024066 ENSMUSG00000030541 ENSMUSG00000053898 ENSM	
	and					USG00000027187 ENSMUSG00000022040 ENSMUSG00000022210 ENSMUSG0	
Cellular	catabolis	Peroxiso	mmu		0.00066	0000026853 ENSMUSG00000020777 ENSMUSG00000020826 ENSMUSG000000	
Processes	m	me	04146	10	4197	022982	
		Thyroid				ENSMUSG00000020937 ENSMUSG00000041417 ENSMUSG00000026799 ENSM	
		hormone				USG000000007682 ENSMUSG00000033083 ENSMUSG00000026104 ENSMUSG0	
Organismal	Endocrine	signaling	mmu		0.00075	0000029580 ENSMUSG00000028645 ENSMUSG00000052889 ENSMUSG000000	
Systems	system	pathway	04919	12	4727	033161 ENSMUSG00000034297 ENSMUSG00000038622	
						ENSMUSG00000031808 ENSMUSG00000022383 ENSMUSG00000026003 ENSM	
		PPAR				USG00000027875 ENSMUSG00000002289 ENSMUSG00000002831 ENSMUSG0	
Organismal	Endocrine	signaling	mmu		0.00078	0000011305 ENSMUSG00000020777 ENSMUSG00000028773 ENSMUSG000000	
Systems	system	pathway	03320	10	5527	024900	
	Cancers:	Acute				ENSMUSG00000041417 ENSMUSG00000002111 ENSMUSG00000027985 ENSM	
Human	Specific	myeloid	mmu		0.00092	USG000000031490 ENSMUSG00000031155 ENSMUSG00000022952 ENSMUSG0	
Diseases	types	leukemia	05221	8	8978	0000066687 ENSMUSG00000005672	
Organismal	Endocrine	Regulatio	mmu	8	57	0.00092	ENSMUSG00000083816 ENSMUSG00000041417 ENSMUSG00000055980 ENSM

Systems	system	n of lipolysis in adipocytes	04923			8978	USG00000031659 ENSMUSG00000047250 ENSMUSG00000027523 ENSMUSG0000022994 ENSMUSG00000025509
	Environmental						
Organismal Systems	adaptation	Circadian rhythm	mmu 04710	6	31	0.000935253	ENSMUSG00000055866 ENSMUSG00000020889 ENSMUSG00000068742 ENSMUSG00000030256 ENSMUSG00000055116 ENSMUSG00000020893
		Graft-versus-host disease					ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000055413 ENSMUSG00000033024 ENSMUSG0000079547 ENSMUSG00000076617 ENSMUSG00000073421
Human Diseases	Immune diseases		mmu 05332	9	72	0.000962251	ENSMUSG00000022994 ENSMUSG00000031790 ENSMUSG00000059456 ENSMUSG00000031659 ENSMUSG00000031740 ENSMUSG00000026407 ENSMUSG0000057897 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00000052889
Organismal Systems	Endocrine system	GnRH signaling pathway	mmu 04912	10	88	0.001001215	ENSMUSG00000043091 ENSMUSG00000036390 ENSMUSG00000041417 ENSMUSG00000024590 ENSMUSG00000030560 ENSMUSG00000015312 ENSMUSG0000007659 ENSMUSG00000021025 ENSMUSG00000038642 ENSMUSG00000029580 ENSMUSG00000031628 ENSMUSG00000024910 ENSMUSG00000026029
Cellular Processes	Cell growth and death	Apoptosis	mmu 04210	13	139	0.001020881	ENSMUSG00000026675 ENSMUSG00000083816 ENSMUSG00000024087 ENSMUSG00000031659 ENSMUSG00000027523 ENSMUSG00000021226 ENSMUSG0000032315 ENSMUSG00000022994
Organismal Systems	Endocrine system	Ovarian steroidogenesis	mmu 04913	8	58	0.001028553	ENSMUSG00000020395 ENSMUSG00000005763 ENSMUSG00000041417 ENSMUSG00000000409 ENSMUSG00000032475 ENSMUSG00000066877 ENSMUSG0000021025 ENSMUSG00000036526 ENSMUSG00000030742 ENSMUSG00000053977 ENSMUSG00000027347
Organismal Systems	Immune system	T cell receptor signaling pathway	mmu 04660	11	105	0.001053924	ENSMUSG00000021638 ENSMUSG00000022831 ENSMUSG00000028906 ENSMUSG00000029120 ENSMUSG00000020900 ENSMUSG00000020782 ENSMUSG0000097652 ENSMUSG00000053093 ENSMUSG00000068036 ENSMUSG00000000000
Cellular Processes	Cellular community -	Tight junction	mmu 04530	13	141	0.001151162	

	eukaryote						029580 ENSMUSG000000052889 ENSMUSG000000022443 ENSMUSG0000000017
	s						39
	Endocrine						
	and	Type I					ENSMUSG000000037649 ENSMUSG000000037548 ENSMUSG000000036594 ENSM
Human	metabolic	diabetes	mmu			0.00147	USG000000060586 ENSMUSG000000055413 ENSMUSG000000079547 ENSMUSGO
Diseases	diseases	mellitus	04940	9	77	7046	0000076617 ENSMUSG000000073421 ENSMUSG000000026204
							ENSMUSG000000041417 ENSMUSG000000059456 ENSMUSG000000027995 ENSM
							USG000000017737 ENSMUSG000000023067 ENSMUSG000000056130 ENSMUSGO
Human	Infectious	Hepatitis	mmu			0.00153	0000026029 ENSMUSG000000040033 ENSMUSG000000026104 ENSMUSG000000
Diseases	diseases:	B	05161	13	146	8625	021025 ENSMUSG000000031628 ENSMUSG000000052889 ENSMUSG0000000268
	Viral						96
		Fructose					
	Carbohydr	and					
	ate	mannose					
Metabolism	metabolis	metaboli	mmu			0.00162	ENSMUSG000000025648 ENSMUSG000000027227 ENSMUSG000000038028 ENSM
Environmen	m	sm	00051	6	35	6927	USG000000021456 ENSMUSG000000029162 ENSMUSG000000026773
tal							ENSMUSG000000048756 ENSMUSG000000035064 ENSMUSG000000041417 ENSM
Information	Signal	AMPK					USG000000042010 ENSMUSG000000029120 ENSMUSG000000025648 ENSMUSGO
Processing	transducti	signaling	mmu			0.00163	0000055980 ENSMUSG000000021456 ENSMUSG000000031490 ENSMUSG000000
Environmen	on	pathway	04152	12	129	6744	017950 ENSMUSG000000024900 ENSMUSG000000026773
tal							ENSMUSG000000083816 ENSMUSG000000021277 ENSMUSG000000041417 ENSM
Information	Signal	TNF					USG000000043613 ENSMUSG000000017737 ENSMUSG000000026029 ENSMUSGO
Processing	transducti	signaling	mmu			0.00169	0000031790 ENSMUSG000000021025 ENSMUSG000000031628 ENSMUSG000000
	on	pathway	04668	11	112	7372	091514 ENSMUSG000000028599
		Arginine					
	Amino	and					
	acid	proline					ENSMUSG000000026687 ENSMUSG000000069835 ENSMUSG000000025190 ENSM
Metabolism	metabolis	metaboli	mmu			0.00215	USG000000019916 ENSMUSG000000011179 ENSMUSG000000001270 ENSMUSGO
Environmen	m	sm	00330	7	51	0767	0000020826
tal	Signal	FoxO	mmu			0.00232	ENSMUSG000000048756 ENSMUSG000000019828 ENSMUSG000000036390 ENSM
	transducti	signaling	04068	12	135	486	USG000000041417 ENSMUSG000000027187 ENSMUSG000000019970 ENSMUSGO

Information Processing	on	pathway					0000078566 ENSMUSG00000055980 ENSMUSG00000023067 ENSMUSG00000025422 ENSMUSG00000097675 ENSMUSG00000015312
	Cellular community - eukaryotes	Gap junction	mmu04540	9	86	0.002944407	ENSMUSG00000043091 ENSMUSG00000019828 ENSMUSG00000027523 ENSMUSG000000052889 ENSMUSG00000031659 ENSMUSG000000058672 ENSMUSG00000038668 ENSMUSG00000062591 ENSMUSG00000022994
	Carbohydrate metabolism	Butanoate metabolism	mmu00650	5	27	0.002956437	ENSMUSG00000022186 ENSMUSG00000057880 ENSMUSG00000030972 ENSMUSG00000025745 ENSMUSG00000027875
	Amino acid metabolism	Tyrosine metabolism	mmu00350	6	40	0.00296975	ENSMUSG00000074207 ENSMUSG00000033307 ENSMUSG00000025190 ENSMUSG00000000326 ENSMUSG00000063558 ENSMUSG00000024903 ENSMUSG00000086451 ENSMUSG00000041417 ENSMUSG00000022383 ENSMUSG00000033220 ENSMUSG00000026407 ENSMUSG00000015968 ENSMUSG00000031659 ENSMUSG00000020777 ENSMUSG00000057897 ENSMUSG00000068036 ENSMUSG00000021025 ENSMUSG00000027523 ENSMUSG00000033161 ENSMUSG00000020331 ENSMUSG00000022994
Environmental Information Processing	Signal transduction	cAMP signaling pathway	mmu04024	15	198	0.003047305	ENSMUSG00000005763 ENSMUSG00000041417 ENSMUSG00000029120 ENSMUSG00000027995 ENSMUSG00000020826 ENSMUSG00000022965 ENSMUSG00000021025 ENSMUSG00000027523 ENSMUSG00000037411 ENSMUSG00000026029
Human Diseases	Infectious diseases: Parasitic	trypanosomiasis)	mmu05142	10	104	0.003116019	
Environmental Information Processing Cellular	Signal transduction	ErbB signaling pathway	mmu04012	9	87	0.00316079	ENSMUSG00000041417 ENSMUSG00000032475 ENSMUSG00000023067 ENSMUSG000000066877 ENSMUSG00000031490 ENSMUSG00000062991 ENSMUSG00000057897 ENSMUSG00000052889 ENSMUSG00000060275
	Transport	Lysosomes	mmu	11	124	0.00352	ENSMUSG00000029426 ENSMUSG00000028164 ENSMUSG00000031903 ENSM

Processes	and catabolism	e	04142			192	USG00000026177 ENSMUSG00000028581 ENSMUSG00000024910 ENSMUSG0000038642 ENSMUSG00000020604 ENSMUSG00000025351 ENSMUSG0000030560 ENSMUSG00000033793
Human Diseases	Immune diseases	Allograft rejection	mmu 05330	8	72	0.00354 2564	ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000055413 ENSMUSG00000079547 ENSMUSG0000076617 ENSMUSG00000073421
Organismal Systems	Endocrine system	Renin secretion	mmu 04924	8	72	0.00354 2564	ENSMUSG00000056025 ENSMUSG00000026407 ENSMUSG00000086451 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00000031980 ENSMUSG0000022994 ENSMUSG00000049115
Organismal Systems	Digestive system	Gastric acid secretion	mmu 04971	8	73	0.00382 5338	ENSMUSG00000022994 ENSMUSG00000031659 ENSMUSG00000057897 ENSMUSG00000027523 ENSMUSG00000044951 ENSMUSG00000029580 ENSMUSG0000052889 ENSMUSG00000033161
Environmental Information Processing	Signal transduction	Phospholipase D signaling pathway	mmu 04072	12	146	0.00419 0783	ENSMUSG00000019828 ENSMUSG00000041417 ENSMUSG00000022994 ENSMUSG00000018008 ENSMUSG00000031659 ENSMUSG00000059456 ENSMUSG0000038668 ENSMUSG00000058715 ENSMUSG00000026180 ENSMUSG0000005672 ENSMUSG00000049115 ENSMUSG00000027523
Metabolism	Lipid metabolism	lipid metabolism	mmu 00564	9	94	0.00504 7723	ENSMUSG00000024843 ENSMUSG00000038732 ENSMUSG00000027999 ENSMUSG00000023019 ENSMUSG00000041193 ENSMUSG00000031903 ENSMUSG0000029330 ENSMUSG00000041202 ENSMUSG00000021608
Organismal Systems	Nervous system	Dopaminergic synapse	mmu 04728	11	135	0.00633 4589	ENSMUSG00000032766 ENSMUSG00000023439 ENSMUSG00000029120 ENSMUSG00000000326 ENSMUSG00000027669 ENSMUSG00000057897 ENSMUSG0000015968 ENSMUSG00000055116 ENSMUSG00000027523 ENSMUSG00000052889 ENSMUSG00000063594
Organismal Systems	Aging	Longevity regulating pathway	mmu 04213	7	64	0.00671 3779	ENSMUSG00000048756 ENSMUSG00000041417 ENSMUSG00000027187 ENSMUSG00000055980 ENSMUSG00000031659 ENSMUSG00000022994 ENSMUSG0000022982

		multiple species					
Environmental Information Processing	Signal transduction	mTOR signaling pathway	mmu 04150	12	156	0.00678 5562	ENSMUSG00000030170 ENSMUSG00000041417 ENSMUSG00000020176 ENSMUSG00000010095 ENSMUSG00000019970 ENSMUSG00000055980 ENSMUSG0000031490 ENSMUSG00000015957 ENSMUSG00000092368 ENSMUSG00000020108 ENSMUSG00000052889 ENSMUSG00000033793
Organismal Systems	Endocrine system	Melanogenesis EGFR tyrosine kinase inhibitor resistance: Antineoplastic	mmu 04916	9	99	0.00685 9459	ENSMUSG00000030170 ENSMUSG00000022994 ENSMUSG00000005672 ENSMUSG00000027985 ENSMUSG00000031659 ENSMUSG00000015957 ENSMUSG0000057897 ENSMUSG00000027523 ENSMUSG00000052889
Human Diseases	Drug resistance: Antineoplastic	Neuroactive ligand-receptor interaction	mmu 01521	8	82	0.00722 2058	ENSMUSG00000048756 ENSMUSG00000041417 ENSMUSG00000031490 ENSMUSG00000062991 ENSMUSG00000007659 ENSMUSG00000092368 ENSMUSG0000052889 ENSMUSG00000060275
Environmental Information Processing	Signaling molecules and interaction	Toll-like receptor signaling pathway	mmu 04080	18	285	0.00748 0991	ENSMUSG00000048779 ENSMUSG00000019828 ENSMUSG00000023132 ENSMUSG00000031340 ENSMUSG00000031343 ENSMUSG00000032492 ENSMUSG0000022041 ENSMUSG00000034009 ENSMUSG00000050147 ENSMUSG00000044338 ENSMUSG00000032860 ENSMUSG00000043895 ENSMUSG00000034881 ENSMUSG00000086451 ENSMUSG00000038668 ENSMUSG00000056529 ENSMUSG00000001985 ENSMUSG00000049115
Organismal Systems	Immune system	Infectious diseases: Viral	mmu 04620	9	101	0.00770 9376	ENSMUSG00000029771 ENSMUSG00000029417 ENSMUSG00000041417 ENSMUSG00000027995 ENSMUSG00000021277 ENSMUSG00000056130 ENSMUSG0000026104 ENSMUSG00000021025 ENSMUSG00000026029
Human Diseases	Signaling molecules	Cytokine-cytokine	mmu 05162	11	139	0.00771 0292	ENSMUSG00000066861 ENSMUSG00000002325 ENSMUSG00000022965 ENSMUSG00000027995 ENSMUSG00000032690 ENSMUSG00000040033 ENSMUSG0000026104 ENSMUSG00000021025 ENSMUSG00000052776 ENSMUSG00000026896 ENSMUSG00000041417
Environmental	Signaling molecules	Cytokine-cytokine	mmu 04060	17	265	0.00798 4261	ENSMUSG00000029417 ENSMUSG00000028444 ENSMUSG00000031520 ENSMUSG00000030745 ENSMUSG00000037157 ENSMUSG00000010142 ENSMUSG00000000000

Information Processing	and interaction	receptor interaction					0000024621 ENSMUSG00000052336 ENSMUSG00000032089 ENSMUSG00000022965 ENSMUSG00000026073 ENSMUSG00000045382 ENSMUSG00000026180 ENSMUSG00000044337 ENSMUSG00000005672 ENSMUSG00000020676 ENSMUSG00000028599
		Proximal tubule bicarbonate reclamation	mmu04964	4	22	0.008211243	ENSMUSG00000025792 ENSMUSG00000060961 ENSMUSG00000033161 ENSMUSG00000000805
Organismal Systems	Excretory system						ENSMUSG00000028444 ENSMUSG00000041417 ENSMUSG00000002325 ENSMUSG00000063558 ENSMUSG00000023067 ENSMUSG00000037157 ENSMUSG00000032089 ENSMUSG00000040033 ENSMUSG00000026104 ENSMUSG00000007659 ENSMUSG00000022965 ENSMUSG00000030745
Environmental Information Processing	Signal transduction	Jak-STAT signaling pathway	mmu04630	12	161	0.008487866	
Organismal Systems	Endocrine system	Renin-angiotensin system	mmu04614	5	36	0.008735496	ENSMUSG00000061119 ENSMUSG00000028024 ENSMUSG00000053719 ENSMUSG00000031980 ENSMUSG00000049115
		Autoimmune					ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000055413 ENSMUSG00000079547 ENSMUSG00000076617 ENSMUSG00000073421
Human Diseases	Immune diseases	thyroid disease	mmu05320	8	87	0.009893284	
		Complement and coagulation cascades	mmu04610	8	87	0.009893284	ENSMUSG00000044206 ENSMUSG00000030789 ENSMUSG00000037411 ENSMUSG00000050147 ENSMUSG00000001930 ENSMUSG00000079105 ENSMUSG00000026399 ENSMUSG00000030111
Organismal Systems	Immune system	Endocrine and other factor-re	mmu04961	6	54	0.010992145	ENSMUSG00000022994 ENSMUSG00000032492 ENSMUSG00000053719 ENSMUSG00000027523 ENSMUSG00000033161 ENSMUSG00000052889

		regulated calcium reabsorption					
Metabolism	Metabolism of cofactors and vitamins	Retinol metabolism alpha-Linolenic acid	mmu00830	8	89	0.011144954	ENSMUSG00000013584 ENSMUSG00000074207 ENSMUSG00000022210 ENSMUSG00000005547 ENSMUSG00000030483 ENSMUSG00000063558 ENSMUSG00000032315 ENSMUSG00000056666
Metabolism	Lipid metabolism	Systemic lupus erythematosus	mmu00592	4	25	0.012117184	ENSMUSG00000041193 ENSMUSG00000020777 ENSMUSG00000027999 ENSMUSG00000041202
Human Diseases	Immune diseases	Parkinson's disease	mmu005322	11	149	0.012168512	ENSMUSG00000037649 ENSMUSG00000037548 ENSMUSG00000068854 ENSMUSG00000036594 ENSMUSG00000060586 ENSMUSG00000079105 ENSMUSG0000015947 ENSMUSG00000079547 ENSMUSG00000076617 ENSMUSG00000073421 ENSMUSG00000093577
Human Diseases	Neurodegenerative diseases	Adipocytokine signaling pathway	mmu005012	11	149	0.012168512	ENSMUSG00000032596 ENSMUSG00000029223 ENSMUSG00000101111 ENSMUSG00000101249 ENSMUSG00000051811 ENSMUSG00000044285 ENSMUSG0000064367 ENSMUSG00000102070 ENSMUSG00000023826 ENSMUSG00000031628 ENSMUSG00000025428
Organismal Systems	Endocrine system	Aldosterone-regulated sodium reabsorption	mmu004920	7	73	0.012619589	ENSMUSG00000022383 ENSMUSG00000042010 ENSMUSG00000055980 ENSMUSG00000021025 ENSMUSG00000028645 ENSMUSG00000024900 ENSMUSG0000028599
Organismal Systems	Excretory system		mmu004960	5	40	0.012861752	ENSMUSG00000019970 ENSMUSG00000033161 ENSMUSG00000052889 ENSMUSG00000041417 ENSMUSG00000055980

		tion Fat digestion and					
Organismal Systems	Digestive system Cellular communit y -	absorpti on	mmu 04975	5	40	0.01286 1752	ENSMUSG00000041193 ENSMUSG00000052396 ENSMUSG00000028158 ENSM USG00000041202 ENSMUSG00000027999
Cellular Processes	eukaryote s	Adheren s junction	mmu 04520	7	74	0.01345 1477	ENSMUSG00000033220 ENSMUSG00000027985 ENSMUSG00000032012 ENSM USG00000006411 ENSMUSG00000025372 ENSMUSG00000068036 ENSMUSGO 0000029580
Environmen tal Information Processing	Signal transducti on	Hippo signaling pathway -multiple species	mmu 04392	4	26	0.01364 248	ENSMUSG00000042129 ENSMUSG00000036862 ENSMUSG00000027339 ENSM USG00000025239
Environmen tal Information Processing	Signal transducti on	cGMP-PK G signaling pathway	mmu 04022	12	173	0.01393 2619	ENSMUSG00000041417 ENSMUSG00000053093 ENSMUSG00000026407 ENSM USG00000015968 ENSMUSG00000055980 ENSMUSG00000031659 ENSMUSGO 0000086451 ENSMUSG00000020788 ENSMUSG00000044951 ENSMUSG00000 033161 ENSMUSG00000022994 ENSMUSG00000049115
Human Diseases	Drug resistance: Antineopl astic	Endocrin e resistanc e	mmu 01522	8	95	0.01560 0811	ENSMUSG00000041417 ENSMUSG00000017737 ENSMUSG00000023067 ENSM USG00000031659 ENSMUSG00000031740 ENSMUSG00000027523 ENSMUSGO 0000014773 ENSMUSG00000022994
Organismal Systems	Aging	Longevit y regulatin g pathway	mmu 04211	8	96	0.01645 2845	ENSMUSG00000048756 ENSMUSG00000041417 ENSMUSG00000027187 ENSM USG00000055980 ENSMUSG00000031659 ENSMUSG00000031490 ENSMUSGO 0000037204 ENSMUSG00000022994
Environmen tal	Signal transducti	Phosphat idylinosit	mmu 04070	8	97	0.01733 7913	ENSMUSG00000041417 ENSMUSG00000026288 ENSMUSG00000034570 ENSM USG00000020937 ENSMUSG00000024525 ENSMUSG00000025178 ENSMUSGO

Information Processing	on	ol signaling system					0000029330 ENSMUSG00000052889
	Lipid	Ether lipid					
Metabolism	metabolism	metabolism	mmu00565	5	44	0.018136244	ENSMUSG00000041193 ENSMUSG00000022425 ENSMUSG00000041202 ENSMUSG00000027999 ENSMUSG00000021608
Organismal Systems	Endocrine system	Estrogen signaling pathway	mmu04915	8	98	0.018256664	ENSMUSG00000019828 ENSMUSG00000041417 ENSMUSG00000017737 ENSMUSG00000031659 ENSMUSG00000031740 ENSMUSG00000024222 ENSMUSG00000027523 ENSMUSG00000022994
Metabolism	Global and overview maps	Carbon metabolism	mmu01200	9	118	0.018516813	ENSMUSG00000030541 ENSMUSG00000027187 ENSMUSG00000025190 ENSMUSG00000021456 ENSMUSG00000053604 ENSMUSG00000024827 ENSMUSG00000024640 ENSMUSG00000020534 ENSMUSG00000025745
Organismal Systems	Digestive system	Carbohydrate digestion and absorption	mmu04973	5	45	0.019647567	ENSMUSG00000074264 ENSMUSG00000033161 ENSMUSG00000052889 ENSMUSG00000041417 ENSMUSG00000015968
Metabolism	Carbohydrate metabolism	Glyoxylate and dicarboxylate	mmu00630	4	30	0.020934627	ENSMUSG00000026473 ENSMUSG00000020534 ENSMUSG00000024827 ENSMUSG00000027187
Metabolism	Energy metabolism	Nitrogen metabolism	mmu00910	3	17	0.023367473	ENSMUSG00000026473 ENSMUSG00000038526 ENSMUSG00000000805
Human Diseases	Cancers: Overview	Central carbon metabolism	mmu05230	6	66	0.025113944	ENSMUSG00000041417 ENSMUSG00000038028 ENSMUSG00000030110 ENSMUSG00000006494 ENSMUSG00000005672 ENSMUSG00000028645

		sm in cancer Inflamm atory mediator regulatio					
Organismal Systems	Sensory system Metabolis m of other amino acids Endocrine and metabolic diseases	n of TRP channels beta-Ala nine metaboli sm	mmu 04750	9	126	0.02629 5449	ENSMUSG00000041417 ENSMUSG00000022994 ENSMUSG00000000320 ENSM USG00000032860 ENSMUSG00000031659 ENSMUSG00000033007 ENSMUSGO 0000057897 ENSMUSG00000027523 ENSMUSG00000052889
Metabolism			mmu 00410	4	33	0.02771 3119	ENSMUSG00000057880 ENSMUSG00000026687 ENSMUSG00000025745 ENSM USG00000033308
Human Diseases		Type II diabetes mellitus RIG-I-like receptor	mmu 04930	5	50	0.02843 3803	ENSMUSG00000015968 ENSMUSG00000020866 ENSMUSG00000041417 ENSM USG00000096146 ENSMUSG00000055980
Organismal Systems	Immune system	signaling pathway Fc epsilon RI	mmu 04622	6	69	0.02995 3187	ENSMUSG00000024349 ENSMUSG00000026029 ENSMUSG00000021277 ENSM USG00000021025 ENSMUSG00000026896 ENSMUSG00000035692
Organismal Systems	Immune system Metabolis m of cofactors and vitamins	signaling pathway One carbon pool by folate	mmu 04664	6	69	0.02995 3187	ENSMUSG00000041417 ENSMUSG00000031264 ENSMUSG00000026288 ENSM USG00000033220 ENSMUSG00000030742 ENSMUSG00000058715
Metabolism			mmu 00670	3	19	0.03014 849	ENSMUSG00000085337 ENSMUSG00000020256 ENSMUSG00000020534
Metabolism	Carbohydr	Inositol	mmu	6	70	0.03169	ENSMUSG00000026288 ENSMUSG00000034570 ENSMUSG00000020937 ENSM

	ate metabolis m	phosphat e metaboli sm Amyotro phic lateral sclerosis (ALS) Nicotinat e and nicotina mide metaboli sm	00562			267	USG00000024525 ENSMUSG00000025178 ENSMUSG00000019139
Human Diseases	Neurodeg enerative diseases		mmu 05014	5	52	0.03254 431	ENSMUSG00000007659 ENSMUSG00000031628 ENSMUSG00000028599 ENSM USG00000022982 ENSMUSG00000027187
Metabolism	Metabolis m of cofactors and vitamins		mmu 00760	4	35	0.03287 7928	ENSMUSG00000032271 ENSMUSG00000032456 ENSMUSG00000032420 ENSM USG00000063558
Organismal Systems	Endocrine system Amino acid metabolis m	Thyroid hormone synthesis Arginine biosynth esis	mmu 04918	6	71	0.03349 6605	ENSMUSG00000022994 ENSMUSG00000031659 ENSMUSG00000027523 ENSM USG00000025823 ENSMUSG00000052889 ENSMUSG00000033161
Metabolism	Amino acid metabolis m		mmu 00220	3	20	0.03388 5144	ENSMUSG00000026473 ENSMUSG00000025190 ENSMUSG00000020826
Metabolism	Amino acid metabolis m	Lysine degradat ion	mmu 00310	5	53	0.03473 1167	ENSMUSG00000032649 ENSMUSG00000019055 ENSMUSG00000026687 ENSM USG00000025745 ENSMUSG00000032374 ENSMUSG00000052593 ENSMUSG00000101111 ENSMUSG00000026407 ENSM USG00000015968 ENSMUSG00000101249 ENSMUSG00000051811 ENSMUSGO 0000102070 ENSMUSG00000020788 ENSMUSG00000031628 ENSMUSG000000 025428 ENSMUSG00000026029
Human Diseases Metabolism	Neurodeg enerative diseases Amino	Alzheim e r's disease Alanine,	mmu 05010	11	177	0.03496 67	ENSMUSG00000026473 ENSMUSG00000025190 ENSMUSG00000057880 ENSM

	acid metabolism	aspartate and glutamate metabolism	00250			9355	USG00000024903
Metabolism	Metabolism of cofactors and vitamins	Vitamin B6 metabolism Phenylalanine, tyrosine and tryptophan	mmu 00750	2	9	0.04454 9492	ENSMUSG00000024640 ENSMUSG00000063558
Metabolism	Amino acid metabolism	biosynthesis	mmu 00400	2	9	0.04454 9492	ENSMUSG00000025190 ENSMUSG00000024903
Human Diseases	Infectious diseases: Bacterial	Legionellosis	mmu 05134	5	58	0.04700 7675	ENSMUSG00000021025 ENSMUSG00000027995 ENSMUSG00000078566 ENSMUSG00000031628 ENSMUSG00000026029
Metabolism	Global and overview maps	Biosynthesis of amino acids	mmu 01230	6	79	0.05031 902	ENSMUSG00000030541 ENSMUSG00000026473 ENSMUSG00000020534 ENSMUSG00000024640 ENSMUSG00000025190 ENSMUSG00000053604
Metabolism	Amino acid metabolism	Phenylalanine metabolism	mmu 00360	3	24	0.05108 3659	ENSMUSG00000033307 ENSMUSG00000025190 ENSMUSG00000024903
Genetic	Folding,	Protein	mmu	10	167	0.05226	ENSMUSG00000029657 ENSMUSG00000053317 ENSMUSG00000032115 ENSM

Information Processing	sorting and degradation	processing in endoplasmic reticulum	04141			0332	USG00000051984 ENSMUSG00000031770 ENSMUSG00000041556 ENSMUSG0000023826 ENSMUSG00000025823 ENSMUSG00000028410 ENSMUSG0000030036
Environmental Information Processing	Signal transduction	Wnt signaling pathway	mmu 04310	9	146	0.05519 8957	ENSMUSG00000030170 ENSMUSG00000015957 ENSMUSG00000033220 ENSMUSG00000027996 ENSMUSG00000034574 ENSMUSG00000027985 ENSMUSG0000028988 ENSMUSG00000057897 ENSMUSG00000052889
Metabolism	Nucleotide metabolism	Pyrimidine metabolism	mmu 00240	7	104	0.05974 6631	ENSMUSG00000033308 ENSMUSG00000020407 ENSMUSG00000035824 ENSMUSG00000032420 ENSMUSG00000020638 ENSMUSG00000075704 ENSMUSG0000021236
Metabolism	Lipid metabolism	Synthesis and degradation of ketone bodies	mmu 00072	2	11	0.06064 2642	ENSMUSG00000022186 ENSMUSG00000027875
Cellular Processes	Transport and catabolism	Endocytosis	mmu 04144	15	294	0.06315 5641	ENSMUSG00000018008 ENSMUSG00000026979 ENSMUSG00000030110 ENSMUSG00000046993 ENSMUSG00000024621 ENSMUSG00000036995 ENSMUSG0000027293 ENSMUSG00000055413 ENSMUSG00000025422 ENSMUSG00000045382 ENSMUSG00000075284 ENSMUSG00000026180 ENSMUSG00000005672 ENSMUSG00000040797 ENSMUSG00000056515
Human Diseases	Cancers: Overview	Viral carcinogenesis	mmu 05203	13	245	0.06333 4912	ENSMUSG00000021277 ENSMUSG00000041417 ENSMUSG00000002325 ENSMUSG00000023067 ENSMUSG00000068854 ENSMUSG00000031161 ENSMUSG0000034245 ENSMUSG00000055413 ENSMUSG00000004698 ENSMUSG00000021025 ENSMUSG00000031628 ENSMUSG00000111815 ENSMUSG00000026029
Environmental	Membranes	ABC	mmu	4	46	0.07065	ENSMUSG00000020620 ENSMUSG00000035722 ENSMUSG00000029802 ENSM

Information Processing	electrotransporters	Mineral absorption	020104978	4	46	0.0491	USG00000041797
Organismal Systems	Digestive system	Steroid hormone biosynthesis	mmu00140	6	87	0.071521838	ENSMUSG00000026177 ENSMUSG00000033161 ENSMUSG00000031765 ENSMUSG00000005413
Metabolism	Lipid metabolism	Mucin type O-Glycan biosynthesis	mmu00512	3	28	0.071704429	ENSMUSG000000061740 ENSMUSG00000026675 ENSMUSG00000024087 ENSMUSG00000000326 ENSMUSG00000030483 ENSMUSG00000032315
Metabolism	Glycan biosynthesis and metabolism	Purine metabolism	mmu00230	10	179	0.074115922	ENSMUSG000000021903 ENSMUSG00000092329 ENSMUSG00000020520 ENSMUSG00000024066 ENSMUSG00000032565 ENSMUSG00000100075 ENSMUSG00000031659 ENSMUSG00000032420 ENSMUSG00000085337 ENSMUSG00000021236 ENSMUSG00000075270 ENSMUSG00000022994 ENSMUSG00000019990
Metabolism	Nucleotide metabolism	Non-alcoholic fatty liver disease (NAFLD)	mmu04932	9	157	0.077542754	ENSMUSG000000101111 ENSMUSG00000022383 ENSMUSG00000055980 ENSMUSG00000051811 ENSMUSG00000101249 ENSMUSG00000026029 ENSMUSG0000102070 ENSMUSG00000031628 ENSMUSG00000041417
Human Diseases	Endocrine and metabolic diseases	Cysteine and methionine metabolism	mmu00270	4	49	0.083634635	ENSMUSG000000025190 ENSMUSG00000032350 ENSMUSG00000024903 ENSMUSG00000048087
Metabolism	Amino acid metabolism						

Metabolism	Lipid metabolism	Linoleic acid metabolism	mmu00591	4	50	0.088204734	ENSMUSG00000018924 ENSMUSG00000041193 ENSMUSG00000041202 ENSMUSG00000027999
	Carbohydrate	Propanoate					
Metabolism	Energy metabolism	Oxidative phosphorylation	mmu00640	3	31	0.089227714	ENSMUSG00000057880 ENSMUSG00000025745 ENSMUSG00000042010 ENSMUSG00000101111 ENSMUSG00000101249 ENSMUSG00000051811 ENSMUSG00000064367 ENSMUSG00000102070 ENSMUSG00000039347 ENSMUSG0000025428 ENSMUSG00000033793
Metabolism	Xenobiotics biodegradation and metabolism	Drug metabolism - other enzymes	mmu00190			8	
Metabolism	Cell growth and death	Apoptosis - multiple species	mmu00983	4	51	0.09289265	ENSMUSG00000024066 ENSMUSG00000020407 ENSMUSG00000035824 ENSMUSG00000033308
Cellular Processes	Cancers: Specific types	Chronic myeloid leukemia					
Human Diseases	Neurodegenerative diseases	Prion diseases	mmu05220	5	73	0.097376443	ENSMUSG00000021025 ENSMUSG00000023067 ENSMUSG00000041417 ENSMUSG00000022952 ENSMUSG00000007659
Human Diseases	Metabolism of other amino acids	Selenocompound metabolism	mmu05020			3	
Metabolism			mmu00450	2	17	0.117733694	ENSMUSG00000075704 ENSMUSG00000003477

		Bacterial invasion of					
Human Diseases	Infectious diseases:	epithelial cells	mmu 05100	5	78	0.11849 1681	ENSMUSG00000041112 ENSMUSG00000029580 ENSMUSG00000046993 ENSMUSG00000022831 ENSMUSG00000041417
Organismal Systems	Digestive system	Salivary secretion	mmu 04970	5	78	0.11849 1681	ENSMUSG00000052889 ENSMUSG00000033161 ENSMUSG00000022994 ENSMUSG00000031659 ENSMUSG00000027523
Human Diseases	Infectious diseases:	Salmonella infection	mmu 05132	5	78	0.11849 1681	ENSMUSG00000020826 ENSMUSG00000029580 ENSMUSG00000052688 ENSMUSG00000022965 ENSMUSG00000046993
Human Diseases	Cancers: Overview	Choline metabolism in cancer	mmu 05231	6	101	0.11911 5289	ENSMUSG00000024843 ENSMUSG00000041417 ENSMUSG00000033220 ENSMUSG00000031490 ENSMUSG00000023829 ENSMUSG00000052889
Organismal Systems	Endocrine system	Glucagon signaling pathway	mmu 04922	6	102	0.12300 2553	ENSMUSG00000022383 ENSMUSG00000042010 ENSMUSG00000057897 ENSMUSG00000027523 ENSMUSG00000024900 ENSMUSG00000028645
Metabolism	Lipid metabolism	Glycerolipid metabolism	mmu 00561	4	59	0.13436 3749	ENSMUSG00000052396 ENSMUSG00000026687 ENSMUSG00000038732 ENSMUSG00000025509
Human Diseases	Substance dependence	Alcoholism	mmu 05034	10	204	0.13561 6793	ENSMUSG00000032766 ENSMUSG00000023439 ENSMUSG00000027669 ENSMUSG00000068854 ENSMUSG00000031161 ENSMUSG00000034245 ENSMUSG0000004698 ENSMUSG00000027523 ENSMUSG00000093577 ENSMUSG00000063594
Environmental Information Processing	Signal transduction	Hippo signaling pathway	mmu 04390	8	154	0.13650 9672	ENSMUSG00000030170 ENSMUSG00000025239 ENSMUSG00000029120 ENSMUSG00000037411 ENSMUSG00000027985 ENSMUSG00000015957 ENSMUSG00000029580 ENSMUSG00000020782
Metabolism	Lipid metabolism	Steroid biosynthesis	mmu 00100	2	19	0.13891 1117	ENSMUSG00000026675 ENSMUSG00000107653

	m	esis					
Environmen	Signal	VEGF					
Information	transducti	signaling	mmu			0.14000	ENSMUSG00000033220 ENSMUSG00000083816 ENSMUSG00000052889 ENSM
Processing	on	pathway	04370	4	60	5701	USG00000041417
	Carbohydr						
	ate	Pyruvate					
Metabolism	metabolis	metaboli	mmu			0.14326	
	m	sm	00620	3	39	4409	ENSMUSG00000061046 ENSMUSG00000026687 ENSMUSG00000042010
		2-Oxocar					
		boxylic					
	Global and	acid					
Metabolism	overview	metaboli	mmu			0.14978	
	maps	sm	01210	2	20	738	ENSMUSG00000030541 ENSMUSG00000025190
		Glycosa					
		minoglyc					
		an					
		biosynth					
		esis -					
	Glycan	chondroi					
	biosynthes	tin					
	is and	sulfate /					
Metabolism	metabolis	dermata	mmu			0.14978	
	m	n sulfate	00532	2	20	738	ENSMUSG00000037347 ENSMUSG00000039497
		Glycine,					
		serine					
		and					
	Amino	threonin					
	acid	e					
Metabolism	metabolis	metaboli	mmu			0.15815	
	m	sm	00260	3	41	4988	ENSMUSG00000020534 ENSMUSG00000024827 ENSMUSG00000024640

Human Diseases	Cancers: Specific types	Bladder cancer	mmu 05219	3	41	0.15815 4988	ENSMUSG00000031740 ENSMUSG00000017737 ENSMUSG00000023067
Human Diseases	Cancers: Specific types	Colorectal cancer	mmu 05210	4	64	0.16347 1362	ENSMUSG00000033220 ENSMUSG00000031628 ENSMUSG00000041417 ENSMUSG00000027985
Human Diseases	Cancers: Specific types	Glioma	mmu 05214	4	65	0.16954 7497	ENSMUSG00000023067 ENSMUSG00000052889 ENSMUSG00000041417 ENSMUSG00000057897
Organismal Systems	Excretory system	Vasopressin-regulated water reabsorption	mmu 04962	3	43	0.17349 3093	ENSMUSG00000009013 ENSMUSG00000022994 ENSMUSG00000027523
Human Diseases	Cancers: Specific types	Pancreatic cancer	mmu 05212	4	66	0.17570 1503	ENSMUSG00000033220 ENSMUSG00000026104 ENSMUSG00000041417 ENSMUSG00000007659
Organismal Systems	Endocrine system	Progesterone-mediated oocyte maturation	mmu 04914	5	90	0.17679 362	ENSMUSG00000025586 ENSMUSG00000022994 ENSMUSG00000111815 ENSMUSG00000031659 ENSMUSG00000041417
Organismal Systems	Endocrine system	Insulin signaling pathway	mmu 04910	7	142	0.18654 2333	ENSMUSG00000041417 ENSMUSG00000042010 ENSMUSG00000055980 ENSMUSG00000021456 ENSMUSG00000031490 ENSMUSG00000092368 ENSMUSG00000046794
Human Diseases	Substance dependence	Amphetamine addiction	mmu 05031	4	68	0.18823 0908	ENSMUSG00000027523 ENSMUSG00000052889 ENSMUSG00000057897 ENSMUSG00000015968
Metabolism	Biosynthesis	Caffeine	mmu	1	6	0.19938	ENSMUSG00000024066

	sis of other secondary metabolit es	metaboli sm	00232			173	
Human Diseases	Neurodeg enerative diseases Cancers:	Huntingt on's disease	mmu 05016	9	199	0.20548 027	ENSMUSG000000101111 ENSMUSG000000101249 ENSMUSG000000051811 ENSM USG000000022982 ENSMUSG000000102070 ENSMUSG000000031628 ENSMUSGO 0000033826 ENSMUSG000000025428 ENSMUSG000000026029
Human Diseases	Specific types	Melano ma	mmu 05218	4	72	0.21408 9016	ENSMUSG000000042826 ENSMUSG000000022523 ENSMUSG000000023067 ENSM USG000000041417
Organismal Systems Environmen tal Information Processing	Developm ent	Dorso-ve ntral axis formatio n	mmu 04320	2	26	0.21776 0711	ENSMUSG000000025586 ENSMUSG000000032035
	Signal transducti on	Notch signaling pathway Amino sugar and	mmu 04330	3	49	0.22167 9521	ENSMUSG000000049502 ENSMUSG000000052593 ENSMUSG000000014773
Metabolism	Carbohydr ate metabolis m	nucleotid e sugar metaboli sm	mmu 00520	3	49	0.22167 9521	ENSMUSG000000048065 ENSMUSG000000036820 ENSMUSG000000052102
Organismal Systems Human Diseases	Endocrine system Infectious diseases:	Prolactin signaling pathway Pertussis	mmu 04917 mmu 05133	4 4	74 74	0.22736 8285 0.22736 8285	ENSMUSG000000048756 ENSMUSG000000026104 ENSMUSG000000018899 ENSM USG000000041417 ENSMUSG000000020826 ENSMUSG000000031628 ENSMUSG000000056130 ENSM USG000000018899

Environmental Information Processing	Bacterial	Sphingolipid signaling pathway	mmu 04071	6	125	0.22743 9811	ENSMUSG00000041417 ENSMUSG00000029120 ENSMUSG00000033220 ENSMUSG00000058715 ENSMUSG00000052889 ENSMUSG00000043895
	Signal transduction Cell growth and death						
Cellular Processes	growth and death	Cell cycle	mmu 04110	6	125	0.22743 9811	ENSMUSG00000036390 ENSMUSG00000029521 ENSMUSG00000023067 ENSMUSG00000032411 ENSMUSG00000111815 ENSMUSG00000015312 ENSMUSG00000041417 ENSMUSG00000002111 ENSMUSG00000021277 ENSMUSG00000023067 ENSMUSG00000051457 ENSMUSG00000032089 ENSMUSG0000005540 ENSMUSG00000002983 ENSMUSG00000021025 ENSMUSG00000055413
Human Diseases	Infectious diseases: Viral	Epstein-Barr virus infection	mmu 05169	10	232	0.22803 8458	
Human Diseases	Endocrine and metabolic diseases	onset of diabetes young	mmu 04950	2	27	0.22937 3784	ENSMUSG00000026398 ENSMUSG00000017950
Human Diseases	Cancers: Specific types	Endometrial cancer	mmu 05213	3	52	0.24668 9826	ENSMUSG00000048756 ENSMUSG00000041417 ENSMUSG00000027985
Human Diseases	Cancers: Specific types	Thyroid cancer	mmu 05216	2	29	0.25270 3222	ENSMUSG00000027985 ENSMUSG00000030110
Human Diseases	Cancers: Specific types	Basal cell carcinoma	mmu 05217	3	55	0.27210 2809	ENSMUSG00000030170 ENSMUSG00000027985 ENSMUSG00000015957
Metabolism	Carbohydrate metabolism	Pentose phosphate pathway	mmu 00030	2	31	0.27608 2592	ENSMUSG00000053604 ENSMUSG00000021456
Human	Cancers:	Non-sma	mmu	3	56	0.28063	ENSMUSG00000048756 ENSMUSG00000052889 ENSMUSG00000041417

Diseases	Specific types	II cell lung cancer NOD-like receptor signaling pathway	05223			8023	
Organismal Systems	Immune system	Ubiquinone and other terpenoid-quinone biosynthesis	mmu04621	3	59	0.306365057	ENSMUSG00000021025 ENSMUSG00000021709 ENSMUSG00000026029
Metabolism	Metabolism of cofactors and vitamins	Taurine and hypotaurine metabolism	mmu00130	1	11	0.316980393	ENSMUSG00000003849
Metabolism	Metabolism of other amino acids	Base excision repair	mmu00430	1	11	0.316980393	ENSMUSG00000006344
Genetic Information Processing	Replication and repair	Long-term depression	mmu03410	2	35	0.322624687	ENSMUSG00000029591 ENSMUSG00000035121
Organismal Systems	Nervous system	Taste transduction	mmu04730	3	61	0.323569684	ENSMUSG00000027523 ENSMUSG00000019828 ENSMUSG00000052889
Organismal Systems	Sensory system		mmu04742	4	89	0.331717525	ENSMUSG00000019828 ENSMUSG00000022994 ENSMUSG00000023439 ENSMUSG00000031343

Human Diseases	Cancers:						
	Specific types	Prostate cancer	mmu05215	4	89	0.331717525	ENSMUSG00000021025 ENSMUSG00000023067 ENSMUSG00000041417 ENSMUSG00000027985
Organismal Systems	Nervous system	Synaptic vesicle cycle	mmu04721	3	62	0.332174329	ENSMUSG00000039347 ENSMUSG00000031840 ENSMUSG00000033793
		Pentose and glucuronate interconversions	mmu00040	2	36	0.334157388	ENSMUSG00000039450 ENSMUSG00000027227
Metabolism	Carbohydrate metabolism	Cytosolic DNA-sensing pathway	mmu04623	3	64	0.349366907	ENSMUSG00000021025 ENSMUSG00000024349 ENSMUSG00000027514
Organismal Systems	Immune system	Neurotrophin signaling pathway	mmu04722	5	122	0.365319181	ENSMUSG00000021025 ENSMUSG00000048756 ENSMUSG00000041417 ENSMUSG00000057897 ENSMUSG00000055980
Organismal Systems	Nervous system	Long-term potentiation	mmu04720	3	66	0.366510302	ENSMUSG00000019828 ENSMUSG00000052889 ENSMUSG00000057897
Metabolism	Carbohydrate metabolism	Glycolysis / Gluconeogenesis	mmu00010	3	66	0.366510302	ENSMUSG00000026687 ENSMUSG00000074207 ENSMUSG00000021456
	Lipid metabolism	Fatty acid biosynthesis	mmu00061	1	14	0.379082988	ENSMUSG00000042010

		esis					
Human Diseases	Substance dependence	Nicotine addiction	mmu05033	2	40	0.379630765	ENSMUSG00000031340 ENSMUSG00000031343
Human Diseases	Cancers: Specific types	Renal cell carcinoma	mmu05211	3	68	0.38357414	ENSMUSG00000028645 ENSMUSG00000041417 ENSMUSG00000032035
Metabolism	Metabolism of cofactors and vitamins	Porphyria and chlorophyll metabolism	mmu00860	2	41	0.390800535	ENSMUSG00000005413 ENSMUSG00000003617
Metabolism	Glycan biosynthesis and metabolism	Glycosphingolipid biosynthesis - globoseries	mmu00603	1	15	0.398503665	ENSMUSG000000040364
Genetic Information Processing	Replication and repair	Nucleotide excision repair	mmu03420	2	44	0.423740983	ENSMUSG00000028329 ENSMUSG00000003549 ENSMUSG000000069662 ENSMUSG000000083816 ENSMUSG00000024087 ENSMUSG000000017737 ENSMUSG00000023067 ENSMUSG000000055980 ENSMUSG00000022510 ENSMUSG00000020108 ENSMUSG00000031628 ENSMUSG00000052889
Human Diseases	Cancers: Overview	MicroRNAs in cancer	mmu05206	10	281	0.425770494	
Metabolism	Metabolism of cofactors	Pantothenate and CoA	mmu00770	1	18	0.45319918	ENSMUSG000000033308

Metabolism	and vitamins Glycan biosynthes is and metabolis m	biosynth esis Other glycan degradat ion Signaling pathway s regulatin g pluripote ncy of stem cells	mmu 00511	1	18	0.45319 918	ENSMUSG00000028164
	Cellular communit y - eukaryote s						
Cellular Processes	Infectious diseases: Parasitic Replicatio n and repair Cell		mmu 04550	5	140	0.47602 2145	ENSMUSG00000030170 ENSMUSG00000027796 ENSMUSG00000015957 ENSM USG000000041417 ENSMUSG00000021255
Human Diseases Genetic Information Processing			mmu 05144	2	50	0.48667 2521	ENSMUSG00000023885 ENSMUSG00000027995
		Fanconi anemia pathway	mmu 03460	2	51	0.49673 9592	ENSMUSG00000026429 ENSMUSG00000003549
Cellular Processes	growth and death Metabolis m of terpenoids and polyketide s	Oocyte meiosis Terpenoi d backbon e biosynth esis	mmu 04114	4	116	0.51931 7783	ENSMUSG00000025586 ENSMUSG00000022994 ENSMUSG00000057897 ENSM USG000000031659
Metabolism			mmu 00900	1	24	0.54813 1561	ENSMUSG00000027875

Metabolism	Amino acid metabolism	Histidine metabolism	mmu00340	1	26	0.575963267	ENSMUSG00000026687
Metabolism	Glycan biosynthesis and metabolism	Glycosphingolipid biosynthesis - lacto and neolactoseries	mmu00601	1	26	0.575963267	ENSMUSG00000040364
Organismal Systems	Excretory system	Collectin g duct acid secretion	mmu04966	1	27	0.589230028	ENSMUSG00000039347
Metabolism Genetic Information Processing	Carbohydrate metabolism	Ascorbate and aldarate metabolism	mmu00053	1	27	0.589230028	ENSMUSG00000026687
Information Processing	Transcription	Spliceosome	mmu03040	4	135	0.635252462	ENSMUSG00000021134 ENSMUSG00000022774 ENSMUSG00000070729 ENSMUSG00000031134
Metabolism Genetic Information Processing	Glycan biosynthesis and metabolism	Other types of O-glycan biosynthesis	mmu00514	1	31	0.6382771	ENSMUSG00000032649
Information Processing	Folding, sorting and	Protein export	mmu03060	1	31	0.6382771	ENSMUSG00000053317

	degradati on						
	Carbohydr	Citrate					
	ate	cycle					
	metabolis	(TCA	mmu			0.64959	
Metabolism	m	cycle)	00020	1	32	5678	ENSMUSG00000030541
	Folding,	SNARE					
	sorting	interacti					
Genetic	and	ons in					
Information	degradati	vesicular	mmu			0.66056	
Processing	on	transport	04130	1	33	0365	ENSMUSG00000039232
	Folding,	Ubiquitin					
	sorting	mediate					
Genetic	and	d					
Information	degradati	proteolys	mmu			0.68845	ENSMUSG00000095134 ENSMUSG00000023826 ENSMUSG00000032596 ENSM
Processing	on	is	04120	4	145	02	USG00000041556
	Infectious	African					
Human	diseases:	trypanos	mmu			0.70109	
Diseases	Parasitic	omiasis	05143	1	37	6207	ENSMUSG00000052889
	Transport	Regulatio					
	and	n of					
Cellular	catabolis	autopha	mmu			0.72829	
Processes	m	gy	04140	1	40	0772	ENSMUSG00000097675
	Folding,						
	sorting						
Genetic	and	RNA					
Information	degradati	degradat	mmu			0.74875	
Processing	on	ion	03018	2	83	5276	ENSMUSG00000032565 ENSMUSG00000022863
Genetic	Folding,						
Information	sorting	Proteaso	mmu			0.76823	
Processing	and	me	03050	1	45	2633	ENSMUSG00000024338

	degradati on Glycan biosynthes is and metabolis m	N-Glycan biosynth esis	mmu 00510	1	49	0.79591 8203	ENSMUSG00000030036
Metabolism	Substance dependen ce	Cocaine addiction	mmu 05030	1	49	0.79591 8203	ENSMUSG00000027523
Human Diseases Genetic Information Processing	Translatio n	RNA transport mRNA surveilla nce	mmu 03013	4	170	0.79654 7945	ENSMUSG00000062309 ENSMUSG00000022774 ENSMUSG00000031490 ENSM USG000000027509
Genetic Information Processing	Translatio n	pathway Starch and sucrose metaboli sm	mmu 03015	2	96	0.81523 6554	ENSMUSG00000029120 ENSMUSG00000022774
Metabolism Genetic Information Processing	Carbohydr ate metabolis m	Ribosom e Ribosom e biogenes is in eukaryot es	mmu 00500	1	54	0.82592 503	ENSMUSG00000074264
Genetic Information Processing	Translatio n		mmu 03010	3	148	0.85457 2768	ENSMUSG00000092368 ENSMUSG00000047676 ENSMUSG00000109695
Genetic Information Processing	Translatio n		mmu 03008	1	83	0.93082 1906	ENSMUSG00000062309

Environmental Information Processing	Signal transduction	TGF-beta signaling pathway	mmu 04350	1	85	0.935088968	ENSMUSG00000027796
Organismal Systems	Sensory system	Olfactory transduction	mmu 04740	2	1102	1	ENSMUSG00000045392 ENSMUSG00000057897

Table SV. KEGG analysis of the DEGs in SPM compared to DbCM.

class_A	class_B	Term	ID	Input number	Background number	P-Value	Input
Metabolism	Global and overview maps	Metabolic pathways	mmu0 1100	122	1298	5.72202 E-21	ENSMUSG00000029759 ENSMUSG00000023262 ENSMUSG00000004 6598 ENSMUSG000000061518 ENSMUSG000000058624 ENSMUSG00 000074064 ENSMUSG00000029455 ENSMUSG00000024978 ENSMU SG000000064345 ENSMUSG000000064356 ENSMUSG00000025991 E NSMUSG00000022474 ENSMUSG00000023070 ENSMUSG000000078 592 ENSMUSG000000056973 ENSMUSG000000016252 ENSMUSG000 00026005 ENSMUSG000000039450 ENSMUSG000000055978 ENSMUS G000000011752 ENSMUSG00000025509 ENSMUSG000000031278 EN SMUSG00000020182 ENSMUSG000000031173 ENSMUSG00000001998 7 ENSMUSG000000064341 ENSMUSG00000025495 ENSMUSG000000 001670 ENSMUSG000000010651 ENSMUSG00000025059 ENSMUSG 00000028838 ENSMUSG000000071072 ENSMUSG000000052160 ENS MUSG00000028413 ENSMUSG000000044986 ENSMUSG000000037798 ENSMUSG00000029201 ENSMUSG000000035834 ENSMUSG000000 25204 ENSMUSG00000022853 ENSMUSG000000072949 ENSMUSG0 0000003500 ENSMUSG000000032315 ENSMUSG000000102070 ENSM USG00000029545 ENSMUSG00000028541 ENSMUSG00000028011 ENSMUSG000000030660 ENSMUSG00000021235 ENSMUSG00000002 8393 ENSMUSG00000022546 ENSMUSG000000083816 ENSMUSG00 000003053 ENSMUSG00000028124 ENSMUSG000000032478 ENSMU SG000000057880 ENSMUSG000000042642 ENSMUSG00000020649 E NSMUSG00000021033 ENSMUSG000000001891 ENSMUSG000000035 273 ENSMUSG00000027427 ENSMUSG000000080845 ENSMUSG000 00019139 ENSMUSG000000025651 ENSMUSG00000029780 ENSMUS

Organismal Systems	Immune system	Complement and coagulation cascades	mmu0 4610	24	87	3.49218 E-13	G00000067736 ENSMUSG00000064368 ENSMUSG00000018924 ENSMUSG00000027332 ENSMUSG00000032263 ENSMUSG00000024747 ENSMUSG00000071711 ENSMUSG00000022292 ENSMUSG00000027296 ENSMUSG00000006442 ENSMUSG00000044894 ENSMUSG00000029376 ENSMUSG00000079941 ENSMUSG00000030630 ENSMUSG00000084093 ENSMUSG00000042462 ENSMUSG00000042460 ENSMUSG00000060376 ENSMUSG00000021913 ENSMUSG00000020333 ENSMUSG00000026675 ENSMUSG00000029575 ENSMUSG00000020471 ENSMUSG00000050737 ENSMUSG00000032123 ENSMUSG00000032997 ENSMUSG00000027822 ENSMUSG00000027195 ENSMUSG00000041193 ENSMUSG00000024885 ENSMUSG00000010607 ENSMUSG00000078636 ENSMUSG00000030826 ENSMUSG00000038843 ENSMUSG00000032527 ENSMUSG00000022821 ENSMUSG00000020163 ENSMUSG00000003809 ENSMUSG000000100131 ENSMUSG00000051811 ENSMUSG00000021273 ENSMUSG00000064367 ENSMUSG00000064360 ENSMUSG00000064363 ENSMUSG00000031749 ENSMUSG00000030747 ENSMUSG00000047379 ENSMUSG00000027999 ENSMUSG00000057342 ENSMUSG00000017713 ENSMUSG00000025178 ENSMUSG00000024892 ENSMUSG00000040774 ENSMUSG00000041202 ENSMUSG00000025579 ENSMUSG00000022947
							ENSMUSG00000026715 ENSMUSG00000039109 ENSMUSG00000028001 ENSMUSG00000021999 ENSMUSG00000036887 ENSMUSG00000031444 ENSMUSG00000021492 ENSMUSG00000026579 ENSMUSG00000071178 ENSMUSG00000026399 ENSMUSG00000033831 ENSMUSG00000040552 ENSMUSG00000059481 ENSMUSG00000033860 ENSMUSG00000024164 ENSMUSG00000026874 ENSMUSG00000036896 ENSMUSG00000022181 ENSMUSG00000000290 ENSMUSG00000037411 ENSMUSG00000066366 ENSMUSG00000049130 ENSMUSG00000027249 ENSMUSG00000038224

							ENSMUSG00000059498 ENSMUSG00000030830 ENSMUSG00000059481 ENSMUSG00000033860 ENSMUSG00000000290 ENSMUSG0000059089 ENSMUSG00000024164 ENSMUSG00000049130 ENSMUSG00000026874 ENSMUSG00000094694 ENSMUSG00000026656 ENSMUSG00000036887 ENSMUSG00000040552 ENSMUSG00000036896
Human Diseases	Infectious diseases: Bacterial	Staphylococcus aureus infection	mmu05150	14	53	4.52642E-08	ENSMUSG00000079941 ENSMUSG00000025651 ENSMUSG00000020163 ENSMUSG000000102070 ENSMUSG00000084093 ENSMUSG0000064360 ENSMUSG000000100131 ENSMUSG00000025204 ENSMUSG00000051811 ENSMUSG00000067736 ENSMUSG00000064367 ENSMUSG00000074218 ENSMUSG00000064341 ENSMUSG00000064363 ENSMUSG00000064345 ENSMUSG00000016252 ENSMUSG0000061518 ENSMUSG00000064368 ENSMUSG00000064356 ENSMUSG00000044894
Metabolism	Energy metabolism	Oxidative phosphorylation	mmu00190	20	139	5.03457E-07	ENSMUSG00000083816 ENSMUSG00000059498 ENSMUSG00000094694 ENSMUSG00000024164 ENSMUSG00000004266 ENSMUSG0000059089 ENSMUSG00000027995 ENSMUSG00000000290 ENSMUSG00000027164 ENSMUSG00000027009 ENSMUSG00000030595 ENSMUSG00000026104 ENSMUSG00000052889 ENSMUSG00000039005
Human Diseases	Infectious diseases: Parasitic	Leishmaniasis	mmu05140	14	67	5.42103E-07	ENSMUSG00000058818 ENSMUSG00000054594 ENSMUSG00000059498 ENSMUSG00000081665 ENSMUSG00000002111 ENSMUSG0000002325 ENSMUSG00000059089 ENSMUSG00000026104 ENSMUSG00000027164 ENSMUSG00000015340 ENSMUSG00000007613 ENSMUSG00000037902 ENSMUSG00000030579 ENSMUSG00000026656 ENSMUSG00000021936 ENSMUSG00000015837 ENSMUSG00000081723 ENSMUSG00000026072 ENSMUSG00000070873
Organismal Systems	Development	Osteoclast differentiation	mmu04380	19	133	1.06081E-06	ENSMUSG00000079941 ENSMUSG00000025651 ENSMUSG00000020163 ENSMUSG000000102070 ENSMUSG00000084093 ENSMUSG0000064360 ENSMUSG000000100131 ENSMUSG00000025204 ENSMUSG00000051811 ENSMUSG00000067736 ENSMUSG00000064367 ENSMUSG00000064368
Human Diseases	Neurodegenerative diseases	Parkinson's disease	mmu05012	20	149	1.33683E-06	ENSMUSG00000064368

Organismal Systems	Endocrine system	PPAR signaling pathway	mmu03320	15	85	1.41679E-06	NSMUSG00000074218 ENSMUSG00000064341 ENSMUSG00000064363 ENSMUSG00000064345 ENSMUSG00000016252 ENSMUSG0000061518 ENSMUSG00000064368 ENSMUSG00000064356 ENSMUSG00000044894
							ENSMUSG00000031808 ENSMUSG00000010651 ENSMUSG00000031278 ENSMUSG00000005681 ENSMUSG00000025059 ENSMUSG0000019505 ENSMUSG00000011305 ENSMUSG00000002289 ENSMUSG00000002831 ENSMUSG00000050195 ENSMUSG00000022853 ENSMUSG00000028494 ENSMUSG00000032083 ENSMUSG00000020333 ENSMUSG00000027359
							ENSMUSG00000025991 ENSMUSG00000022546 ENSMUSG00000001670 ENSMUSG00000078592 ENSMUSG00000037798 ENSMUSG0000017713 ENSMUSG00000030826 ENSMUSG00000023262 ENSMUSG00000078636 ENSMUSG00000031173 ENSMUSG00000026005 ENSMUSG00000024892 ENSMUSG00000019987 ENSMUSG00000011752
Metabolism	Global and overview maps	Biosynthesis of amino acids	mmu01230	14	79	3.02194E-06	ENSMUSG00000068798 ENSMUSG00000019122 ENSMUSG00000034116 ENSMUSG00000023078 ENSMUSG00000027646 ENSMUSG0000030595 ENSMUSG00000026104 ENSMUSG00000060509 ENSMUSG00000035373 ENSMUSG00000029684 ENSMUSG00000049103 ENSMUSG00000035352 ENSMUSG00000003283 ENSMUSG00000043004 ENSMUSG00000023439 ENSMUSG00000033220 ENSMUSG0000028874 ENSMUSG00000052336 ENSMUSG00000021508 ENSMUSG00000063594 ENSMUSG00000052889 ENSMUSG00000020143
Organismal Systems	Immune system	Chemokine signaling pathway	mmu04062	22	198	6.74872E-06	ENSMUSG000000103735 ENSMUSG00000022523 ENSMUSG00000006457 ENSMUSG00000029684 ENSMUSG00000027009 ENSMUSG0000045613 ENSMUSG00000027646 ENSMUSG00000014956 ENSMUSG00000020135 ENSMUSG00000057967 ENSMUSG00000044951 ENSMUSG00000005947 ENSMUSG00000034116 ENSMUSG00000021676 ENSMUSG00000062929 ENSMUSG00000022488 ENSMUSG0000030830 ENSMUSG00000038387 ENSMUSG00000030739 ENSMUS
Cellular Processes	Cell motility	Regulation of actin cytoskeleton	mmu04810	23	218	9.13466E-06	

							G00000000290 ENSMUSG00000033220 ENSMUSG00000027249 ENSMUSG00000019907
							ENSMUSG00000032661 ENSMUSG00000025888 ENSMUSG00000044583 ENSMUSG00000059481 ENSMUSG00000002325 ENSMUSG0000026104 ENSMUSG00000024079 ENSMUSG00000042349 ENSMUSG00000059970 ENSMUSG00000032109 ENSMUSG00000037523 ENSMUSG00000039304 ENSMUSG00000030595 ENSMUSG00000018932 ENSMUSG00000035352 ENSMUSG00000021936 ENSMUSG0000024810 ENSMUSG00000052889 ENSMUSG00000039005 ENSMUSG00000026896
Human Diseases	Infectious diseases: Viral	Influenza A Valine, leucine and isoleucine degradation	mmu0 5164	20	172	9.50885 E-06	ENSMUSG00000029482 ENSMUSG00000010651 ENSMUSG00000029545 ENSMUSG00000022853 ENSMUSG00000030826 ENSMUSG0000027332 ENSMUSG00000057880 ENSMUSG00000032263 ENSMUSG00000029455 ENSMUSG00000032527 ENSMUSG00000060376 ENSMUSG00000079941 ENSMUSG00000025651 ENSMUSG00000020163 ENSMUSG00000084093 ENSMUSG00000053093 ENSMUSG0000061518 ENSMUSG00000051811 ENSMUSG00000074218 ENSMUSG00000044894 ENSMUSG00000102070 ENSMUSG00000015968 ENSMUSG00000054640 ENSMUSG00000020882
Metabolism	Amino acid metabolism		mmu0 0280	11	56	1.47065 E-05	ENSMUSG00000032661 ENSMUSG00000094694 ENSMUSG00000039304 ENSMUSG00000002325 ENSMUSG00000026656 ENSMUSG0000027995 ENSMUSG00000026104 ENSMUSG00000024079 ENSMUSG00000042349 ENSMUSG00000059970 ENSMUSG00000037523 ENSMUSG00000027164 ENSMUSG00000030595 ENSMUSG00000004043 ENSMUSG00000044583 ENSMUSG00000039005 ENSMUSG00000026896
Organismal Systems	Circulatory system	Cardiac muscle contraction	mmu0 4260	13	80	1.54671 E-05	ENSMUSG00000058818 ENSMUSG00000025491 ENSMUSG00000094694 ENSMUSG00000004266 ENSMUSG00000026656 ENSMUSG0000028459 ENSMUSG00000028159 ENSMUSG00000033220 ENSMUSG00000025017 ENSMUSG00000030595 ENSMUSG00000052889 ENSMUSG00000034116
Human Diseases	Infectious diseases: Viral	Measles	mmu0 5162	17	139	2.41985 E-05	
Organismal Systems	Immune system	B cell receptor signaling pathway	mmu0 4662	12	75	3.73224 E-05	

							ENSMUSG00000059498 ENSMUSG00000067235 ENSMUSG00000026712 ENSMUSG00000036499 ENSMUSG00000024164 ENSMUSG0000059089 ENSMUSG00000027995 ENSMUSG00000000290 ENSMUSG00000015340 ENSMUSG00000058672 ENSMUSG00000025044 ENSMUSG00000055413 ENSMUSG00000022797 ENSMUSG000000094694 ENSMUSG00000026656 ENSMUSG00000103735 ENSMUSG0000038642 ENSMUSG00000026202 ENSMUSG00000026390 ENSMUSG00000039005
Cellular Processes	Transport and catabolism	Phagosome	mmu04145	20	192	4.02838E-05	ENSMUSG00000026104 ENSMUSG00000059498 ENSMUSG00000026712 ENSMUSG00000036499 ENSMUSG00000057342 ENSMUSG0000059089 ENSMUSG00000027995 ENSMUSG00000044827 ENSMUSG00000000290 ENSMUSG00000027646 ENSMUSG00000027164 ENSMUSG00000026656 ENSMUSG00000056501 ENSMUSG000000094694 ENSMUSG00000021936 ENSMUSG00000038642 ENSMUSG00000024164 ENSMUSG00000055994 ENSMUSG00000039005
Human Diseases	Infectious diseases: Bacterial	Tuberculosis	mmu05152	19	179	4.93092E-05	ENSMUSG00000040329 ENSMUSG00000067336 ENSMUSG00000019122 ENSMUSG00000024793 ENSMUSG00000057722 ENSMUSG0000007613 ENSMUSG00000023078 ENSMUSG00000021796 ENSMUSG00000019966 ENSMUSG00000049103 ENSMUSG00000060509 ENSMUSG00000071713 ENSMUSG00000071714 ENSMUSG000000035373 ENSMUSG00000006235 ENSMUSG00000035352 ENSMUSG0000037035 ENSMUSG00000060548 ENSMUSG00000017057 ENSMUSG00000052336 ENSMUSG00000021508 ENSMUSG00000039304 ENSMUSG00000028859 ENSMUSG00000026072
Environmental Information Processing	Signaling molecules and interaction	Cytokine-cytokine receptor interaction	mmu04060	24	265	5.78552E-05	ENSMUSG00000024087 ENSMUSG00000028011 ENSMUSG00000003809 ENSMUSG00000020182 ENSMUSG00000003477 ENSMUSG0000022853 ENSMUSG00000029455 ENSMUSG00000021913 ENSMUSG00000032315
Metabolism	Amino acid metabolism	Tryptophan metabolism	mmu00380	9	47	0.000103933	ENSMUSG00000079339 ENSMUSG00000032661 ENSMUSG00000067235 ENSMUSG00000024164 ENSMUSG00000002325 ENSMUSG0000027995 ENSMUSG00000024079 ENSMUSG00000042349 ENSMUSG00000000000
Human Diseases	Infectious diseases: Viral	Herpes simplex infection	mmu05168	21	224	0.000105012	

							SG00000014956 ENSMUSG000000062300 ENSMUSG000000037523 ENSMUSG000000026874 ENSMUSG000000055413 ENSMUSG000000027164 ENSMUSG000000030595 ENSMUSG000000026104 ENSMUSG00000035352 ENSMUSG000000021936 ENSMUSG000000055116 ENSMUSG000000046245 ENSMUSG000000026896
							ENSMUSG000000026824 ENSMUSG000000094806 ENSMUSG00000003816 ENSMUSG000000043004 ENSMUSG000000023439 ENSMUSG0000068086 ENSMUSG000000020182 ENSMUSG000000063594 ENSMUSG000000018924 ENSMUSG00000003053 ENSMUSG000000015968 ENSMUSG000000027523 ENSMUSG000000004113 ENSMUSG000000052889 ENSMUSG000000032839
Organismal Systems	Nervous system	Serotonergic synapse	mmu04726	15	133	0.000162192	ENSMUSG000000002111 ENSMUSG000000022523 ENSMUSG000000046532 ENSMUSG000000015957 ENSMUSG000000020135 ENSMUSG0000057967 ENSMUSG000000020048 ENSMUSG000000019966 ENSMUSG000000026104 ENSMUSG000000038668 ENSMUSG000000036904 ENSMUSG000000079465 ENSMUSG000000063594 ENSMUSG000000017386 ENSMUSG000000025860 ENSMUSG000000040760 ENSMUSG00000021270 ENSMUSG000000001552 ENSMUSG000000027523 ENSMUSG000000083816 ENSMUSG000000006586 ENSMUSG000000023439 ENSMUSG000000033220 ENSMUSG000000004043 ENSMUSG000000027164 ENSMUSG000000007613 ENSMUSG000000021936 ENSMUSG00000028859 ENSMUSG000000043004 ENSMUSG000000052889
Human Diseases	Cancers: Overview	Pathways in cancer	mmu05200	30	398	0.000167946	ENSMUSG000000059970 ENSMUSG000000031309 ENSMUSG000000022523 ENSMUSG000000068798 ENSMUSG000000023050 ENSMUSG0000057967 ENSMUSG000000024235 ENSMUSG000000023034 ENSMUSG000000015968 ENSMUSG000000004113 ENSMUSG000000015312 ENSMUSG000000024383 ENSMUSG000000021936 ENSMUSG000000038387 ENSMUSG000000033220 ENSMUSG000000027164 ENSMUSG00000007613 ENSMUSG000000022329 ENSMUSG000000018932 ENSMUSG000000020882 ENSMUSG000000052889 ENSMUSG000000026072
Environmental Information Processing	Signal transduction	MAPK signaling pathway	mmu04010	22	254	0.000207359	ENSMUSG000000040329 ENSMUSG000000103735 ENSMUSG00000002
Environmental	Signal	PI3K-Akt	mmu0	26	350	0.00054	

Information Processing	transduction	signaling pathway	4151			1232	2523 ENSMUSG00000025017 ENSMUSG00000028518 ENSMUSG0000023034 ENSMUSG00000022309 ENSMUSG00000027009 ENSMUSG00000045613 ENSMUSG00000057967 ENSMUSG00000020048 ENSMUSG00000019966 ENSMUSG00000094694 ENSMUSG00000038668 ENSMUSG00000025915 ENSMUSG00000079465 ENSMUSG0000063594 ENSMUSG00000003865 ENSMUSG00000039005 ENSMUSG00000006235 ENSMUSG00000021270 ENSMUSG00000023439 ENSMUSG00000053007 ENSMUSG00000027995 ENSMUSG00000028859 ENSMUSG00000043004
Human Diseases	Infectious diseases: Bacterial	Pertussis	mmu05133	10	74	0.000550563	ENSMUSG00000025888 ENSMUSG00000000290 ENSMUSG00000024164 ENSMUSG00000027164 ENSMUSG00000062929 ENSMUSG0000026874 ENSMUSG00000036887 ENSMUSG00000021936 ENSMUSG00000036896 ENSMUSG00000039005
Organismal Systems	Immune system	Fc gamma R-mediated phagocytosis	mmu04666	11	90	0.000638949	ENSMUSG00000029684 ENSMUSG00000057342 ENSMUSG00000033220 ENSMUSG00000026656 ENSMUSG00000034116 ENSMUSG0000003283 ENSMUSG00000094694 ENSMUSG00000062929 ENSMUSG00000052889 ENSMUSG00000020143 ENSMUSG00000026395
Organismal Systems	Immune system	Natural killer cell mediated cytotoxicity	mmu04650	13	121	0.000658047	ENSMUSG00000004709 ENSMUSG00000030830 ENSMUSG00000034116 ENSMUSG00000000290 ENSMUSG00000004266 ENSMUSG0000059089 ENSMUSG00000015355 ENSMUSG00000015437 ENSMUSG00000033220 ENSMUSG00000030579 ENSMUSG00000039304 ENSMUSG00000094694 ENSMUSG00000052889
Environmental Information Processing	Signal transduction	Hippo signaling pathway	mmu04390	15	154	0.000675907	ENSMUSG00000020782 ENSMUSG00000007613 ENSMUSG00000067336 ENSMUSG00000037411 ENSMUSG00000000290 ENSMUSG0000014956 ENSMUSG00000015957 ENSMUSG00000021796 ENSMUSG00000020644 ENSMUSG00000020135 ENSMUSG00000036904 ENSMUSG00000022568 ENSMUSG00000006262 ENSMUSG00000022329 ENSMUSG00000021112
Human Diseases	Cancers: Overview	Proteoglycans in cancer	mmu05205	18	208	0.00075847	ENSMUSG00000036446 ENSMUSG00000038387 ENSMUSG00000035273 ENSMUSG00000103735 ENSMUSG00000004266 ENSMUSG0000020592 ENSMUSG00000027995 ENSMUSG00000027646 ENSMUSG00000000000

							SG00000062209 ENSMUSG00000014956 ENSMUSG00000015957 ENSMUSG00000022516 ENSMUSG00000024975 ENSMUSG00000022831 ENSMUSG00000019907 ENSMUSG00000036904 ENSMUSG00000052889 ENSMUSG00000039005
Organismal Systems	Immune system	Cytosolic DNA-sensing pathway	mmu04623	9	64	0.000796977	ENSMUSG00000025888 ENSMUSG00000027514 ENSMUSG00000027427 ENSMUSG00000035834 ENSMUSG00000042349 ENSMUSG0000037523 ENSMUSG00000030595 ENSMUSG00000037860 ENSMUSG00000024810
Human Diseases	Endocrine and metabolic diseases	Non-alcoholic fatty liver disease (NAFLD)	mmu04932	15	157	0.000810669	ENSMUSG00000079941 ENSMUSG00000025651 ENSMUSG00000020163 ENSMUSG00000057722 ENSMUSG00000084093 ENSMUSG0000006542 ENSMUSG00000025204 ENSMUSG00000051811 ENSMUSG00000061518 ENSMUSG00000005373 ENSMUSG00000074218 ENSMUSG00000044894 ENSMUSG00000102070 ENSMUSG00000021936 ENSMUSG00000028518
Metabolism	Global and overview maps	Fatty acid metabolism	mmu01212	8	52	0.000914845	ENSMUSG00000027195 ENSMUSG00000010651 ENSMUSG00000031278 ENSMUSG00000029545 ENSMUSG00000021364 ENSMUSG0000022853 ENSMUSG00000050195 ENSMUSG00000020333
Human Diseases	Neurodegenerative diseases	Alzheimer's disease	mmu05010	16	177	0.000953045	ENSMUSG00000079941 ENSMUSG00000025651 ENSMUSG00000020163 ENSMUSG00000078592 ENSMUSG00000084093 ENSMUSG000015968 ENSMUSG00000078636 ENSMUSG00000025204 ENSMUSG00000051811 ENSMUSG00000061518 ENSMUSG00000074218 ENSMUSG00000016252 ENSMUSG00000102070 ENSMUSG00000031878 ENSMUSG00000064356 ENSMUSG00000044894
Human Diseases	Endocrine and metabolic diseases	Insulin resistance	mmu04931	12	111	0.000995055	ENSMUSG00000003865 ENSMUSG00000005373 ENSMUSG00000031808 ENSMUSG00000027359 ENSMUSG00000006542 ENSMUSG0000014956 ENSMUSG00000031309 ENSMUSG00000028518 ENSMUSG00000053007 ENSMUSG00000021936 ENSMUSG00000029167 ENSMUSG00000052889
Environmental Information Processing	Signal transduction	Jak-STAT signaling pathway	mmu04630	15	161	0.001025216	ENSMUSG00000020027 ENSMUSG00000032578 ENSMUSG00000057722 ENSMUSG00000006235 ENSMUSG00000004266 ENSMUSG0000004043 ENSMUSG00000024539 ENSMUSG00000017057 ENSMUSG00000000000

							SG00000002325 ENSMUSG00000040329 ENSMUSG00000050222 ENSMUSG00000026104 ENSMUSG00000071713 ENSMUSG00000028859 ENSMUSG00000071714
Organismal Systems	Circulatory system	Vascular smooth muscle contraction	mmu04270	13	128	0.001059447	ENSMUSG00000059588 ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG00000015968 ENSMUSG00000019907 ENSMUSG0000014956 ENSMUSG00000044951 ENSMUSG00000052920 ENSMUSG00000041202 ENSMUSG00000027335 ENSMUSG00000027523 ENSMUSG00000037166 ENSMUSG00000052889
Environmental Information Processing	Signal transduction	Calcium signaling pathway	mmu04020	16	182	0.001247758	ENSMUSG00000062209 ENSMUSG00000028036 ENSMUSG00000054640 ENSMUSG00000004347 ENSMUSG00000057342 ENSMUSG0000053004 ENSMUSG00000045613 ENSMUSG00000094694 ENSMUSG00000027296 ENSMUSG00000015968 ENSMUSG00000027335 ENSMUSG00000044951 ENSMUSG00000027523 ENSMUSG00000004113 ENSMUSG00000052889 ENSMUSG00000107747
Cellular Processes	Transport and catabolism	Endocytosis	mmu04144	22	294	0.001275698	ENSMUSG00000067235 ENSMUSG00000031488 ENSMUSG00000059970 ENSMUSG00000027423 ENSMUSG00000040990 ENSMUSG0000112639 ENSMUSG00000030465 ENSMUSG00000020817 ENSMUSG00000007613 ENSMUSG00000027646 ENSMUSG00000062209 ENSMUSG00000029684 ENSMUSG00000055413 ENSMUSG00000022797 ENSMUSG00000036499 ENSMUSG00000005656 ENSMUSG0000023353 ENSMUSG00000027164 ENSMUSG00000020078 ENSMUSG00000049076 ENSMUSG00000010080 ENSMUSG00000015733
Organismal Systems	Immune system	RIG-I-like receptor signaling pathway	mmu04622	9	69	0.001288109	ENSMUSG00000032109 ENSMUSG00000042349 ENSMUSG00000064289 ENSMUSG00000037523 ENSMUSG00000027164 ENSMUSG0000030595 ENSMUSG00000021936 ENSMUSG00000026896 ENSMUSG00000039285
Metabolism	Energy metabolism	Sulfur metabolism	mmu00920	4	11	0.001330624	ENSMUSG00000064254 ENSMUSG00000049858 ENSMUSG00000071711 ENSMUSG00000044986
Human Diseases	Cardiovascular diseases	Hypertrophic cardiomyopathy	mmu05410	10	84	0.001330869	ENSMUSG00000053093 ENSMUSG00000103735 ENSMUSG00000027009 ENSMUSG00000006542 ENSMUSG00000020354 ENSMUSG0000001508 ENSMUSG00000028518 ENSMUSG00000015968 ENSMUSG00000000000

		athy (HCM)					SG00000054640 ENSMUSG00000020882
Metabolism	Amino acid metabolism	Arginine biosynthesis	mmu00220	5	20	0.001341055	ENSMUSG00000025991 ENSMUSG00000022546 ENSMUSG000000019987 ENSMUSG000000023262 ENSMUSG000000031173 ENSMUSG000000060981 ENSMUSG000000096010 ENSMUSG000000022181 ENSMUSG000000024164 ENSMUSG000000018199 ENSMUSG00000059089 ENSMUSG000000006457 ENSMUSG000000016559 ENSMUSG000000026874 ENSMUSG000000061482 ENSMUSG000000094694 ENSMUSG000000036887 ENSMUSG000000049932 ENSMUSG000000036896 ENSMUSG000000074064 ENSMUSG000000022853 ENSMUSG000000057880 ENSMUSG000000032263 ENSMUSG000000032527 ENSMUSG000000060376 ENSMUSG000000025991 ENSMUSG000000022546 ENSMUSG000000023070 ENSMUSG000000078592 ENSMUSG000000029545 ENSMUSG00000078636 ENSMUSG000000026005 ENSMUSG000000024892 ENSMUSG000000022853 ENSMUSG000000021913 ENSMUSG000000032527 ENSMUSG000000011752 ENSMUSG000000026824 ENSMUSG000000043004 ENSMUSG000000023439 ENSMUSG000000053007 ENSMUSG000000020182 ENSMUSG00000014956 ENSMUSG000000015968 ENSMUSG000000027523 ENSMUSG000000055116 ENSMUSG000000021936 ENSMUSG000000004113 ENSMUSG000000052889 ENSMUSG000000063594 ENSMUSG000000040329 ENSMUSG000000006235 ENSMUSG000000027009 ENSMUSG000000004609 ENSMUSG000000026399 ENSMUSG00000022797 ENSMUSG000000094694 ENSMUSG000000028859 ENSMUSG000000026072 ENSMUSG000000019966 ENSMUSG000000036887 ENSMUSG000000024164 ENSMUSG000000027995 ENSMUSG000000027164 ENSMUSG000000007613 ENSMUSG00000027523 ENSMUSG000000035352 ENSMUSG000000021936 ENSMUSG000000037411 ENSMUSG000000036896 ENSMUSG000000039005
Human Diseases	Immune diseases	Systemic lupus erythematosus	mmu05322	14	149	0.001379975	
Metabolism	Carbohydrate metabolism	Propanoate metabolism	mmu00640	6	31	0.001418154	
Metabolism	Global and overview maps	Carbon metabolism	mmu01200	12	118	0.001608018	
Organismal Systems	Nervous system	Dopaminergic synapse	mmu04728	13	135	0.001647553	
Organismal Systems	Immune system	Hematopoietic cell lineage	mmu04640	10	87	0.001690487	
Human Diseases	Infectious diseases: Parasitic	Chagas disease (American trypanosomiasis)	mmu05142	11	104	0.001865127	

Metabolism	Metabolism of other amino acids	beta-Alanine metabolism NOD-like receptor signaling pathway	mmu00410	6	33	0.001879043	ENSMUSG00000074064 ENSMUSG00000024885 ENSMUSG00000022853 ENSMUSG00000057880 ENSMUSG00000029455 ENSMUSG0000006442
Organismal Systems	Immune system	Arrhythmogenic right ventricular cardiomyopathy (ARVC)	mmu04621	8	59	0.001894237	ENSMUSG00000025888 ENSMUSG00000055994 ENSMUSG00000021270 ENSMUSG00000027164 ENSMUSG00000020048 ENSMUSG0000030595 ENSMUSG00000035352 ENSMUSG00000021936
Human Diseases	Cardiovascular diseases	Apoptosis	mmu05412	9	74	0.001998248	ENSMUSG000000103735 ENSMUSG00000027009 ENSMUSG00000020354 ENSMUSG00000001552 ENSMUSG00000001508 ENSMUSG0000015968 ENSMUSG00000006457 ENSMUSG00000054640 ENSMUSG00000020882
Cellular Processes	Cell growth and death	Arachidonic acid metabolism	mmu04210	13	139	0.002090405	ENSMUSG00000071713 ENSMUSG00000025860 ENSMUSG00000015437 ENSMUSG00000020486 ENSMUSG00000015312 ENSMUSG0000071714 ENSMUSG00000038642 ENSMUSG00000021936 ENSMUSG00000026202 ENSMUSG00000083282 ENSMUSG00000015337 ENSMUSG00000030560 ENSMUSG00000039304
Metabolism	Lipid metabolism	Dilated cardiomyopathy	mmu00590	10	90	0.002124956	ENSMUSG00000071072 ENSMUSG00000083816 ENSMUSG00000003053 ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG0000018924 ENSMUSG00000028597 ENSMUSG00000041202 ENSMUSG00000050737 ENSMUSG00000022947
Human Diseases	Cardiovascular diseases	Oxytocin signaling pathway	mmu05414	10	90	0.002124956	ENSMUSG00000053093 ENSMUSG00000103735 ENSMUSG00000027009 ENSMUSG00000015968 ENSMUSG00000020354 ENSMUSG0000001508 ENSMUSG00000094694 ENSMUSG00000054640 ENSMUSG00000027523 ENSMUSG00000020882
Organismal Systems	Endocrine system		mmu04921	14	158	0.002285495	ENSMUSG00000026824 ENSMUSG00000083816 ENSMUSG00000039145 ENSMUSG00000006542 ENSMUSG00000027646 ENSMUSG0000009292 ENSMUSG00000014956 ENSMUSG00000019907 ENSMUSG00000028518 ENSMUSG00000044951 ENSMUSG00000027523 ENSMUSG00000020882 ENSMUSG00000015968 ENSMUSG00000052889

Environmental Information Processing	Signal transduction	Rap1 signaling pathway Cysteine and methionine metabolism	mmu04015	17	215	0.002551704	ENSMUSG00000022309 ENSMUSG00000038387 ENSMUSG00000000290 ENSMUSG00000000600 ENSMUSG00000030830 ENSMUSG0000057967 ENSMUSG00000026786 ENSMUSG00000038668 ENSMUSG00000027646 ENSMUSG00000033220 ENSMUSG00000022523 ENSMUSG00000037533 ENSMUSG00000068798 ENSMUSG00000019966 ENSMUSG00000027523 ENSMUSG00000018932 ENSMUSG0000052889
			mmu00270	7	49	0.002759149	ENSMUSG00000001670 ENSMUSG00000028124 ENSMUSG00000037798 ENSMUSG00000030826 ENSMUSG00000006442 ENSMUSG0000071711 ENSMUSG00000044986
	Lipid metabolism	Fatty acid degradation	mmu00071	7	49	0.002759149	ENSMUSG00000010651 ENSMUSG00000031278 ENSMUSG00000003809 ENSMUSG00000029545 ENSMUSG00000022853 ENSMUSG0000029455 ENSMUSG00000020333
			mmu04066	11	110	0.002788061	ENSMUSG00000022309 ENSMUSG00000078592 ENSMUSG00000037411 ENSMUSG00000078636 ENSMUSG00000015340 ENSMUSG0000021367 ENSMUSG00000033688 ENSMUSG00000022797 ENSMUSG00000039005 ENSMUSG00000052889 ENSMUSG00000026773 ENSMUSG00000094694 ENSMUSG00000002111 ENSMUSG00000055435 ENSMUSG00000035356 ENSMUSG00000028926 ENSMUSG0000015437 ENSMUSG00000001552 ENSMUSG00000016559 ENSMUSG00000037369 ENSMUSG00000056501 ENSMUSG00000020644 ENSMUSG00000031613 ENSMUSG00000006586 ENSMUSG00000025142 ENSMUSG00000037876
Human Diseases	Cancers: Overview	HIF-1 signaling pathway Transcriptional misregulation in cancer	mmu05202	15	180	0.002809436	ENSMUSG00000079941 ENSMUSG00000025651 ENSMUSG00000020163 ENSMUSG00000084093 ENSMUSG00000053007 ENSMUSG0000034706 ENSMUSG00000025204 ENSMUSG00000016252 ENSMUSG00000061518 ENSMUSG00000074218 ENSMUSG00000051811 ENSMUSG00000102070 ENSMUSG00000030922 ENSMUSG00000029167 ENSMUSG00000064356 ENSMUSG00000044894
	Neurodegenerative diseases	Huntington's disease	mmu05016	16	199	0.002884318	ENSMUSG00000030830 ENSMUSG00000069917 ENSMUSG00000000000
	Infectious	Malaria	mmu0	7	50	0.00305	

Diseases	diseases: Parasitic		5144			4983	0290 ENSMUSG00000027995 ENSMUSG00000035352 ENSMUSG0000020592 ENSMUSG00000039005 ENSMUSG00000042988 ENSMUSG00000040260 ENSMUSG00000015957 ENSMUSG00000033220 ENSMUSG00000027996 ENSMUSG0000031548 ENSMUSG00000081219 ENSMUSG00000020218 ENSMUSG000000020135 ENSMUSG00000014226 ENSMUSG00000021936 ENSMUSG00000036904 ENSMUSG00000052889 ENSMUSG00000067235 ENSMUSG00000030830 ENSMUSG00000053093 ENSMUSG00000000290 ENSMUSG00000033220 ENSMUSG0000020354 ENSMUSG00000026399 ENSMUSG00000001508 ENSMUSG00000094694 ENSMUSG00000055413
Environmental Information Processing	Signal transduction	Wnt signaling pathway	mmu0 4310	13	146	0.00309 9006	
Human Diseases	Cardiovascular diseases	Viral myocarditis Glycosamin oglycan biosynthesis and - keratan sulfate	mmu0 5416	10	96	0.00326 231	
Metabolism	Carbohydrate metabolism	Butanoate metabolism	mmu0 0533	4	15	0.00339 1464	ENSMUSG00000028541 ENSMUSG00000031749 ENSMUSG00000028413 ENSMUSG00000047379
Metabolism			mmu0 0650	5	27	0.00417 8751	ENSMUSG00000046598 ENSMUSG00000057880 ENSMUSG00000029545 ENSMUSG00000022853 ENSMUSG00000029482 ENSMUSG00000022821 ENSMUSG00000001670 ENSMUSG00000030630 ENSMUSG00000024885 ENSMUSG00000020182 ENSMUSG0000021033
Metabolism	Amino acid metabolism	Tyrosine metabolism	mmu0 0350	6	40	0.00441 4285	
Organismal Systems	Digestive system	Fat digestion and absorption	mmu0 4975	6	40	0.00441 4285	ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG00000041202 ENSMUSG00000020609 ENSMUSG00000032083 ENSMUSG0000030747 ENSMUSG00000074088 ENSMUSG00000010608 ENSMUSG00000031134 ENSMUSG00000059970 ENSMUSG00000039630 ENSMUSG0000061136 ENSMUSG00000008333 ENSMUSG00000032407 ENSMUSG000000037475 ENSMUSG00000025024 ENSMUSG00000031157 ENSMUSG00000001158
Genetic Information Processing Organismal	Transcription Immune	Spliceosome Toll-like	mmu0 3040 mmu0	12 10	135 101	0.00444 4676 0.00454	ENSMUSG00000026104 ENSMUSG00000027995 ENSMUSG0000004

Systems	system	receptor signaling pathway	4620			0471	4827 ENSMUSG00000027164 ENSMUSG00000024235 ENSMUSG0000044583 ENSMUSG00000042349 ENSMUSG00000018932 ENSMUSG000000021936 ENSMUSG00000039005
		Biosynthesis of					
Metabolism	Lipid metabolism	unsaturated fatty acids	mmu01040	5	28	0.004789571	ENSMUSG00000050195 ENSMUSG00000021364 ENSMUSG000000072949 ENSMUSG00000027195 ENSMUSG00000010651 ENSMUSG00000079339 ENSMUSG00000032661 ENSMUSG000000041378 ENSMUSG00000002325 ENSMUSG00000024079 ENSMUSG0000042349 ENSMUSG00000037523 ENSMUSG00000027164 ENSMUSG00000022336 ENSMUSG00000026104 ENSMUSG00000021936 ENSMUSG00000001739 ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG00000001865 ENSMUSG00000032839 ENSMUSG00000019066 ENSMUSG0000021999 ENSMUSG00000041202 ENSMUSG00000027523 ENSMUSG00000068798 ENSMUSG00000052889
Human Diseases	Infectious diseases: Viral	Hepatitis C	mmu05160	12	137	0.00494911	
Organismal Systems	Digestive system	Pancreatic secretion	mmu04972	10	103	0.005150266	
		AGE-RAGE signaling pathway in diabetic complications					ENSMUSG00000007613 ENSMUSG00000004043 ENSMUSG00000037411 ENSMUSG00000015340 ENSMUSG00000021367 ENSMUSG0000026104 ENSMUSG00000035352 ENSMUSG00000021936 ENSMUSG00000052889 ENSMUSG00000079465
Human Diseases	Endocrine and metabolic diseases	Leukocyte transendothelial migration	mmu04933	10	103	0.005150266	ENSMUSG00000041378 ENSMUSG00000030830 ENSMUSG00000034116 ENSMUSG00000000290 ENSMUSG00000027009 ENSMUSG0000015340 ENSMUSG00000033220 ENSMUSG00000068798 ENSMUSG00000006457 ENSMUSG00000052889 ENSMUSG00000001739
Organismal Systems	Immune system		mmu04670	11	121	0.005412665	ENSMUSG00000022292 ENSMUSG00000028124 ENSMUSG00000028597 ENSMUSG00000080845 ENSMUSG00000006442 ENSMUSG0000020649 ENSMUSG00000022562
Metabolism	Metabolism of other amino acids	Glutathione metabolism	mmu00480	7	57	0.005855194	
Organismal Systems	Immune system	Platelet activation	mmu04611	11	123	0.006050675	ENSMUSG00000019907 ENSMUSG00000033860 ENSMUSG00000026786 ENSMUSG00000027646 ENSMUSG00000014956 ENSMUSG00

							000028001 ENSMUSG00000052920 ENSMUSG00000068798 ENSMUSG00000044951 ENSMUSG00000033831 ENSMUSG00000027523 ENSMUSG00000041378 ENSMUSG00000038387 ENSMUSG00000030739 ENSMUSG00000027646 ENSMUSG00000053093 ENSMUSG00000074652 ENSMUSG00000006457 ENSMUSG00000022831 ENSMUSG00000052889 ENSMUSG00000020782 ENSMUSG00000001739 ENSMUSG00000021112 ENSMUSG00000043004 ENSMUSG00000023439 ENSMUSG00000023169 ENSMUSG00000027646 ENSMUSG00000057880 ENSMUSG0000015968 ENSMUSG00000004113 ENSMUSG00000052889 ENSMUSG00000063594 ENSMUSG00000057722 ENSMUSG00000028518 ENSMUSG00000031278 ENSMUSG00000006542 ENSMUSG00000030595 ENSMUSG0000020333 ENSMUSG00000021936 ENSMUSG00000029167 ENSMUSG00000025888 ENSMUSG00000000290 ENSMUSG00000059970 ENSMUSG00000027995 ENSMUSG00000024164 ENSMUSG0000078566 ENSMUSG00000039005 ENSMUSG00000027999 ENSMUSG00000052160 ENSMUSG00000041193 ENSMUSG00000040774 ENSMUSG00000041202 ENSMUSG0000038173 ENSMUSG00000055994 ENSMUSG00000055435 ENSMUSG00000027995 ENSMUSG00000032238 ENSMUSG00000026104 ENSMUSG000001444 ENSMUSG00000039005 ENSMUSG00000055116 ENSMUSG00000006542 ENSMUSG00000032238 ENSMUSG00000028518 ENSMUSG00000030103 ENSMUSG00000003053 ENSMUSG00000027523 ENSMUSG00000053004 ENSMUSG00000032860 ENSMUSG00000027646 ENSMUSG0000033007 ENSMUSG00000021936 ENSMUSG00000018932 ENSMUSG00000014956 ENSMUSG00000052889 ENSMUSG00000026072
Cellular Processes	Cellular community - eukaryotes	Tight junction	mmu04530	12	141	0.006094513	
Organismal Systems	Nervous system	GABAergic synapse	mmu04727	9	89	0.006112111	
Organismal Systems	Endocrine system	Adipocytokine signaling pathway	mmu04920	8	73	0.006176842	
Human Diseases	Infectious diseases: Bacterial	Legionellosis	mmu05134	7	58	0.006374124	
Metabolism	Lipid metabolism	Ether lipid metabolism	mmu05065	6	44	0.006681141	
Human Diseases	Immune diseases	Inflammatory bowel disease (IBD)	mmu05321	7	59	0.006926512	
Organismal Systems	Environmental adaptation	Circadian rhythm	mmu04710	5	31	0.006998729	
Organismal Systems	Sensory system	Inflammatory mediator regulation of TRP channels	mmu04750	11	126	0.007116783	

Genetic Information Processing	Folding, sorting and degradation	Ubiquitin mediated proteolysis	mmu04120	12	145	0.007440157	ENSMUSG00000020802 ENSMUSG00000025860 ENSMUSG00000095134 ENSMUSG00000025939 ENSMUSG00000030061 ENSMUSG00000020687 ENSMUSG00000024807 ENSMUSG00000112639 ENSMUSG000000027164 ENSMUSG00000021728 ENSMUSG00000025326 ENSMUSG000000070923
							ENSMUSG00000004043 ENSMUSG00000027995 ENSMUSG00000053007 ENSMUSG00000027646 ENSMUSG00000042349 ENSMUSG0000007613 ENSMUSG00000037523 ENSMUSG00000026104 ENSMUSG000000021936 ENSMUSG00000039005 ENSMUSG00000052889 ENSMUSG00000026896
							ENSMUSG00000026824 ENSMUSG00000043004 ENSMUSG00000023439 ENSMUSG00000004347 ENSMUSG00000069094 ENSMUSG0000027523 ENSMUSG00000004113 ENSMUSG00000052889 ENSMUSG000000063594
Human Diseases	Infectious diseases: Viral	Hepatitis B	mmu05161	12	146	0.007810485	ENSMUSG00000025993 ENSMUSG00000033688 ENSMUSG00000020829 ENSMUSG00000054640 ENSMUSG00000027365 ENSMUSG0000031765
Human Diseases	Substance dependence	Morphine addiction	mmu05032	9	93	0.007898386	ENSMUSG00000020620 ENSMUSG00000050296 ENSMUSG00000029408 ENSMUSG00000026944 ENSMUSG00000029802 ENSMUSG0000031333
Organismal Systems	Digestive system	Mineral absorption	mmu04978	6	46	0.00808598	ENSMUSG00000049932 ENSMUSG00000060981 ENSMUSG00000023439 ENSMUSG00000096010 ENSMUSG00000027499 ENSMUSG0000053007 ENSMUSG00000020182 ENSMUSG00000034245 ENSMUSG00000014956 ENSMUSG00000016559 ENSMUSG00000061482 ENSMUSG00000004698 ENSMUSG00000027523 ENSMUSG000000043004 ENSMUSG00000063594
Environmental Information Processing	Membrane transport	ABC transporters	mmu02010	6	46	0.00808598	ENSMUSG00000000290 ENSMUSG00000027995 ENSMUSG00000026072 ENSMUSG00000094694 ENSMUSG00000006457 ENSMUSG0000027523 ENSMUSG00000019987 ENSMUSG00000052889 ENSMUSG00000079465 ENSMUSG00000039005
Human Diseases	Substance dependence	Alcoholism	mmu05034	15	204	0.008111404	ENSMUSG00000003865 ENSMUSG00000074064 ENSMUSG0000005
Human Diseases	Infectious diseases: Parasitic	Amoebiasis	mmu05146	10	111	0.008254539	
Environmental	Signal	AMPK	mmu0	11	129	0.00832	

Information Processing	transduction	signaling pathway	4152			4082	7722 ENSMUSG00000053007 ENSMUSG00000006542 ENSMUSG0000017950 ENSMUSG00000028518 ENSMUSG00000101904 ENSMUSG000000050195 ENSMUSG00000029167 ENSMUSG00000026773 ENSMUSG00000025495 ENSMUSG00000027999 ENSMUSG00000041193 ENSMUSG00000004270 ENSMUSG00000052160 ENSMUSG0000040774 ENSMUSG00000041202 ENSMUSG00000024978 ENSMUSG00000036833
Metabolism	Lipid metabolism	Glycerophospholipid metabolism	mmu00564	9	94	0.008401365	ENSMUSG00000067235 ENSMUSG00000060981 ENSMUSG00000096010 ENSMUSG00000024164 ENSMUSG00000002325 ENSMUSG0000004043 ENSMUSG00000053007 ENSMUSG00000024079 ENSMUSG00000027646 ENSMUSG00000034245 ENSMUSG00000006457 ENSMUSG00000055413 ENSMUSG00000022568 ENSMUSG00000004698 ENSMUSG00000025326 ENSMUSG00000001524 ENSMUSG00000061482
Human Diseases	Cancers: Overview	Viral carcinogenesis	mmu005203	17	245	0.008493489	ENSMUSG00000083816 ENSMUSG00000053007 ENSMUSG00000055994 ENSMUSG00000021367 ENSMUSG00000024235 ENSMUSG0000056501 ENSMUSG00000021936 ENSMUSG00000035352 ENSMUSG00000018932 ENSMUSG00000022789
Environmental Information Processing	Signal transduction	TNF signaling pathway	mmu004668	10	112	0.008726142	ENSMUSG00000026824 ENSMUSG00000043004 ENSMUSG00000023439 ENSMUSG00000053007 ENSMUSG00000045613 ENSMUSG0000028631 ENSMUSG00000015968 ENSMUSG00000004113 ENSMUSG00000052889 ENSMUSG00000063594
Organismal Systems	Nervous system	Cholinergic synapse	mmu004725	10	113	0.009218118	ENSMUSG00000025860 ENSMUSG00000059970 ENSMUSG00000027995 ENSMUSG00000026104 ENSMUSG00000046879 ENSMUSG0000027164 ENSMUSG00000030595 ENSMUSG00000018932 ENSMUSG00000021936 ENSMUSG00000039005
Human Diseases	Infectious diseases: Parasitic	Toxoplasmosis	mmu005145	10	113	0.009218118	ENSMUSG00000026824 ENSMUSG00000023439 ENSMUSG00000023169 ENSMUSG00000032839 ENSMUSG00000007617 ENSMUSG0000015968 ENSMUSG00000027523 ENSMUSG00000043004 ENSMUSG00000052889 ENSMUSG00000063594
Organismal Systems	Nervous system	Glutamatergic synapse	mmu004724	10	115	0.010265383	ENSMUSG00000026824 ENSMUSG00000023439 ENSMUSG0000004
Organismal	Environmental	Circadian	mmu0	9	98	0.01065	

Systems	adaptation	entrainment	4713			9632	9892 ENSMUSG00000052920 ENSMUSG00000015968 ENSMUSG0000027523 ENSMUSG00000043004 ENSMUSG00000052889 ENSMUSG00000063594
Human Diseases	Infectious diseases: Viral	Epstein-Barr virus infection	mmu05169	16	232	0.010998186	ENSMUSG00000067235 ENSMUSG00000030830 ENSMUSG00000055413 ENSMUSG00000002111 ENSMUSG00000027427 ENSMUSG0000035834 ENSMUSG00000024079 ENSMUSG00000028874 ENSMUSG00000027164 ENSMUSG00000051457 ENSMUSG00000059970 ENSMUSG00000112639 ENSMUSG00000094694 ENSMUSG00000030595 ENSMUSG00000018932 ENSMUSG00000021936
Metabolism	Carbohydrate metabolism	Pentose and glucuronate interconversions	mmu00040	5	36	0.012112459	ENSMUSG00000039450 ENSMUSG00000001891 ENSMUSG00000029201 ENSMUSG00000029455 ENSMUSG00000026005
Organismal Systems	Development	Axon guidance	mmu04360	13	176	0.012699041	ENSMUSG00000022231 ENSMUSG00000038387 ENSMUSG00000026121 ENSMUSG00000021451 ENSMUSG00000032839 ENSMUSG0000067336 ENSMUSG00000027646 ENSMUSG00000033220 ENSMUSG00000022883 ENSMUSG00000028780 ENSMUSG00000062929 ENSMUSG00000038777 ENSMUSG00000030084
Environmental Information Processing	Signaling molecules and interaction	Cell adhesion molecules (CAMs)	mmu04514	13	176	0.012699041	ENSMUSG00000067235 ENSMUSG00000030830 ENSMUSG00000000290 ENSMUSG00000027009 ENSMUSG00000027322 ENSMUSG0000051457 ENSMUSG00000062300 ENSMUSG00000041378 ENSMUSG00000055413 ENSMUSG00000000305 ENSMUSG00000020592 ENSMUSG00000001739 ENSMUSG00000026395
Human Diseases	Infectious diseases: Parasitic	African trypanosomiasis	mmu05143	5	37	0.013374683	ENSMUSG00000032083 ENSMUSG00000052889 ENSMUSG00000004929 ENSMUSG00000069917 ENSMUSG00000094694
Organismal Systems Cellular	Nervous system Cellular	Retrograde endocannabinoid signaling Gap	mmu04723	9	103	0.014088682	ENSMUSG00000026824 ENSMUSG00000083816 ENSMUSG00000043004 ENSMUSG00000023439 ENSMUSG00000015968 ENSMUSG0000021936 ENSMUSG00000004113 ENSMUSG00000052889 ENSMUSG00000063594
			mmu0	8	86	0.01460	ENSMUSG00000024383 ENSMUSG00000027646 ENSMUSG0000005

Processes	community - eukaryotes	junction	4540			1367	2920 ENSMUSG00000038668 ENSMUSG00000058672 ENSMUSG0000027523 ENSMUSG00000026202 ENSMUSG00000052889
Metabolism	Amino acid metabolism	Lysine degradation	mmu00310	6	53	0.014673966	2853 ENSMUSG00000029455 ENSMUSG00000021913 ENSMUSG0000034807
Metabolism	Lipid metabolism	Steroid hormone biosynthesis	mmu00140	8	87	0.01548515	7195 ENSMUSG00000029233 ENSMUSG0000003053 ENSMUSG0000068086 ENSMUSG00000024087 ENSMUSG00000032315
Metabolism	Lipid metabolism	nic acid metabolism	mmu00592	4	25	0.015901727	ENSMUSG00000041193 ENSMUSG00000010651 ENSMUSG00000041202 ENSMUSG00000027999
Cellular Processes	Cellular community - eukaryotes	Focal adhesion Glycosphingolipid biosynthesis	mmu04510	14	203	0.01663498	ENSMUSG00000025860 ENSMUSG00000103735 ENSMUSG00000027009 ENSMUSG00000027646 ENSMUSG00000014956 ENSMUSG0000033220 ENSMUSG00000019907 ENSMUSG00000068798 ENSMUSG00000044951 ENSMUSG00000006457 ENSMUSG00000021936 ENSMUSG00000052889 ENSMUSG00000079465 ENSMUSG00000034116
Metabolism	Glycan biosynthesis and metabolism	- lacto and neolacto series	mmu00601	4	26	0.01786708	ENSMUSG00000028541 ENSMUSG00000047379 ENSMUSG00000028413 ENSMUSG00000055978
Metabolism	Amino acid metabolism	Histidine metabolism	mmu00340	4	26	0.01786708	ENSMUSG00000059422 ENSMUSG00000024885 ENSMUSG00000020182 ENSMUSG00000029455
Metabolism	Metabolism of cofactors and vitamins	Porphyrin and chlorophyll metabolism	mmu00860	5	41	0.019302921	ENSMUSG00000003617 ENSMUSG00000029575 ENSMUSG000000108628 ENSMUSG00000040466 ENSMUSG00000028393
Cellular Processes	Cellular community -	Adherens junction	mmu04520	7	74	0.020062656	ENSMUSG00000033220 ENSMUSG00000007613 ENSMUSG00000004266 ENSMUSG00000027646 ENSMUSG00000062300 ENSMUSG00

	eukaryotes						000006457 ENSMUSG00000029684
							ENSMUSG00000022309 ENSMUSG00000038387 ENSMUSG00000027999 ENSMUSG00000023439 ENSMUSG00000041193 ENSMUSG0000063594 ENSMUSG00000057967 ENSMUSG00000033220 ENSMUSG000000022523 ENSMUSG00000068798 ENSMUSG00000019966 ENSMUSG00000021936 ENSMUSG00000043004 ENSMUSG00000052889 ENSMUSG00000041202
Environmental Information Processing	Signal transduction	Ras signaling pathway	mmu04014	15	231	0.02137392	ENSMUSG00000028211 ENSMUSG00000007613 ENSMUSG00000067235 ENSMUSG00000030830 ENSMUSG00000038387 ENSMUSG0000015957 ENSMUSG00000004043 ENSMUSG00000002111 ENSMUSG00000020471 ENSMUSG00000020687 ENSMUSG00000020135 ENSMUSG00000055413 ENSMUSG00000000290 ENSMUSG00000063889 ENSMUSG00000021936 ENSMUSG00000036904 ENSMUSG0000026072 ENSMUSG00000025860
Human Diseases	Infectious diseases: Viral	HTLV-I infection	mmu05166	18	295	0.021421118	ENSMUSG00000039639 ENSMUSG00000053093 ENSMUSG00000053007 ENSMUSG00000015968 ENSMUSG00000014956 ENSMUSG0000027335 ENSMUSG00000054640 ENSMUSG00000063889 ENSMUSG00000027523 ENSMUSG00000020882 ENSMUSG00000034810
Organismal Systems	Circulatory system	cardiomyocytes	mmu04261	11	152	0.023551232	ENSMUSG00000006542 ENSMUSG00000078566 ENSMUSG00000007613 ENSMUSG00000007617 ENSMUSG00000028518 ENSMUSG0000055148 ENSMUSG00000021936 ENSMUSG00000025915 ENSMUSG00000015312 ENSMUSG00000039304
Environmental Information Processing	Signal transduction	FoxO signaling pathway	mmu04068	10	135	0.026299306	ENSMUSG00000038387 ENSMUSG00000033220 ENSMUSG00000053007 ENSMUSG00000015968 ENSMUSG00000045613 ENSMUSG0000014956 ENSMUSG00000051314 ENSMUSG00000019907 ENSMUSG00000068798 ENSMUSG00000027523 ENSMUSG00000021936 ENSMUSG00000020331 ENSMUSG00000034116
Environmental Information Processing	Signal transduction	cAMP signaling pathway	mmu04024	13	198	0.02850703	ENSMUSG00000022292 ENSMUSG00000004347 ENSMUSG00000029780 ENSMUSG00000032478 ENSMUSG00000035834 ENSMUSG0000058624 ENSMUSG00000069094 ENSMUSG00000027427 ENSMUSG00000020471 ENSMUSG00000015085 ENSMUSG00000003500 ENSMUSG00000000000
Metabolism	Nucleotide metabolism	Purine metabolism	mmu00230	12	179	0.030256949	

							NSMUSG00000020649
Metabolism	Carbohydrate metabolism	Galactose metabolism	mmu00052	4	32	0.032770349	ENSMUSG00000028541 ENSMUSG00000028413 ENSMUSG00000025579 ENSMUSG00000001891
Cellular Processes	Transport and catabolism	Peroxisome Glucagon	mmu04146	7	83	0.033324465	ENSMUSG00000010651 ENSMUSG00000031278 ENSMUSG00000027222 ENSMUSG00000022853 ENSMUSG00000074064 ENSMUSG00000020333 ENSMUSG00000027359
Organismal Systems	Endocrine system	signaling pathway	mmu04922	8	102	0.033754869	ENSMUSG00000003865 ENSMUSG00000053007 ENSMUSG00000006542 ENSMUSG00000020463 ENSMUSG00000028518 ENSMUSG00000027523 ENSMUSG00000011752 ENSMUSG00000029167
Human Diseases	Immune diseases	Rheumatoid arthritis	mmu05323	7	85	0.036910873	ENSMUSG00000030830 ENSMUSG00000000290 ENSMUSG00000027995 ENSMUSG00000094694 ENSMUSG00000035352 ENSMUSG00000022309 ENSMUSG00000039005
Environmental Information Processing	Signal transduction	NF-kappa B signaling pathway	mmu04064	8	104	0.0369748	ENSMUSG00000083816 ENSMUSG00000025860 ENSMUSG00000027164 ENSMUSG00000094694 ENSMUSG00000052889 ENSMUSG00000026072 ENSMUSG00000015312 ENSMUSG00000039005
Metabolism	Nucleotide metabolism	Pyrimidine metabolism	mmu00240	8	104	0.0369748	ENSMUSG00000022292 ENSMUSG00000029780 ENSMUSG00000032478 ENSMUSG00000035834 ENSMUSG00000042462 ENSMUSG00000027427 ENSMUSG00000020471 ENSMUSG00000020649
Cellular Processes	Transport and catabolism	Lysosome	mmu04142	9	124	0.037642429	ENSMUSG00000024480 ENSMUSG00000029408 ENSMUSG00000026944 ENSMUSG00000028581 ENSMUSG00000038642 ENSMUSG00000025579 ENSMUSG00000083282 ENSMUSG00000004567 ENSMUSG00000030560
Metabolism	Lipid metabolism	Linoleic acid metabolism	mmu00591	5	50	0.038296454	ENSMUSG00000018924 ENSMUSG00000041193 ENSMUSG00000003053 ENSMUSG00000041202 ENSMUSG00000027999
Human Diseases	Neurodegenerative diseases	Prion diseases	mmu05020	4	34	0.038961806	ENSMUSG00000036887 ENSMUSG00000026874 ENSMUSG00000036896 ENSMUSG00000022181
Human Diseases	Substance dependence	Amphetamine addiction	mmu05031	6	68	0.039587292	ENSMUSG00000053007 ENSMUSG00000020182 ENSMUSG00000014956 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00000052889
Metabolism	Global and overview maps	2-Oxocarboxylic acid	mmu01210	3	20	0.041554138	ENSMUSG00000022546 ENSMUSG00000023262 ENSMUSG00000030826

Organismal Systems	Endocrine system	metabolism					
		GnRH signaling pathway	mmu04912	7	88	0.042751432	ENSMUSG00000027523 ENSMUSG00000015968 ENSMUSG00000024383 ENSMUSG00000027646 ENSMUSG00000021936 ENSMUSG0000018932 ENSMUSG00000052889
Genetic Information Processing	Translation	RNA transport	mmu03013	11	170	0.045157208	ENSMUSG00000052825 ENSMUSG00000000838 ENSMUSG00000022336 ENSMUSG00000037475 ENSMUSG00000027236 ENSMUSG0000013736 ENSMUSG00000027680 ENSMUSG00000053453 ENSMUSG00000057561 ENSMUSG00000021282 ENSMUSG00000029145
		Renin-angiotensin system	mmu04614	4	36	0.04577466	ENSMUSG00000023845 ENSMUSG00000001865 ENSMUSG00000004929 ENSMUSG00000068037
Organismal Systems	Endocrine system	Prolactin signaling pathway	mmu04917	6	74	0.054343287	ENSMUSG00000020027 ENSMUSG00000032578 ENSMUSG00000004043 ENSMUSG00000027646 ENSMUSG00000026104 ENSMUSG0000021936
		Carbohydrate metabolism	mmu00620	4	39	0.057154571	ENSMUSG00000031958 ENSMUSG00000024892 ENSMUSG00000024158 ENSMUSG00000029455
Human Diseases	Cancers: Specific types	Acute myeloid leukemia	mmu05221	5	57	0.058923413	ENSMUSG00000004043 ENSMUSG00000031155 ENSMUSG00000006586 ENSMUSG00000001552 ENSMUSG00000002111
		Folding, sorting and degradation	mmu04122	2	10	0.060519635	ENSMUSG00000071711 ENSMUSG00000044986
Genetic Information Processing	Amino acid metabolism	Sulfur relay system	mmu04122	2	10	0.060519635	ENSMUSG00000071711 ENSMUSG00000044986
		Phenylalanine metabolism	mmu00360	3	24	0.062178788	ENSMUSG00000024885 ENSMUSG00000001670 ENSMUSG00000020182
Metabolism	Digestive system	Vitamin digestion	mmu04977	3	24	0.062178788	ENSMUSG00000032083 ENSMUSG00000020609 ENSMUSG00000020829
		and absorption	mmu04977	3	24	0.062178788	ENSMUSG00000032083 ENSMUSG00000020609 ENSMUSG00000020829
Organismal Systems	Endocrine system	Ovarian steroidogen	mmu04913	5	58	0.062299091	ENSMUSG00000026675 ENSMUSG00000027523 ENSMUSG00000032315 ENSMUSG00000024087 ENSMUSG00000083816

		esis					
Metabolism	Lipid metabolism	Glycerolipid metabolism	mmu00561	5	59	0.065781681	ENSMUSG00000025059 ENSMUSG00000025509 ENSMUSG00000024978 ENSMUSG00000029455 ENSMUSG00000030747
Organismal Systems	Endocrine system	Estrogen signaling pathway	mmu04915	7	98	0.066367242	ENSMUSG00000026824 ENSMUSG00000059970 ENSMUSG00000053007 ENSMUSG00000021270 ENSMUSG00000027646 ENSMUSG0000020048 ENSMUSG00000027523
Environmental Information Processing	Signal transduction	VEGF signaling pathway	mmu04370	5	60	0.069370761	ENSMUSG00000033220 ENSMUSG00000083816 ENSMUSG00000052889 ENSMUSG00000027646 ENSMUSG00000057342
Metabolism Genetic Information Processing	Metabolism of cofactors and vitamins	Ubiquinone and other terpenoid-quinone biosynthesis	mmu00130	2	11	0.069956132	ENSMUSG00000001670 ENSMUSG00000021235
Information Processing	Replication and repair	Nucleotide excision repair	mmu03420	4	44	0.079146468	ENSMUSG00000069089 ENSMUSG00000020471 ENSMUSG00000031347 ENSMUSG00000001524
Metabolism	Lipid metabolism	Fatty acid elongation	mmu00062	3	27	0.080188719	ENSMUSG00000021364 ENSMUSG00000072949 ENSMUSG00000027195
Metabolism Genetic Information Processing	Carbohydrate metabolism	Ascorbate and aldarate metabolism	mmu00053	3	27	0.080188719	ENSMUSG00000029201 ENSMUSG00000023070 ENSMUSG00000029455
Information Processing	Folding, sorting and degradation	RNA degradation	mmu03018	6	83	0.081960628	ENSMUSG00000034724 ENSMUSG00000027714 ENSMUSG00000027770 ENSMUSG00000000581 ENSMUSG00000033991 ENSMUSG0000036779
Human Diseases	Cancers: Specific types	Colorectal cancer	mmu05210	5	64	0.084779561	ENSMUSG00000033220 ENSMUSG00000021936 ENSMUSG00000020135 ENSMUSG00000040760 ENSMUSG00000007613
Metabolism	Glycan biosynthesis and metabolism	Mucin type O-Glycan biosynthesis	mmu00512	3	28	0.086639982	ENSMUSG00000031749 ENSMUSG00000042460 ENSMUSG00000038843

		Metabolism of xenobiotics by cytochrome P450	mmu0 0980	5	65	0.08889 0804	ENSMUSG00000028743 ENSMUSG00000024885 ENSMUSG0000003 2315 ENSMUSG00000024087 ENSMUSG00000022947
Metabolism Environmental Information Processing Genetic Information Processing	Xenobiotics biodegradation and metabolism Signal transduction Replication and repair	TGF-beta signaling pathway Non-homolo gous end-joining	mmu0 4350 mmu0 3450	6	85	0.08898 8566	ENSMUSG00000021796 ENSMUSG00000067336 ENSMUSG0000008 1219 ENSMUSG00000007613 ENSMUSG00000020644 ENSMUSG00 000037035
Organismal Systems	Endocrine system	Insulin secretion	mmu0 4911	6	86	0.09262 1894	ENSMUSG00000026648 ENSMUSG00000021615 ENSMUSG00000053007 ENSMUSG0000002908 ENSMUSG0000003 1840 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00 000052889
Organismal Systems	Endocrine system	Aldosterone synthesis and secretion	mmu0 4925	6	86	0.09262 1894	ENSMUSG00000053007 ENSMUSG00000039145 ENSMUSG0000002 3034 ENSMUSG00000015968 ENSMUSG00000027523 ENSMUSG00 000052889
Metabolism	Carbohydrate metabolism	Glycolysis / Gluconeoge nesis	mmu0 0010	5	66	0.09310 3666	ENSMUSG00000024885 ENSMUSG00000011752 ENSMUSG0000007 8636 ENSMUSG00000029455 ENSMUSG00000078592
Metabolism	Lipid metabolism	Fatty acid biosynthesis	mmu0 0061	2	14	0.10074 6367	ENSMUSG00000020333 ENSMUSG00000031278
Metabolism Organismal Systems	Carbohydrate metabolism Immune system	Amino sugar and nucleotide sugar metabolism Fc epsilon RI signaling	mmu0 0520 mmu0 4664	4	49	0.10471 5764 0.10633 9757	ENSMUSG00000001891 ENSMUSG00000042684 ENSMUSG0000002 2474 ENSMUSG00000029201 ENSMUSG00000033220 ENSMUSG00000021936 ENSMUSG0000003 4116 ENSMUSG00000094694 ENSMUSG00000018932

		pathway					
	Glycan						
	biosynthesis	Other types					
	and	of O-glycan	mmu0			0.10723	ENSMUSG00000028541 ENSMUSG00000028413 ENSMUSG00000003
Metabolism	metabolism	biosynthesis	0514	3	31	0761	4807
Genetic	Folding, sorting						
Information	and	Protein	mmu0			0.10723	ENSMUSG00000054408 ENSMUSG00000019802 ENSMUSG00000007
Processing	degradation	export	3060	3	31	0761	9108
	Endocrine and	Type II					
Human	metabolic	diabetes	mmu0			0.11023	ENSMUSG00000021936 ENSMUSG00000004113 ENSMUSG00000001
Diseases	diseases	mellitus	4930	4	50	0929	5968 ENSMUSG00000020027
		Glycosphing					
	Glycan	olipid					
	biosynthesis	biosynthesis					
	and	- ganglio	mmu0			0.11170	
Metabolism	metabolism	series	0604	2	15	8594	ENSMUSG00000031749 ENSMUSG00000027822
		Glycosphing					
	Glycan	olipid					
	biosynthesis	biosynthesis					
	and	- globo	mmu0			0.11170	
Metabolism	metabolism	series	0603	2	15	8594	ENSMUSG00000031749 ENSMUSG00000055978
		Apoptosis -					
Cellular	Cell growth	multiple	mmu0			0.11447	ENSMUSG00000021936 ENSMUSG00000020486 ENSMUSG00000002
Processes	and death	species	4215	3	32	9879	5860
		Thyroid					
Organismal	Endocrine	hormone	mmu0			0.11564	ENSMUSG00000053007 ENSMUSG00000052889 ENSMUSG00000002
Systems	system	synthesis	4918	5	71	7956	8597 ENSMUSG00000020048 ENSMUSG00000027523
		Arginine and					
	Amino acid	proline	mmu0			0.11587	ENSMUSG00000019987 ENSMUSG00000080845 ENSMUSG00000000
Metabolism	metabolism	metabolism	0330	4	51	2849	6442 ENSMUSG00000029455
Cellular	Cell growth	Oocyte	mmu0	7	116	0.12523	ENSMUSG00000031309 ENSMUSG00000020300 ENSMUSG00000001

Processes	and death	meiosis	4114			7593	4956 ENSMUSG00000024974 ENSMUSG00000020687 ENSMUSG0000025060 ENSMUSG00000046532
		Signaling pathways					
Cellular Processes	Cellular community - eukaryotes	regulating pluripotency of stem cells	mmu04550	8	140	0.131221091	ENSMUSG00000020135 ENSMUSG00000067336 ENSMUSG00000036202 ENSMUSG00000015957 ENSMUSG00000021796 ENSMUSG0000020644 ENSMUSG00000037035 ENSMUSG00000036904
Metabolism	Carbohydrate metabolism	Starch and sucrose metabolism	mmu00500	4	54	0.133526025	ENSMUSG00000003865 ENSMUSG00000025579 ENSMUSG00000001891 ENSMUSG00000029201
Genetic Information Processing	Replication and repair	DNA replication	mmu03030	3	35	0.1372678	ENSMUSG00000024925 ENSMUSG00000020471 ENSMUSG00000020630
Metabolism	Carbohydrate metabolism	Fructose and mannose metabolism	mmu00051	3	35	0.1372678	ENSMUSG00000022474 ENSMUSG00000026773 ENSMUSG000000101904
Organismal Systems	Immune system	Antigen processing and presentation	mmu04612	6	98	0.142148434	ENSMUSG00000067235 ENSMUSG00000059970 ENSMUSG00000021270 ENSMUSG00000055413 ENSMUSG00000027248 ENSMUSG0000038642
Genetic Information Processing	Folding, sorting and degradation	Protein processing in endoplasmic reticulum	mmu04141	9	167	0.145309469	ENSMUSG00000059970 ENSMUSG00000024079 ENSMUSG00000027828 ENSMUSG00000021270 ENSMUSG00000019802 ENSMUSG0000024807 ENSMUSG00000020048 ENSMUSG00000027248 ENSMUSG00000021936
Organismal Systems	Endocrine system	Melanogene sis	mmu04916	6	99	0.146741233	ENSMUSG00000015957 ENSMUSG00000021367 ENSMUSG00000019966 ENSMUSG00000027523 ENSMUSG00000036904 ENSMUSG0000052889
Organismal	Endocrine	Regulation	mmu0	4	57	0.15219	ENSMUSG00000027523 ENSMUSG00000052920 ENSMUSG0000008

Systems	system	of lipolysis in adipocytes Primary	4923			6792	3816 ENSMUSG00000025509
Human Diseases	Immune diseases	immunodeficiency	mmu0 5340	3	37	0.15324 2672	ENSMUSG00000026648 ENSMUSG00000094694 ENSMUSG00000026395
Metabolism	Lipid metabolism	Steroid biosynthesis	mmu0 0100	2	19	0.15815 0581	ENSMUSG00000026675 ENSMUSG00000021273
Metabolism	Amino acid metabolism	Alanine, aspartate and glutamate metabolism	mmu0 0250	3	38	0.16143 9687	ENSMUSG00000025991 ENSMUSG00000022546 ENSMUSG00000057880
Cellular Processes	Cell growth and death	Cell cycle	mmu0 4110	7	125	0.16209 5399	ENSMUSG00000002297 ENSMUSG00000025862 ENSMUSG00000037286 ENSMUSG00000024974 ENSMUSG00000020687 ENSMUSG0000069089 ENSMUSG00000015312
Environmental Information Processing	Signal transduction	cGMP-PKG signaling pathway	mmu0 4022	9	173	0.16692 5503	ENSMUSG00000053093 ENSMUSG00000053007 ENSMUSG00000015968 ENSMUSG00000019907 ENSMUSG00000014956 ENSMUSG00000052920 ENSMUSG00000027335 ENSMUSG00000054640 ENSMUSG00000044951
Environmental Information Processing	Signaling molecules and interaction	ECM-receptor interaction	mmu0 4512	5	83	0.17881 2591	ENSMUSG00000027009 ENSMUSG00000038486 ENSMUSG00000020592 ENSMUSG00000079465 ENSMUSG000000103735
Human Diseases	Cancers: Specific types	Small cell lung cancer	mmu0 5222	5	85	0.19040 9527	ENSMUSG00000083816 ENSMUSG00000017386 ENSMUSG00000079465 ENSMUSG00000027164 ENSMUSG00000025860
Organismal Systems	Excretory system	Proximal tubule bicarbonate reclamation	mmu0 4964	2	22	0.19490 0244	ENSMUSG00000025792 ENSMUSG00000004655
Environmental Information	Signal transduction	ErbB signaling	mmu0 4012	5	87	0.20226 4956	ENSMUSG00000021936 ENSMUSG00000062209 ENSMUSG00000052889 ENSMUSG00000027646 ENSMUSG00000004043

Processing		pathway		Vasopressin -regulated water			
Organismal Systems	Excretory system	reabsorption	mmu0 4962	3	43	0.20418 8176	ENSMUSG00000009013 ENSMUSG00000027523 ENSMUSG000000053007
Organismal Systems	Nervous system	Long-term potentiation	mmu0 4720	4	66	0.21329 9446	ENSMUSG00000031309 ENSMUSG00000068798 ENSMUSG000000052889 ENSMUSG00000014956
Human Diseases	Cancers: Specific types	Pancreatic cancer	mmu0 5212	4	66	0.21329 9446	ENSMUSG00000033220 ENSMUSG00000021936 ENSMUSG000000026104 ENSMUSG00000007613
Environmental Information Processing	Signaling molecules and interaction	Neuroactive ligand-receptor interaction	mmu0 4080	13	285	0.21443 9586	ENSMUSG00000028036 ENSMUSG00000027335 ENSMUSG000000059588 ENSMUSG00000059481 ENSMUSG00000045613 ENSMUSG0000032860 ENSMUSG00000049130 ENSMUSG00000027249 ENSMUSG00000068037 ENSMUSG00000038668 ENSMUSG00000040552 ENSMUSG00000053004 ENSMUSG00000057722
		Glycosaminoglycan biosynthesis					
		- heparan sulfate / heparin	mmu0 0534				0.21994 3084
Metabolism	Glycan biosynthesis and metabolism	Progesteron e-mediated		2	24		ENSMUSG00000044499 ENSMUSG00000028838
Organismal Systems	Endocrine system	oocyte maturation	mmu0 4914	5	90	0.22049 1676	ENSMUSG00000031309 ENSMUSG00000020687 ENSMUSG000000020300 ENSMUSG00000021270 ENSMUSG00000021936
Organismal Systems	Digestive system	Protein digestion	mmu0 4974	5	90	0.22049 1676	ENSMUSG00000054640 ENSMUSG00000001865 ENSMUSG000000021999 ENSMUSG00000079465 ENSMUSG00000035000
Cellular Processes	Cell growth and death	p53 signaling	mmu0 4115	4	68	0.22771 404	ENSMUSG00000022292 ENSMUSG00000037411 ENSMUSG000000020649 ENSMUSG00000015312

		pathway					
		Chemical					
Human Diseases	Cancers: Overview	carcinogenesis	mmu05204	5	93	0.239193397	ENSMUSG00000024885 ENSMUSG00000032315 ENSMUSG00000024087 ENSMUSG00000083816 ENSMUSG00000003053
Organismal Systems	Endocrine system	Thyroid hormone signaling pathway	mmu04919	6	117	0.239419571	ENSMUSG00000013833 ENSMUSG00000101904 ENSMUSG00000027646 ENSMUSG00000026104 ENSMUSG00000052889 ENSMUSG0000015468
Metabolism	Carbohydrate metabolism	Inositol phosphate metabolism	mmu00562	4	70	0.242364379	ENSMUSG00000019139 ENSMUSG00000027296 ENSMUSG00000025178 ENSMUSG00000030660
Organismal Systems	Endocrine system	Insulin signaling pathway	mmu04910	7	142	0.242684596	ENSMUSG00000003865 ENSMUSG00000020027 ENSMUSG00000006542 ENSMUSG00000014956 ENSMUSG00000028518 ENSMUSG0000021936 ENSMUSG00000029167
Environmental Information Processing	Signal transduction	Hippo signaling pathway	-multiple species	2	26	0.245226792	ENSMUSG00000006262 ENSMUSG00000022329
Organismal Systems	Development	Dorso-ventral axis formation	mmu04320	2	26	0.245226792	ENSMUSG00000020300 ENSMUSG00000015468
Organismal Systems	Digestive system	Bile secretion	mmu04976	4	71	0.249768207	ENSMUSG00000027523 ENSMUSG00000021135 ENSMUSG00000029802 ENSMUSG00000004655
Human Diseases	Drug resistance:	Endocrine resistance	mmu01522	5	95	0.251892993	ENSMUSG00000021936 ENSMUSG00000015468 ENSMUSG00000027314 ENSMUSG00000027646 ENSMUSG00000027523
Human Diseases	Antineoplastic Immune diseases	Allograft rejection	mmu05330	4	72	0.257219332	ENSMUSG00000067235 ENSMUSG00000055413 ENSMUSG00000094694 ENSMUSG00000015437
Organismal Systems	Endocrine system	Renin secretion	mmu04924	4	72	0.257219332	ENSMUSG00000027523 ENSMUSG00000004655 ENSMUSG00000004347 ENSMUSG00000015968

Organismal Systems	Aging Glycan biosynthesis and metabolism	Longevity regulating pathway	mmu04211	5	96	0.258305088	ENSMUSG00000053007 ENSMUSG00000029167 ENSMUSG00000006542 ENSMUSG00000028518 ENSMUSG00000040760
Metabolism Human Diseases	Substance dependence	N-Glycan biosynthesis Cocaine addiction	mmu00510	3	49	0.258315296	ENSMUSG00000028541 ENSMUSG00000028413 ENSMUSG000000032123
Human Diseases	Cancers: Overview	Choline metabolism in cancer	mmu05231	3	49	0.258315296	ENSMUSG00000027523 ENSMUSG00000020182 ENSMUSG000000053007
Metabolism Genetic Information Processing	Amino acid metabolism	Phenylalanine, tyrosine and tryptophan biosynthesis	mmu00400	1	9	0.290892547	ENSMUSG00000033220 ENSMUSG00000021936 ENSMUSG000000052889 ENSMUSG00000029684 ENSMUSG000000057193
Human Diseases	Infectious diseases: Bacterial	RNA polymerase	mmu03020	2	30	0.291750046	ENSMUSG00000001670
Organismal Systems	Digestive system	Bacterial invasion of epithelial cells	mmu05100	4	78	0.29596175	ENSMUSG00000027427 ENSMUSG00000035834
Human Diseases	Infectious diseases: Bacterial	Salivary secretion	mmu04970	4	78	0.302708732	ENSMUSG00000022831 ENSMUSG00000027646 ENSMUSG000000061665 ENSMUSG00000029684
Organismal Systems	Excretory system	Salmonella infection	mmu05132	4	78	0.302708732	ENSMUSG00000027523 ENSMUSG00000052920 ENSMUSG000000052889 ENSMUSG00000027335
Human Diseases	Excretory system	Endocrine and other	mmu04961	3	54	0.304699958	ENSMUSG00000021936 ENSMUSG00000025888 ENSMUSG000000029684 ENSMUSG00000039005
Organismal Systems							ENSMUSG00000027523 ENSMUSG00000052889 ENSMUSG000000054640

		factor-regulated calcium reabsorption					
		Pentose phosphate pathway	mmu0030			0.308593542	
Metabolism	Carbohydrate metabolism			2	31		ENSMUSG00000023070 ENSMUSG00000026005
Human Diseases	Cancers: Specific types	Basal cell carcinoma	mmu05217	3	55	0.314036718	ENSMUSG00000015957 ENSMUSG00000036904 ENSMUSG00000020135
Environmental Information Processing	Signal transduction	mTOR signaling pathway	mmu04150	7	156	0.316623941	ENSMUSG00000050310 ENSMUSG00000031309 ENSMUSG00000015957 ENSMUSG00000035992 ENSMUSG00000028518 ENSMUSG0000036904 ENSMUSG00000052889
Organismal Systems	Immune system	T cell receptor signaling pathway	mmu04660	5	105	0.31745305	ENSMUSG00000004266 ENSMUSG00000024235 ENSMUSG00000034116 ENSMUSG00000030595 ENSMUSG00000026395
Metabolism	Carbohydrate metabolism	Citrate cycle (TCA cycle)	mmu00020	2	32	0.321178716	ENSMUSG00000024892 ENSMUSG00000021913
Genetic Information Processing	Folding, sorting and degradation	SNARE interactions in vesicular transport	mmu04130	2	33	0.333705918	ENSMUSG00000051412 ENSMUSG00000039232
Metabolism	Lipid metabolism	Synthesis and degradation of ketone bodies	mmu00072	1	11	0.338972853	ENSMUSG00000046598
Genetic Information Processing	Translation	Ribosome biogenesis in eukaryotes	mmu03008	4	83	0.341245266	ENSMUSG00000041747 ENSMUSG00000030521 ENSMUSG00000042354 ENSMUSG00000021428

Genetic Information Processing Organismal Systems	Replication and repair Nervous system	Base excision repair Long-term depression	mmu0 3410 mmu0 4730	2 3	35 61	0.35854 5065 0.36998 8687	ENSMUSG00000066551 ENSMUSG00000020471 ENSMUSG00000027523 ENSMUSG00000052920 ENSMUSG00000052889
Human Diseases Organismal Systems	Immune diseases Nervous system	Autoimmun e thyroid disease Synaptic vesicle cycle	mmu0 5320 mmu0 4721	4 3	87 62	0.37218 2811 0.37925 4207	ENSMUSG00000067235 ENSMUSG00000055413 ENSMUSG00000094694 ENSMUSG00000015437 ENSMUSG00000034799 ENSMUSG00000004113 ENSMUSG00000031840
Human Diseases	Cancers: Specific types	Prostate cancer	mmu0 5215	4	89	0.38761 9725	ENSMUSG00000021270 ENSMUSG00000020048 ENSMUSG00000046532 ENSMUSG00000053007
Organismal Systems	Aging	Longevity regulating pathway - multiple species	mmu0 4213	3	64	0.39769 1584	ENSMUSG00000059970 ENSMUSG00000006542 ENSMUSG00000028518
Metabolism	Metabolism of cofactors and vitamins	Folate biosynthesis	mmu0 0790	1	14	0.40397 353	ENSMUSG00000073987
Environmental Information Processing	Signal transduction	Phospholipase D signaling pathway	mmu0 4072	6	146	0.41142 2149	ENSMUSG00000038387 ENSMUSG00000028036 ENSMUSG00000019966 ENSMUSG00000094694 ENSMUSG00000038668 ENSMUSG0000027523
Cellular Processes Genetic Information Processing Metabolism	Transport and catabolism	Regulation of autophagy	mmu0 4140 mmu0 3010 mmu0	2 6 2	40 148 41	0.41898 1814 0.42350 7834 0.43072	ENSMUSG00000079418 ENSMUSG00000028518 ENSMUSG00000023939 ENSMUSG00000029486 ENSMUSG00000024181 ENSMUSG00000031781 ENSMUSG00000015672 ENSMUSG0000003299 ENSMUSG00000017713 ENSMUSG00000011752

	metabolism	serine and threonine metabolism	0260			673	
Organismal Systems	Nervous system	n signaling pathway	mmu0 4722	5	122	0.43177 4049	ENSMUSG00000031309 ENSMUSG00000021936 ENSMUSG0000006 8798 ENSMUSG00000027164 ENSMUSG00000030595
Environmental Information Processing	Signal transduction	Phosphatidy linositol signaling system	mmu0 4070	4	97	0.44864 2392	ENSMUSG00000030660 ENSMUSG00000027296 ENSMUSG0000005 2889 ENSMUSG00000025178
Metabolism	Energy metabolism	Nitrogen metabolism	mmu0 0910	1	17	0.46258 6749	ENSMUSG00000025991
Metabolism Genetic Information Processing	Metabolism of other amino acids	Selenocomp ound metabolism	mmu0 0450	1	17	0.46258 6749	ENSMUSG00000003477
Organismal Systems	Transcription	Basal transcriptio n factors	mmu0 3022	2	44	0.46517 5375	ENSMUSG00000069089 ENSMUSG00000001524
Human Diseases	Immune system	Intestinal immune network for IgA production	mmu0 4672	2	44	0.46517 5375	ENSMUSG00000027009 ENSMUSG00000094694
Organismal Systems	Immune diseases	Graft-versus -host disease	mmu0 5332	3	72	0.46961 4918	ENSMUSG00000067235 ENSMUSG00000055413 ENSMUSG0000001 5437
Organismal Systems	Digestive system	Carbohydrat e digestion and absorption	mmu0 4973	2	45	0.47638 1669	ENSMUSG00000052889 ENSMUSG00000015968
Organismal	Digestive	Gastric acid	mmu0	3	73	0.47834	ENSMUSG00000027523 ENSMUSG00000052889 ENSMUSG0000004

Systems	system	secretion	4971			3503	4951
	Glycan						
	biosynthesis	Other					
	and	glycan	mmu0			0.48081	
Metabolism	metabolism	degradation	0511	1	18	5304	ENSMUSG00000019810
	Metabolism of	Pantothenat					
	cofactors and	e and CoA	mmu0			0.48081	
Metabolism	vitamins	biosynthesis	0770	1	18	5304	ENSMUSG00000030826
	Metabolism of	One carbon					
	cofactors and	pool by	mmu0			0.49842	
Metabolism	vitamins	folate	0670	1	19	6003	ENSMUSG00000029376
	Lipid	Sphingolipid	mmu0			0.50912	
Metabolism	metabolism	metabolism	0600	2	48	178	ENSMUSG00000030760 ENSMUSG00000057342
	Endocrine and	Type I					
Human	metabolic	diabetes	mmu0			0.51255	ENSMUSG00000067235 ENSMUSG00000055413 ENSMUSG0000001
Diseases	diseases	mellitus	4940	3	77	436	5437
		Glycosamin					
		oglycan					
		biosynthesis					
		-					
	Glycan	chondroitin					
	biosynthesis	sulfate /					
	and	dermatan	mmu0			0.51543	
Metabolism	metabolism	sulfate	0532	1	20	9774	ENSMUSG00000032997
Environmental		Notch					
Information	Signal	signaling	mmu0			0.51973	
Processing	transduction	pathway	4330	2	49	3155	ENSMUSG00000027314 ENSMUSG00000015468
	Glycan						
	biosynthesis	Glycosamin					
	and	oglycan	mmu0			0.53187	
Metabolism	metabolism	degradation	0531	1	21	6836	ENSMUSG00000035273

Genetic Information Processing	Replication and repair	Fanconi anemia pathway	mmu03460	2	51	0.540490207	ENSMUSG00000045102 ENSMUSG00000028560
Metabolism	Xenobiotics biodegradation and metabolism	Drug metabolism - other enzymes	mmu00983	2	51	0.540490207	ENSMUSG00000056973 ENSMUSG00000003500
Genetic Information Processing	Replication and repair	Mismatch repair	mmu03430	1	22	0.547756723	ENSMUSG00000020471
Human Diseases	Neurodegenerative diseases	Amyotrophic lateral sclerosis (ALS)	mmu05014	2	52	0.550632744	ENSMUSG00000018932 ENSMUSG00000025888
Metabolism	Glycan biosynthesis and metabolism	Glycosylphosphatidylinositol(GPI)-anchored biosynthesis	mmu00563	1	25	0.592238899	ENSMUSG00000010607
Human Diseases	Immune diseases	Asthma	mmu05310	1	26	0.60607254	ENSMUSG000000094694
Metabolism	Metabolism of cofactors and vitamins	Retinol metabolism	mmu00830	3	89	0.607393944	ENSMUSG00000024747 ENSMUSG00000032315 ENSMUSG00000003053
Organismal Systems	Taste transduction	Sensory system	mmu04742	3	89	0.607393944	ENSMUSG00000015085 ENSMUSG00000004347 ENSMUSG000000023439
Human Diseases	Endocrine and metabolic diseases	Maturation onset of diabetes	mmu04950	1	27	0.619437197	ENSMUSG00000017950
Genetic	Replication and	Homologous	mmu0	1	28	0.63234	ENSMUSG00000020471

Information Processing	repair	recombination	3440			8759	
Environmental		Sphingolipid					
Information Processing	Signal transduction	signaling pathway	mmu04071	4	125	0.640484109	ENSMUSG00000033220 ENSMUSG00000021936 ENSMUSG00000052889 ENSMUSG00000057342
Genetic		mRNA					
Information Processing	Translation	surveillance pathway	mmu03015	3	96	0.656710125	ENSMUSG00000028274 ENSMUSG00000014956 ENSMUSG00000027176
		Glyoxylate and dicarboxylate					
Metabolism	Carbohydrate metabolism	metabolism	mmu00630	1	30	0.656873475	ENSMUSG00000032527
		Central carbon					
Human Diseases	Cancers: Overview	metabolism in cancer	mmu05230	2	66	0.675823547	ENSMUSG00000011752 ENSMUSG00000034748
		Nicotinate and nicotinamide					
Metabolism	Metabolism of cofactors and vitamins	metabolism	mmu00760	1	35	0.711269106	ENSMUSG00000029780
Human Diseases	Cancers: Specific types	Melanoma	mmu05218	2	72	0.720100634	ENSMUSG00000022523 ENSMUSG00000057967
		Chronic					
Human Diseases	Cancers: Specific types	myeloid leukemia	mmu05220	2	73	0.726963256	ENSMUSG00000007613 ENSMUSG00000004043
Human Diseases	Substance dependence	Nicotine addiction	mmu05033	1	40	0.757046767	ENSMUSG00000004113
Organismal Systems	Excretory system	Aldosterone -regulated	mmu04960	1	40	0.757046767	ENSMUSG00000052889

		sodium reabsorption					
Human	Drug resistance:	Platinum drug	mmu0			0.75916	
Diseases	Antineoplastic	resistance	1524	2	78	5651	ENSMUSG00000025860 ENSMUSG00000017485
Human	Cancers:	Bladder	mmu0			0.76529	
Diseases	Specific types	cancer	5219	1	41	2253	ENSMUSG00000027646
		EGFR tyrosine kinase					
Human	Drug resistance:	inhibitor	mmu0			0.78250	
Diseases	Antineoplastic	resistance	1521	2	82	9194	ENSMUSG00000052889 ENSMUSG00000027646
Environmental		Hedgehog					
Information	Signal	signaling	mmu0			0.78838	
Processing	transduction	pathway	4340	1	44	8456	ENSMUSG00000029122
Genetic	Folding, sorting						
Information	and		mmu0			0.79557	
Processing	degradation	Proteasome	3050	1	45	0968	ENSMUSG00000036743
Human	Cancers:	Endometrial	mmu0			0.83947	
Diseases	Specific types	cancer	5213	1	52	0673	ENSMUSG00000020135
							ENSMUSG00000083816 ENSMUSG00000024087 ENSMUSG0000002
Human	Cancers:	MicroRNAs	mmu0			0.85967	0135 ENSMUSG00000067336 ENSMUSG00000024975 ENSMUSG00
Diseases	Overview	in cancer	5206	7	281	4851	000052889 ENSMUSG00000015468
		Non-small					
Human	Cancers:	cell lung	mmu0			0.86018	
Diseases	Specific types	cancer	5223	1	56	5332	ENSMUSG00000052889
Human	Cancers:		mmu0			0.89754	
Diseases	Specific types	Glioma	5214	1	65	6528	ENSMUSG00000052889
Genetic		Aminoacyl-t	mmu0			0.90102	
Information	Translation	RNA	0970	1	66	5828	ENSMUSG00000038838

Processing		biosynthesis							
		Drug							
	Xenobiotics	metabolism							
	biodegradation	-							
	and	cytochrome	mmu0			0.90438			
Metabolism	metabolism	P450	0982	1	67	7056		ENSMUSG00000024885	
Human	Cancers:	Renal cell	mmu0			0.90763			
Diseases	Specific types	carcinoma	5211	1	68	4216		ENSMUSG00000068798	
Organismal		Olfactory	mmu0					ENSMUSG00000054640 ENSMUSG00000052920 ENSMUSG00000000	
Systems	Sensory system	transduction	4740	3	1102	1		4347	

Table SVI. The DEGs in the metabolic related pathways of DbCM / CK.

DbCM_vs_CK.DEG.kegg.Amino_acid_metabolism

Gene_ID	CK-1	CK-2	CK-3	DbCM-1	DbCM-2	DbCM-3	KEGG_ID	symbol	ncbi_description
ENSMUSG00000000326	3.2124 5641	1.79971 3905	2.3832 10404	3.920393 156	3.77233 6607	4.310600 146	K00545	Comt	catechol-O-methyltransferase
ENSMUSG000000001270	31.853 06475	24.9433 6758	28.427 68105	19.27965 865	19.8388 8939	16.71971 06	K00933	Ckb	creatine kinase, brain
ENSMUSG000000003477	25.028 17991	26.4699 0988	30.980 21296	83.92356 779	82.4700 0452	74.70460 531	K00562	Inmt	indolethylamine N-methyltransferase
ENSMUSG000000011179	46.832 82395	48.1274 7328	47.150 80372	63.71805 663	58.8576 1995	54.60635 96	K01581	Odc1	ornithine decarboxylase, structural 1
ENSMUSG000000019055	42.398 05277	39.2076 7303	34.958 52168	24.55025 531	27.3587 6508	23.98880 09	K00473	Plod1	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 1
ENSMUSG000000019916	9.8353 09773	10.7696 6918	11.568 67269	5.760274 564	6.56476 2083	7.777530 333	K00472	P4ha1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha 1 polypeptide
ENSMUSG000000020534	5.3944 68117	5.83667 113	6.4104 40815	7.117940 109	7.55759 4555	7.147986 931	K00600	Shmt1	serine hydroxymethyltransferase 1 (soluble)
ENSMUSG000000020826	8.3608 40499	7.02517 5733	7.4649 02429	4.942921 967	5.11354 2907	4.962047 295	K13241	Nos2	nitric oxide synthase 2, inducible
ENSMUSG000000022186	262.47 39732	263.246 2315	289.43 28376	153.3752 575	177.412 5371	173.2131 516	K01027	Oxct1	3-oxoacid CoA transferase 1
ENSMUSG000000024087	3.2804 23378	2.88578 7564	2.5230 88647	6.348274 56	5.34169 7863	5.780421 416	K07410	Cyp1b1	cytochrome P450, family 1, subfamily b, polypeptide 1
ENSMUSG000000024640	2.8497 78267	2.01230 4495	1.8268 45735	3.761648 644	3.65158 1576	4.143651 764	K00831	Psat1	phosphoserine aminotransferase 1
ENSMUSG000000024827	0.1781 74544	0.21943 6138	0.1246 81876	0.516418 331	0.38358 3826	0.503034 104	K00281	Gldc	glycine decarboxylase

ENSMUSG00000024903	0	0.01252 4528	0	0.235800 574	0.44582 9539	0.121804 896	K03334	Lao1	L-amino acid oxidase 1
ENSMUSG00000025190	383.81 86428	364.020 3343	401.43 43311	507.3705 724	527.538 7285	494.3837 01	K14454	Got1	glutamic-oxaloacetic transaminase 1, soluble
ENSMUSG00000025745	507.02 03499	498.376 921	532.21 59723	630.9247 22	650.948 7928	648.9368 613	K07515	Hadha	hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), alpha subunit
ENSMUSG00000026473	241.01 50024	212.400 1753	232.51 91055	272.3307 751	337.839 6187	283.7626 977	K01915	Glul	glutamate-ammonia ligase (glutamine synthetase)
ENSMUSG00000026687	18.296 52714	19.9662 4489	17.040 57891	23.65845 339	22.5334 987	24.20158 882	K00149	Aldh9a1	aldehyde dehydrogenase 9, subfamily A1
ENSMUSG00000027187	132.09 68003	130.425 8057	133.55 10921	159.4836 847	164.735 5343	168.1569 173	K03781	Cat	catalase
ENSMUSG00000027875	28.899 53743	34.8123 1421	32.253 77747	93.69084 259	97.1256 0815	90.61036 974	K01641	Hmgcs2	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2
ENSMUSG00000032315	0.7688 12919	1.66899 4376	1.3016 01119	8.523049 765	10.8360 8469	9.293320 655	K07408	Cyp1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSMUSG00000032350	4.7776 23142	5.44052 9881	4.8249 14376	6.156356 375	6.15716 5774	6.168750 784	K11204	Gclc	glutamate-cysteine ligase, catalytic subunit
ENSMUSG00000032374	5.4323 77938	6.62615 2378	6.6901 61732	4.543282 417	3.76137 8653	4.561668 178	K13645	Plod2	procollagen lysine, 2-oxoglutarate 5-dioxygenase 2
ENSMUSG00000032649	4.4612 93831	4.70808 1198	4.4353 47441	3.174045 515	3.39020 5236	3.082794 726	K11703	Colgalt2	collagen beta(1-O)galactosyltransferase 2
ENSMUSG00000033307	172.12 18364	148.865 7898	143.92 7147	208.9277 22	222.377 7539	169.4305 496	K07253	Mif	macrophage migration inhibitory factor (glycosylation-inhibiting factor)
ENSMUSG00000036880	795.33 39203	766.379 4719	808.36 1652	1063.602 428	1116.74 6467	1042.098 943	K07508	Acaa2	acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase)
ENSMUSG00000039783	0.7377 2122	0.75312 9345	0.5189 69391	0.322255 53	0.08912 4931	0.257133 718	K00486	Kmo	kynurenine 3-monooxygenase (kynurenine 3-hydroxylase)
ENSMUSG00000048087	3.4194	3.76712	3.9294	4.330504	5.42577	4.319819	K01251	Gm4737	predicted gene 4737

ENSMUSG00000057880	35961 5.5041 5988	4337 5.40680 3129	83229 6.2451 66559	214 3.024941 367	9306 3.34608 3641	661 3.042644 793	K13524	Abat	4-aminobutyrate aminotransferase
ENSMUSG00000059447	330.70 66819	336.447 3266	355.95 61331	407.2224 733	414.222 1469	427.3146 874	K07509	Hadhb	hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), beta subunit
ENSMUSG00000063558	7.1266 76922	8.73130 8507	8.8716 65566	9.528046 683	10.1402 2955	11.04602 734	K00157	Aox1	aldehyde oxidase 1
ENSMUSG00000069835	3.7854 19911	3.12733 5225	3.3564 1787	5.303044 342	4.99275 0555	4.167885 408	K00657	Sat2	spermidine/spermine N1-acetyl transferase 2
ENSMUSG00000074207	6.3210 64398	5.26486 0001	5.4002 98678	9.837957 108	8.66423 3558	7.920069 471	K13951	Adh1	alcohol dehydrogenase 1 (class I)

DbCM_vs_CK.DEG.kegg.Lipid_metabolism

Gene_ID	CK-1	CK-2	CK-3	DbCM-1	DbCM-2	DbCM-3	KEGG_ID	symbol	ncbi_description
ENSMUSG00000000320	4.30161 2039	3.80373 383	3.48696 7527	6.54385 7002	5.53987 0276	5.68235 0609	K00458	Alox12	arachidonate 12-lipoxygenase
ENSMUSG00000000326	3.21245 641	1.79971 3905	2.38321 0404	3.92039 3156	3.77233 6607	4.31060 0146	K00545	Comt	catechol-O-methyltransferase
ENSMUSG00000006344	3.97376 909	3.29558 6753	3.43422 8384	5.32086 8379	6.01102 1866	5.81322 5671	K18592	Ggt5	gamma-glutamyltransferase 5
ENSMUSG00000015090	201.315 43	158.097 0996	240.225 6269	321.989 4956	503.847 7484	299.164 3445	K01830	Ptgds	prostaglandin D2 synthase (brain)
ENSMUSG00000018574	307.376 5826	308.042 7333	314.848 9228	407.629 3108	398.803 5131	403.497 4049	K09479	Acadvl	acyl-Coenzyme A dehydrogenase, very long chain
ENSMUSG00000018924	0.13882 6741	0.47629 0804	0.06939 0939	0.02090 2508	0.01358 517	0.02375 423	K00460	Alox15	arachidonate 15-lipoxygenase
ENSMUSG00000020777	119.991	115.297	120.934	146.945	158.962	156.027	K00232	Acox1	acyl-Coenzyme A oxidase 1, palmitoyl

	7967	0457	111	1785	8243	4527			
ENSMUSG00000021226	71.4554	69.0354	71.5998	99.6076	104.826	99.1386	K01068	Acot2	acyl-CoA thioesterase 2
	8929	5566	6506	4439	6982	5231			
ENSMUSG00000021608	6.66137	6.60451	5.74039	5.17243	4.00734	4.18085	K13510	Lpcat1	lysophosphatidylcholine acyltransferase 1
	1695	5962	2345	2137	7911	1141			
ENSMUSG00000022040	182.023	190.009	186.532	259.911	275.756	265.479	K08726	Ephx2	epoxide hydrolase 2, cytoplasmic
	9201	1361	2965	4956	4076	7147			
ENSMUSG00000022186	262.473	263.246	289.432	153.375	177.412	173.213	K01027	Oxct1	3-oxoacid CoA transferase 1
	9732	2315	8376	2575	5371	1516			
ENSMUSG00000022425	7.09928	8.74523	7.41025	10.0789	9.81271	9.18911	K01122	Enpp2	ectonucleotide pyrophosphatase/phosphodiesterase 2
	5567	6586	2784	6289	5357	0914			
ENSMUSG00000023019	1.47286	2.25201	1.93981	2.68402	3.08850	2.97020	K00006	Gpd1	glycerol-3-phosphate dehydrogenase 1 (soluble)
	3898	1718	2668	8819	1273	4516			
ENSMUSG00000024087	3.28042	2.88578	2.52308	6.34827	5.34169	5.78042	K07410	Cyp1b1	cytochrome P450, family 1, subfamily b, polypeptide 1
	3378	7564	8647	456	7863	1416			
ENSMUSG00000024843	1.68942	1.67590	1.71762	2.53286	2.14566	1.93739	K14156	Chka	choline kinase alpha
	1769	9477	2639	0902	5467	6943			
ENSMUSG00000024900	32.8911	32.6905	35.6328	46.9288	47.4612	47.2230	K08765	Cpt1a	carnitine palmitoyltransferase 1a, liver
	5765	3882	8305	8808	8903	5855			
ENSMUSG00000025509	322.317	289.538	285.927	463.833	474.193	426.509	K16816	Pnpla2	patatin-like phospholipase domain containing 2
	5677	7776	942	5701	9309	1009			
ENSMUSG00000025745	507.020	498.376	532.215	630.924	650.948	648.936	K07515	Hadha	hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), alpha subunit
	3499	921	9723	722	7928	8613			
ENSMUSG00000026003	531.218	544.502	557.552	714.970	757.393	773.867	K00255	Acadl	acyl-Coenzyme A dehydrogenase, long-chain
	8303	4808	4076	9796	6353	1787			
ENSMUSG00000026675	2.82078	3.29796	2.98660	3.61388	4.25758	3.66645	K13373	Hsd17b7	hydroxysteroid (17-beta) dehydrogenase 7
	6604	1895	2871	1301	9931	1502			
ENSMUSG00000026687	18.2965	19.9662	17.0405	23.6584	22.5334	24.2015	K00149	Aldh9a1	aldehyde dehydrogenase 9, subfamily A1
	2714	4489	7891	5339	987	8882			

ENSMUSG00000027875	28.8995 3743	34.8123 1421	32.2537 7747	93.6908 4259	97.1256 0815	90.6103 6974	K01641	Hmgcs2	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2
ENSMUSG00000027999	17.4594 0222	17.5517 7408	16.2916 6591	21.2305 309	22.4995 8879	20.4644 4385	K01047	Pla2g12a	phospholipase A2, group XIA
ENSMUSG00000028497	2.79409 285	3.36319 7085	3.62900 3776	2.53922 5897	1.94402 0414	2.26205 7465	K10703	Hacd4	3-hydroxyacyl-CoA dehydratase 4
ENSMUSG00000028937	67.0644 9601	61.7724 7065	63.1553 1718	79.0275 6164	81.1317 096	74.5432 1246	K17360	Acot7	acyl-CoA thioesterase 7
ENSMUSG00000029330	1.58523 5813	1.22208 9449	1.59324 3549	2.41889 794	2.70220 249	2.15100 1829	K00981	Cds1	CDP-diacylglycerol synthase 1
ENSMUSG00000029925	1.42218 5933	1.59933 9962	1.18721 4779	0.96580 169	0.77476 5642	0.89059 6176	K01832	Tbxas1	thromboxane A synthase 1, platelet
ENSMUSG00000030483	0.10472 8691	0.19961 457	0.41877 9388	0.57817 9068	1.43478 1141	0.89599 0713	K07412	Cyp2b10	cytochrome P450, family 2, subfamily b, polypeptide 10
ENSMUSG00000031903	9.76358 314	7.99105 1615	8.10486 1689	6.69899 8759	5.06743 4094	6.87279 4	K06129	Pla2g15	phospholipase A2, group XV
ENSMUSG00000032315	0.76881 2919	1.66899 4376	1.30160 1119	8.52304 9765	10.8360 8469	9.29332 0655	K07408	Cyp1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSMUSG00000036880	795.333 9203	766.379 4719	808.361 652	1063.60 2428	1116.74 6467	1042.09 8943	K07508	Acaa2	acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase)
ENSMUSG00000038732	2.56725 2917	2.37994 0582	2.23267 3173	1.22201 9593	1.10403 2396	1.38873 934	K13517	Mboat1	membrane bound O-acyltransferase domain containing 1
ENSMUSG00000041193	13.9968 2865	15.1534 8074	13.7294 0201	10.3282 0841	9.63642 5811	9.01233 3089	K01047	Pla2g5	phospholipase A2, group V
ENSMUSG00000041202	3.90455 4954	2.97323 7437	2.88504 2771	2.14940 379	1.48002 497	1.42597 7282	K01047	Pla2g2d	phospholipase A2, group IID
ENSMUSG00000042010	79.0911 9166	75.4317 3262	74.3710 7502	90.0134 6983	100.105 3414	91.2763 5204	K01946	Acacb	acetyl-Coenzyme A carboxylase beta
ENSMUSG00000047250	7.67552 5704	7.15236 1786	7.48646 6679	10.6346 1185	10.0908 1979	9.05164 1744	K00509	Ptgs1	prostaglandin-endoperoxide synthase 1
ENSMUSG00000050737	0.87115	0.87929	0.86171	1.19430	1.12169	1.27094	K15729	Ptges	prostaglandin E synthase

	969	6053	1028	5777	8471	5752			
ENSMUSG00000052396	1.86005	2.49575	2.32900	1.06083	1.37893	1.36630	K14457	Mogat2	monoacylglycerol O-acyltransferase 2
	2156	1461	9412	1615	2919	1943			
									hydroxyacyl-Coenzyme A
ENSMUSG00000059447	330.706	336.447	355.956	407.222	414.222	427.314	K07509	Hadhb	dehydrogenase/3-ketoacyl-Coenzyme A
	6819	3266	1331	4733	1469	6874			thiolase/enoyl-Coenzyme A hydratase
									(trifunctional protein), beta subunit
ENSMUSG00000061740	16.8594	14.7793	14.6009	25.0362	23.2977	23.3577	K07414	Cyp2d22	cytochrome P450, family 2, subfamily d,
	7001	2283	1549	9213	71	4133			polypeptide 22
ENSMUSG00000063275	20.4653	20.9673	20.2448	13.5950	13.1185	13.0248	K10703	Hacd1	3-hydroxyacyl-CoA dehydratase 1
	4092	2188	7307	8116	8172	5206			
ENSMUSG00000072949	32.8546	35.0159	39.6635	75.2903	80.1070	69.3892	K01068	Acot1	acyl-CoA thioesterase 1
	1548	0604	74	2821	841	2867			
ENSMUSG00000074207	6.32106	5.26486	5.40029	9.83795	8.66423	7.92006	K13951	Adh1	alcohol dehydrogenase 1 (class I)
	4398	0001	8678	7108	3558	9471			
ENSMUSG00000083816	0.44295	0.36183	0.47444	0.11909	0.12384	0.05413		Gm13033	prostaglandin-endoperoxide synthase 2
	8437	6817	4955	6832	7397	807			pseudogene
ENSMUSG00000107653	2.01889	1.87254	1.62336	2.84150	2.96343	2.68471		Gm31520	sterol-C5-desaturase pseudogene
	0619	0227	5506	6626	9039	8979			

Table SVII. The DEGs in the metabolic related pathways of SPM / DbCM.

SPM_vs_DbCM.DEG.kegg.Amino_acid_metabolism

Gene_ID	DbCM-1	DbCM-2	DbCM-3	SPM-1	SPM-2	SPM-3	KEGG_ID	symbol	ncbi_description
ENSMUSG00000001670	0.212017 434	0.4685081 84	0.33732 0069	2.49275 388	1.679611 934	1.284326 567	K00815	Tat	tyrosine aminotransferase
ENSMUSG00000003477	83.92356 779	82.470004 52	74.7046 0531	59.4122 3561	56.89975 689	52.36613 26	K00562	Inmt	indolethylamine N-methyltransferase
ENSMUSG00000003809	30.03356 106	30.008261 39	29.2985 5175	19.9244 392	22.27838 993	23.69464 968	K00252	Gcdh	glutaryl-Coenzyme A dehydrogenase
ENSMUSG00000006442	11.29016 607	10.003893 81	10.1146 9496	7.39689 9276	6.361829 449	7.076654 58	K00797	Srm	spermidine synthase
ENSMUSG00000010651	0.268316 913	0.0968818 08	0.15246 1652	1.23921 3726	0.762470 511	0.395054 936	K07513	Acaa1b	acetyl-Coenzyme A acyltransferase 1B
ENSMUSG00000011752	27.99591 218	28.115269 88	27.6900 1148	18.0774 4718	21.03153 498	23.21857 789	K01834	Pgam1	phosphoglycerate mutase 1
ENSMUSG00000017713	3.468174 246	3.7770920 06	3.43002 7689	2.19299 7025	2.268634 678	2.472339 598	K01620	Tha1	threonine aldolase 1
ENSMUSG00000019987	0.068184 348	0.1329451 91	0.07748 6717	3.03660 6997	1.361031 96	0.107561 625	K01476	Arg1	arginase, liver
ENSMUSG00000020182	1.285053 64	1.2163035 66	1.71558 3936	1.09644 8865	0.638162 881	0.519589 81	K01593	Ddc	dopa decarboxylase
ENSMUSG00000021033	15.54590 768	14.567953 01	14.1881 4333	11.8124 0455	10.82534 719	10.70988 445	K01800	Gstz1	glutathione transferase zeta 1 (maleylacetoacetate isomerase)
ENSMUSG00000021913	75.04430 554	90.479629 78	78.4196 9994	54.4279 8721	61.25089 362	64.76783 255	K00164	Ogdhl	oxoglutarate dehydrogenase-like
ENSMUSG00000022546	14.84226 008	15.861466 04	13.6121 1416	8.48814 6822	9.185539 896	10.98028 505	K00814	Gpt	glutamic pyruvic transaminase, soluble
ENSMUSG00000022821	0	0	0	0.38649	0.258367	0.018668	K00451	Hgd	homogentisate 1, 2-dioxygenase

				2392	168	451			
ENSMUSG00000022853	15.63326	14.952610	12.8806	8.10451	9.124829	10.40293	K07514	Ehhadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
	306	13	6551	834	551	03			
ENSMUSG00000023262	8.000565	8.4377527	7.89295	4.98076	6.015402	6.405309	K14677	Acy1	aminoacylase 1
	056	09	7268	5764	502	053			
ENSMUSG00000024087	6.348274	5.3416978	5.78042	9.07859	9.016305	8.724137	K07410	Cyp1b1	cytochrome P450, family 1, subfamily b, polypeptide 1
	56	63	1416	0363	909	169			
ENSMUSG00000024885	3.276376	2.6181339	3.12824	3.81131	4.255016	4.202601	K00129	Aldh3b1	aldehyde dehydrogenase 3 family, member B1
	086	68	2064	1572	899	932			
ENSMUSG00000025991	0.077049	0.0235655	0.04635	2.32529	1.113912	0.011439	K01948	Cps1	carbamoyl-phosphate synthetase 1
	54	62	6027	2057	321	677			
ENSMUSG00000027332	126.4005	133.95166	118.335	71.5326	85.71991	95.49450	K00253	Ivd	isovaleryl coenzyme A dehydrogenase
	714	32	6733	6195	189	229			
ENSMUSG00000028011	0.007338	0	0.00833	0.98477	0.622525	0.018521	K00453	Tdo2	tryptophan 2,3-dioxygenase
	114		9251	1679	347	541			
ENSMUSG00000028124	2.121739	2.7696756	2.66717	1.16627	1.118375	1.205229	K11205	Gclm	glutamate-cysteine ligase, modifier subunit
	153	28	4167	2965	93	07			
ENSMUSG00000029455	135.7947	143.49974	127.758	101.044	102.2878	103.6116	K00128	Aldh2	aldehyde dehydrogenase 2, mitochondrial
	132		6987	5231	09	91			
ENSMUSG00000029482	1.834451	2.2430755	2.34973	1.50471	1.570988	1.500888	K01907	Aacs	acetoacetyl-CoA synthetase
	559	67	2648	5799	158	154			
ENSMUSG00000029545	172.6801	185.21388	160.116	112.906	127.9071	136.7384	K00248	Acads	acyl-Coenzyme A dehydrogenase, short chain
	043	9	7145	3718	286	42			
ENSMUSG00000030630	15.72574	18.314549	14.4233	8.73432	8.897867	9.040971	K01555	Fah	fumarylacetoacetate hydrolase
	109	13	212	9049	191	961			
ENSMUSG00000030826	58.66584	64.824292	57.4026	38.4496	42.57943	45.60694	K00826	Bcat2	branched chain aminotransferase 2, mitochondrial
	049	51	7908	0243	072	58			
ENSMUSG00000031173	0	0.0109198	0.00954	0.32923	0.272493	0.021203	K00611	Otc	ornithine transcarbamylase
		11	687	426	062	673			
ENSMUSG00000032263	28.73970	30.333661	29.9486	20.8513	23.07374	22.52340	K00167	Bckdhb	branched chain ketoacid dehydrogenase E1, beta polypeptide

	25	16	1596	6804	494	434			
ENSMUSG00000032315	8.523049	10.836084	9.29332	35.5656	22.02314	11.06247	K07408	Cyp1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
	765	69	0655	8992	951	986			
ENSMUSG00000032374	4.543282	3.7613786	4.56166	5.80377	6.422642	6.566392	K13645	Plod2	procollagen lysine, 2-oxoglutarate 5-dioxygenase 2
	417	53	8178	4188	426	034			
ENSMUSG00000032527	78.97135	83.227319	80.1751	55.0323	60.36960	64.94435	K01966	Pccb	propionyl Coenzyme A carboxylase, beta polypeptide
	381	03	8	0644	471	558			
ENSMUSG00000034807	27.23394	27.818183	28.8974	20.0082	21.00860	22.19304	K11703	Colgalt1	collagen beta(1-O)galactosyltransferase 1
	356	65	6528	2591	334	56			
ENSMUSG00000037798	0.036299	0.0094367	0.03300	2.63827	1.123081	0.018323	K00789	Mat1a	methionine adenosyltransferase I, alpha
	121	57	1119	5608	934	935			
ENSMUSG00000044986	7.955686	7.0474836	6.76994	5.26920	5.642598	5.116616	K01011	Tst	thiosulfate sulfurtransferase, mitochondrial
	487	69	2032	319	205	235			
ENSMUSG00000057880	3.024941	3.3460836	3.04264	1.78009	2.127428	2.193180	K13524	Abat	4-aminobutyrate aminotransferase
	367	41	4793	6226	953	612			
ENSMUSG00000059422	3.458964	5.3681556	4.31204	3.80913	9.389020	8.307196		Gm8116	predicted gene 8116
	701	18	5452	3976	47	581			
ENSMUSG00000060376	74.62966	78.464744	64.5464	46.0237	52.59821	55.08111	K00166	Bckdha	branched chain ketoacid dehydrogenase E1, alpha polypeptide
	241	32	3491	1538	428	32			
ENSMUSG00000071711	38.73505	31.531861	29.1016	23.8453	23.40076	22.49353	K01011	Mpst	mercaptopyruvate sulfurtransferase
	915	61	2161	1588	771	498			
ENSMUSG00000080845	0.522965	0.2185015	0.25470	0.08872	0.023301	0		Gm9115	ornithine decarboxylase, structural 1 pseudogene
	853	37	5965	5391	236				

SPM_vs_DbCM.DEG.kegg.Lipid_metabolism

Gene_ID	DbCM-1	DbCM-2	DbCM-3	SPM-1	SPM-2	SPM-3	KEGG_ID	symbol	ncbi_description
ENSMUSG00000003053	0	0	0	1.50455	0.86817	0.01125	K07413	Cyp2c29	cytochrome P450, family 2, subfamily c, polypeptide 29
				8781	3325	9286			
ENSMUSG00000003809	30.03356	30.0082	29.29855	19.9244	22.2783	23.6946	K00252	Gcdh	glutaryl-Coenzyme A dehydrogenase

	106	6139	175	392	8993	4968			
ENSMUSG00000004270	35.32004	34.5195	33.92923	25.5407	25.8375	26.6990	K13515	Lpcat3	lysophosphatidylcholine acyltransferase 3
	515	392	888	6111	2559	1644			
ENSMUSG000000010651	0.268316	0.09688	0.152461	1.23921	0.76247	0.39505	K07513	Acaa1b	acetyl-Coenzyme A acyltransferase 1B
	913	1808	652	3726	0511	4936			
ENSMUSG000000018924	0.020902	0.01358	0.023754	0.38477	0.16950	0.14508	K00460	Alox15	arachidonate 15-lipoxygenase
	508	517	23	1342	2223	5407			
ENSMUSG000000020333	1.586844	2.06831	1.749138	0.96286	1.18457	1.61412	K01897	Acsl6	acyl-CoA synthetase long-chain family member 6
	798	2309	864	9888	1102	8244			
ENSMUSG000000021273	32.38024	31.3991	28.24058	23.3349	22.9332	23.1815	K00801	Fdft1	farnesyl diphosphate farnesyl transferase 1
	514	9997	704	6987	551	7212			
ENSMUSG000000021364	0.039339	0	0	0.31146	0.16359	0.00827	K10205	Elovl2	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 2
	172			3093	4092	4402			
ENSMUSG000000022853	15.63326	14.9526	12.88066	8.10451	9.12482	10.4029	K07514	Ehhadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
	306	1013	551	834	9551	303			
ENSMUSG000000022947	5.960725	4.72718	5.086572	3.78228	3.59739	3.47609	K00084	Cbr3	carbonyl reductase 3
	199	6331	462	0017	2139	7545			
ENSMUSG000000024087	6.348274	5.34169	5.780421	9.07859	9.01630	8.72413	K07410	Cyp1b1	cytochrome P450, family 1, subfamily b, polypeptide 1
	56	7863	416	0363	5909	7169			
ENSMUSG000000024978	67.58124	69.4075	66.51984	39.6774	51.8938	61.3086	K00629	Gpam	glycerol-3-phosphate acyltransferase, mitochondrial
	882	3771	384	0692	22	556			
ENSMUSG000000025059	3.608326	2.81268	3.724830	5.36692	4.94310	4.72944	K00864	Gk	glycerol kinase
	67	4246	209	5327	4809	9968			
ENSMUSG000000025495	10.60160	10.8998	9.529428	6.79030	6.86445	6.68089	K08730	Ptdss2	phosphatidylserine synthase 2
	302	6099	231	7954	1443	4741			
ENSMUSG000000025509	463.8335	474.193	426.5091	315.942	324.092	335.409	K16816	Pnpla2	patatin-like phospholipase domain containing 2
	701	9309	009	4659	0493	2728			
ENSMUSG000000026675	3.613881	4.25758	3.666451	5.54312	5.13512	4.77432	K13373	Hsd17b7	hydroxysteroid (17-beta) dehydrogenase 7
	301	9931	502	4598	349	2844			
ENSMUSG000000027195	10.49706	8.25909	8.935599	14.1013	13.8884	13.1137	K10251	Hsd17b12	hydroxysteroid (17-beta) dehydrogenase 12
	455	7692	494	1958	6753	5275			

ENSMUSG00000027999	21.23053 09	22.4995 8879	20.46444 385	15.1201 1741	14.4452 7085	15.3558 7438	K01047	Pla2g12a	phospholipase A2, group XIA
ENSMUSG00000028597	10.60601 179	7.84526 1794	8.323885 793	6.68062 9624	6.43309 3362	6.82801 8651	K00432	Gpx7	glutathione peroxidase 7
ENSMUSG00000029233	4.672501 342	4.03923 8217	4.691332 034	5.17197 0922	6.18297 2391	6.09711 6196	K12345	Srd5a3	steroid 5 alpha-reductase 3
ENSMUSG00000029455	135.7947 132	143.499 74	127.7586 987	101.044 5231	102.287 809	103.611 691	K00128	Aldh2	aldehyde dehydrogenase 2, mitochondrial
ENSMUSG00000029545	172.6801 043	185.213 889	160.1167 145	112.906 3718	127.907 1286	136.738 442	K00248	Acads	acyl-Coenzyme A dehydrogenase, short chain
ENSMUSG00000030747	196.1518 614	216.890 1764	193.6430 814	155.424 214	153.578 8358	155.005 6697	K11160	Dgat2	diacylglycerol O-acyltransferase 2
ENSMUSG00000030760	0.588353 055	0.43289 2521	0.514712 69	0.87275 5841	0.70077 1307	0.63323 2551	K04711	Acer3	alkaline ceramidase 3
ENSMUSG00000031278	1.869206 737	1.85327 1914	2.026681 215	2.44640 1019	2.52232 3457	2.58763 1207	K01897	Acsl4	acyl-CoA synthetase long-chain family member 4
ENSMUSG00000032315	8.523049 765	10.8360 8469	9.293320 655	35.5656 8992	22.0231 4951	11.0624 7986	K07408	Cyp1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSMUSG00000036833	16.01929 28	17.3559 1409	16.79775 541	10.1438 7251	10.4995 0853	11.5916 1996	K14676	Pnpla7	patatin-like phospholipase domain containing 7
ENSMUSG00000038173	2.188429 454	1.17210 2229	1.134116 32	1.90713 1758	2.48373 3565	2.86410 854	K08743	Enpp6	ectonucleotide pyrophosphatase/phosphodiesterase 6
ENSMUSG00000040774	4.026183 956	4.23330 1192	5.673588 953	6.84289 0632	6.92048 3557	6.57153 3688	K13644	Cept1	choline/ethanolaminephosphotransferase 1
ENSMUSG00000041193	10.32820 841	9.63642 5811	9.012333 089	5.02912 8835	6.83364 4699	7.55128 6606	K01047	Pla2g5	phospholipase A2, group V
ENSMUSG00000041202	2.149403 79	1.48002 497	1.425977 282	0.46913 4995	0.76822 0342	0.83576 4252	K01047	Pla2g2d	phospholipase A2, group IID
ENSMUSG00000046598	7.229848 155	8.55944 3357	4.479103 478	1.00235 5607	2.32446 4065	3.97924 9472	K00019	Bdh1	3-hydroxybutyrate dehydrogenase, type 1
ENSMUSG00000050195	20.69911	25.8764	20.63246	33.0659	30.4979	28.5828	K00507	Scd4	stearoyl-coenzyme A desaturase 4

	59	4507	725	6201	7667	7842			
ENSMUSG00000050737	1.194305	1.12169	1.270945	0.80346	0.80096	0.80153	K15729	Ptges	prostaglandin E synthase
	777	8471	752	7172	9594	0238			
ENSMUSG00000052160	0.150000	0.11998	0.104901	0.63034	0.35987	0.24754	K16860	Pld4	phospholipase D family, member 4
	877	7808	815	877	7013	9482			
ENSMUSG00000057342	8.408914	9.67595	8.241666	5.78963	6.25899	6.67176	K04718	Sphk2	sphingosine kinase 2
	416	3117	697	1873	5616	1435			
ENSMUSG00000068086	0	0	0.050137	2.60231	1.17420	0.01855	K07414	Cyp2d9	cytochrome P450, family 2, subfamily d, polypeptide 9
			798	7802	8063	9407			
ENSMUSG00000071072	15.20695	14.4815	16.59494	20.2127	20.9976	19.6838	K15730	Ptges3	prostaglandin E synthase 3
	048	5351	266	0886	2892	097			
ENSMUSG00000072949	75.29032	80.1070	69.38922	57.0660	54.2974	50.2566	K01068	Acot1	acyl-CoA thioesterase 1
	821	841	867	4613	6144	8547			
ENSMUSG00000083816	0.119096	0.12384	0.054138	0.39603	0.56460	0.57114		Gm13033	prostaglandin-endoperoxide synthase 2 pseudogene
	832	7397	07	2542	856	5107			
ENSMUSG00000094806	0.015277	0.01985	0.017361	1.27004	0.60990	0.01928		Cyp2d10	cytochrome P450, family 2, subfamily d, polypeptide 10
	349	8419	632	3679	4188	016			

Table SVIII. KEGG analysis of the DEPs in DbCM compared to CK.

class_A	class_B	Term	ID	Input number	Background number	P-Value	Input
Human Diseases	Immune diseases	Systemic lupus erythematosus	mmu05322	10	149	3.39E-10	ENSMUSG00000100210 ENSMUSG00000074403 ENSMUSG00000099583 ENSMUSG00000081058 ENSMUSG00000069267 ENSMUSG00000093769 ENSMUSG00000069273 ENSMUSG00000035031 ENSMUSG00000073421 ENSMUSG00000069310
Human Diseases	Substance dependence	Alcoholism	mmu05034	10	204	6.04E-09	ENSMUSG00000100210 ENSMUSG00000099583 ENSMUSG000040147 ENSMUSG00000081058 ENSMUSG00000069267 ENSMUSG00000093769 ENSMUSG00000069273 ENSMUSG00000074403 ENSMUSG00000004936 ENSMUSG00000069310
Human Diseases	Cancers: Overview	Transcriptional misregulation in cancer	mmu05202	9	180	3.03E-08	ENSMUSG00000100210 ENSMUSG00000048416 ENSMUSG00000099583 ENSMUSG00000081058 ENSMUSG00000069267 ENSMUSG00000093769 ENSMUSG00000069273 ENSMUSG00000074403 ENSMUSG00000069310
Cellular Processes	Transport and catabolism	Peroxisome	mmu04146	7	83	3.79E-08	ENSMUSG00000028603 ENSMUSG00000027187 ENSMUSG00000022040 ENSMUSG00000003623 ENSMUSG00000020777 ENSMUSG000000031767 ENSMUSG000000053898
Metabolism	Global and overview maps	Metabolic pathways	mmu01100	20	1298	5.52E-08	ENSMUSG000000059447 ENSMUSG00000028603 ENSMUSG00000021456 ENSMUSG00000040147 ENSMUSG00000022040 ENSMUSG000000019326 ENSMUSG00000000326 ENSMUSG00000024525 ENSMUSG00000027875 ENSMUSG00000061838 ENSMUSG00000071708 ENSMUSG00000021048 ENSMUSG00000020777 ENSMUSG000000039682 ENSMUSG000000072949 ENSMUSG000000021226 ENSMUSG000000032315 ENSMUSG000000017715 ENSMUSG000000003526 ENSMUSG000000030682
Organismal Systems	Endocrine system	PPAR signaling pathway	mmu03320	6	85	9.83E-07	ENSMUSG00000028603 ENSMUSG00000027875 ENSMUSG000000011305 ENSMUSG00000020777 ENSMUSG00000024900 EN

							SMUSG00000062515
Metabolism	Amino acid metabolism	Tryptophan metabolism	mmu00380	4	47	3.46E-05	ENSMUSG00000032315 ENSMUSG00000040147 ENSMUSG0000003477 ENSMUSG00000027187
Metabolism	Amino acid metabolism	Arginine and proline metabolism	mmu00330	4	51	4.66E-05	ENSMUSG00000071708 ENSMUSG00000040147 ENSMUSG0000039682 ENSMUSG00000003526
Metabolism	Metabolism of other amino acids	Glutathione metabolism	mmu00480	4	57	7.02E-05	ENSMUSG00000071708 ENSMUSG00000004035 ENSMUSG0000058135 ENSMUSG00000039682
Organismal Systems	Circulatory system	Vascular smooth muscle contraction	mmu04270	5	128	0.000122047	ENSMUSG00000004936 ENSMUSG00000035783 ENSMUSG0000018830 ENSMUSG00000019254 ENSMUSG00000090841
Metabolism	Lipid metabolism	Fatty acid elongation	mmu00062	3	27	0.000170076	ENSMUSG00000021226 ENSMUSG00000072949 ENSMUSG0000059447
Metabolism	Lipid metabolism	Biosynthesis of unsaturated fatty acids	mmu01040	3	28	0.000187806	ENSMUSG00000021226 ENSMUSG00000072949 ENSMUSG0000020777
Organismal Systems	Endocrine system	Oxytocin signaling pathway	mmu04921	5	158	0.000314151	ENSMUSG00000004936 ENSMUSG00000020122 ENSMUSG0000019254 ENSMUSG00000090841 ENSMUSG00000028944
Organismal Systems	Immune system	Complement and coagulation cascades	mmu04610	4	87	0.00033087	ENSMUSG00000092511 ENSMUSG00000059481 ENSMUSG0000035031 ENSMUSG00000072849
Human Diseases	Cancers: Overview	Chemical carcinogenesis	mmu05204	4	93	0.000421887	ENSMUSG00000058135 ENSMUSG00000004035 ENSMUSG0000030711 ENSMUSG00000032315
Metabolism	Amino acid metabolism	Tyrosine metabolism	mmu00350	3	40	0.000499671	ENSMUSG00000019326 ENSMUSG00000040147 ENSMUSG00000000326
Environmental Information	Signal transduction	HIF-1 signaling pathway	mmu04066	4	110	0.000775272	ENSMUSG00000004936 ENSMUSG00000020122 ENSMUSG0000041616 ENSMUSG00000022797

Processing							
Metabolism	Lipid metabolism	Fatty acid degradation	mmu00071	3	49	0.000873997	ENSMUSG00000024900 ENSMUSG00000020777 ENSMUSG00000059447
Metabolism	Global and overview maps	Fatty acid metabolism	mmu01212	3	52	0.00102943	ENSMUSG00000024900 ENSMUSG00000020777 ENSMUSG00000059447
Human Diseases	Infectious diseases: Bacterial	Staphylococcus aureus infection	mmu05150	3	53	0.001084864	ENSMUSG000000092511 ENSMUSG000000073421 ENSMUSG00000059481
Environmental Information Processing	Signal transduction	FoxO signaling pathway	mmu04068	4	135	0.001615069	ENSMUSG00000004936 ENSMUSG00000020122 ENSMUSG00000028944 ENSMUSG00000027187
Metabolism	Xenobiotics biodegradation and metabolism	Metabolism of xenobiotics by cytochrome P450	mmu00980	3	65	0.001900942	ENSMUSG000000058135 ENSMUSG00000004035 ENSMUSG00000032315
Human Diseases	Cancers: Overview	Central carbon metabolism in cancer	mmu05230	3	66	0.001982178	ENSMUSG00000004936 ENSMUSG00000020122 ENSMUSG00000025486
Metabolism	Xenobiotics biodegradation and metabolism	Drug metabolism - cytochrome P450	mmu00982	3	67	0.002065546	ENSMUSG00000004035 ENSMUSG00000040147 ENSMUSG00000058135
Metabolism	Energy metabolism	Nitrogen metabolism	mmu00910	2	17	0.002092773	ENSMUSG00000027559 ENSMUSG00000000805
Metabolism	Amino acid metabolism	Phenylalanine metabolism	mmu00360	2	24	0.00391278	ENSMUSG00000019326 ENSMUSG00000040147
Cellular Processes	Cellular community - eukaryotes	Gap junction	mmu04540	3	86	0.004078646	ENSMUSG00000004936 ENSMUSG00000020122 ENSMUSG00000001525
Metabolism	Lipid metabolism	Steroid hormone	mmu00140	3	87	0.00420835	ENSMUSG000000061740 ENSMUSG00000032315 ENSMUSG00000000326

Organismal Systems	Development	biosynthesis					
		Dorso-ventral axis formation	mmu04320	2	26	0.004529612	ENSMUSG00000004936 ENSMUSG00000020122
Human Diseases	Cancers: Specific types	Thyroid cancer	mmu05216	2	29	0.005533184	ENSMUSG00000004936 ENSMUSG00000006005
		Metabolism of other amino acids	mmu00410	2	33	0.007014235	ENSMUSG00000071708 ENSMUSG00000019326
Human Diseases	Neurodegenerative diseases	Prion diseases	mmu05020	2	34	0.007409518	ENSMUSG00000004936 ENSMUSG00000035031
Human Diseases	Endocrine and metabolic diseases	Insulin resistance	mmu04931	3	111	0.008094679	ENSMUSG00000028944 ENSMUSG00000024900 ENSMUSG0000033083
Cellular Processes	Cell motility	Regulation of actin cytoskeleton	mmu04810	4	218	0.008511253	ENSMUSG00000004936 ENSMUSG00000020122 ENSMUSG0000019254 ENSMUSG00000026879
Metabolism	Global and overview maps	Carbon metabolism	mmu01200	3	118	0.009520465	ENSMUSG00000061838 ENSMUSG00000021456 ENSMUSG0000027187
Metabolism	Amino acid metabolism	Glycine, serine and threonine metabolism	mmu00260	2	41	0.010448342	ENSMUSG00000019326 ENSMUSG00000040147
Human Diseases	Cancers: Specific types	Bladder cancer	mmu05219	2	41	0.010448342	ENSMUSG00000004936 ENSMUSG00000020122
Environmental Information Processing	Signal transduction	AMPK signaling pathway	mmu04152	3	129	0.012039565	ENSMUSG00000028944 ENSMUSG00000024900 ENSMUSG0000021456
Organismal Systems	Nervous system	Serotonergic synapse	mmu04726	3	133	0.013041415	ENSMUSG00000004936 ENSMUSG00000061740 ENSMUSG0000040147
Organismal Systems	Endocrine system	Insulin signaling pathway	mmu04910	3	142	0.015465233	ENSMUSG00000004936 ENSMUSG00000028944 ENSMUSG0000021456

Human Diseases	Cancers: Specific types	Endometrial cancer	mmu05213	2	52	0.016139381	ENSMUSG00000004936 ENSMUSG000000020122
Metabolism	Amino acid metabolism	Valine, leucine and isoleucine degradation	mmu00280	2	56	0.018470895	ENSMUSG000000027875 ENSMUSG000000059447
Human Diseases	Cancers: Specific types	Non-small cell lung cancer	mmu05223	2	56	0.018470895	ENSMUSG00000004936 ENSMUSG000000020122
Organismal Systems	Endocrine system	Ovarian steroidogenesis	mmu04913	2	58	0.019686749	ENSMUSG000000021226 ENSMUSG000000032315
Organismal Systems	Aging	Longevity regulating pathway - multiple species	mmu04213	2	64	0.023528382	ENSMUSG000000028944 ENSMUSG000000027187
Human Diseases Genetic	Cancers: Specific types	Glioma	mmu05214	2	65	0.024196276	ENSMUSG00000004936 ENSMUSG000000020122
Information Processing	Translation	RNA transport	mmu03013	3	170	0.024528659	ENSMUSG00000006005 ENSMUSG000000069049 ENSMUSG000000067194
Human Diseases	Cancers: Specific types	Pancreatic cancer	mmu05212	2	66	0.024871892	ENSMUSG00000004936 ENSMUSG000000020122
Human Diseases	Infectious diseases: Viral	Influenza A	mmu05164	3	172	0.025264744	ENSMUSG00000004936 ENSMUSG000000073421 ENSMUSG000000059481
Metabolism	Carbohydrate metabolism	Inositol phosphate metabolism	mmu00562	2	70	0.027650321	ENSMUSG000000030682 ENSMUSG000000024525
Human Diseases	Cancers: Specific types	Melanoma	mmu05218	2	72	0.029084244	ENSMUSG00000004936 ENSMUSG000000020122
Organismal Systems	Endocrine system	Adipocytokine signaling	mmu04920	2	73	0.029812167	ENSMUSG000000028944 ENSMUSG000000024900

		pathway					
Human Diseases	Endocrine and metabolic diseases	Type I diabetes mellitus	mmu04940	2	77	0.032795534	ENSMUSG000000037852 ENSMUSG000000073421
Cellular Processes	Transport and catabolism	Phagosome	mmu04145	3	192	0.033273867	ENSMUSG000000073421 ENSMUSG000000022797 ENSMUSG00000001525
Human Diseases	Drug resistance: Antineoplastic	Platinum drug resistance	mmu01524	2	78	0.033558994	ENSMUSG000000004035 ENSMUSG000000058135
Organismal Systems	Circulatory system	Cardiac muscle contraction	mmu04260	2	80	0.035106644	ENSMUSG000000061086 ENSMUSG000000053093
Human Diseases	Drug resistance: Antineoplastic	EGFR tyrosine kinase inhibitor resistance	mmu01521	2	82	0.036681542	ENSMUSG000000004936 ENSMUSG000000020122
Cellular Processes	Cellular community - eukaryotes	Focal adhesion	mmu04510	3	203	0.038176935	ENSMUSG000000004936 ENSMUSG000000020122 ENSMUSG000000019254
Human Diseases	Cardiovascular diseases	Hypertrophic cardiomyopathy (HCM)	mmu05410	2	84	0.038283226	ENSMUSG000000028944 ENSMUSG000000053093
Human Diseases	Cancers: Overview	Proteoglycans in cancer	mmu05205	3	208	0.040520881	ENSMUSG000000004936 ENSMUSG000000020122 ENSMUSG000000019254
Environmental Information Processing	Signal transduction	ErbB signaling pathway	mmu04012	2	87	0.040734976	ENSMUSG000000004936 ENSMUSG000000020122
Organismal Systems	Endocrine system	GnRH signaling pathway	mmu04912	2	88	0.041565127	ENSMUSG000000004936 ENSMUSG000000020122
Metabolism	Metabolism of cofactors and vitamins	Ubiquinone and other terpenoid-quinone	mmu00130	1	11	0.042151076	ENSMUSG000000003849

Metabolism	Lipid metabolism	biosynthesis Synthesis and degradation of ketone bodies	mmu00072	1	11	0.042151076	ENSMUSG000000027875
Human Diseases	Cancers: Specific types	Prostate cancer	mmu05215	2	89	0.042401634	ENSMUSG00000004936 ENSMUSG000000020122
Organismal Systems	Immune system	Fc gamma R-mediated phagocytosis	mmu04666	2	90	0.043244443	ENSMUSG00000004936 ENSMUSG000000026879
Metabolism	Lipid metabolism	Glycerophospholipid metabolism	mmu00564	2	94	0.046677598	ENSMUSG000000030682 ENSMUSG000000017715
Human Diseases	Drug resistance: Antineoplastic	Endocrine resistance	mmu01522	2	95	0.047551094	ENSMUSG00000004936 ENSMUSG000000020122
Organismal Systems	Aging	Longevity regulating pathway	mmu04211	2	96	0.048430565	ENSMUSG000000028944 ENSMUSG000000027187
Human Diseases	Cardiovascular diseases	Viral myocarditis	mmu05416	2	96	0.048430565	ENSMUSG000000073421 ENSMUSG000000053093
Environmental Information Processing	Signal transduction	Phosphatidylinositol signaling system	mmu04070	2	97	0.049315958	ENSMUSG000000030682 ENSMUSG000000024525
Organismal Systems	Immune system	Antigen processing and presentation	mmu04612	2	98	0.050207221	ENSMUSG000000073421 ENSMUSG000000024308
Organismal Systems	Endocrine system	Estrogen signaling pathway	mmu04915	2	98	0.050207221	ENSMUSG00000004936 ENSMUSG000000020122
Human Diseases	Cancers: Overview	Choline metabolism in cancer	mmu05231	2	101	0.052915695	ENSMUSG00000004936 ENSMUSG000000020122

Organismal Systems	Endocrine system	Glucagon signaling pathway	mmu04922	2	102	0.053829909	ENSMUSG000000028944 ENSMUSG000000024900
Metabolism	Lipid metabolism	Primary bile acid biosynthesis	mmu00120	1	16	0.059188981	ENSMUSG000000028603
Metabolism	Metabolism of other amino acids	Selenocompound metabolism	mmu00450	1	17	0.062560281	ENSMUSG000000003477
Human Diseases	Infectious diseases: Parasitic	Toxoplasmosis	mmu005145	2	113	0.064245281	ENSMUSG000000073421 ENSMUSG000000046879
Organismal Systems	Endocrine system	Thyroid hormone signaling pathway	mmu004919	2	117	0.068187943	ENSMUSG000000004936 ENSMUSG000000033083
Metabolism	Metabolism of cofactors and vitamins	One carbon pool by folate	mmu00670	1	19	0.069266941	ENSMUSG000000021048
Cellular Processes	Transport and catabolism	Lysosome	mmu004142	2	124	0.075273294	ENSMUSG000000004207 ENSMUSG000000030894
Organismal Systems	Excretory system	Proximal tubule bicarbonate reclamation	mmu004964	1	22	0.079237715	ENSMUSG000000000805
Metabolism	Metabolism of terpenoids and polyketides	Terpenoid backbone biosynthesis	mmu00900	1	24	0.085825909	ENSMUSG000000027875
Organismal Systems	Nervous system	Dopaminergic synapse	mmu004728	2	135	0.086851681	ENSMUSG000000040147 ENSMUSG000000000326
Metabolism	Lipid	alpha-Linolenic	mmu0	1	25	0.0891024	ENSMUSG000000020777

	metabolism	acid metabolism	0592			34	
Human Diseases	Immune diseases	Asthma	mmu05310	1	26	0.0923673	ENSMUSG00000073421
Metabolism	Amino acid metabolism	Histidine metabolism	mmu00340	1	26	0.0923673	ENSMUSG00000040147
Cellular Processes	Cellular community - eukaryotes	Tight junction	mmu04530	2	141	0.093378096	ENSMUSG00000018830 ENSMUSG00000053093
Metabolism	Carbohydrate metabolism	Butanoate metabolism	mmu00650	1	27	0.095620548	ENSMUSG00000027875
Environmental Information Processing	Signal transduction	Phospholipase D signaling pathway	mmu04072	2	146	0.098922017	ENSMUSG00000004936 ENSMUSG00000020122
Metabolism	Carbohydrate metabolism	Glyoxylate and dicarboxylate metabolism	mmu00630	1	30	0.105310991	ENSMUSG00000027187
Organismal Systems	Circulatory system	Adrenergic signaling in cardiomyocytes	mmu04261	2	152	0.105693452	ENSMUSG00000061086 ENSMUSG00000053093
Metabolism	Carbohydrate metabolism	Pentose phosphate pathway	mmu00030	1	31	0.108518176	ENSMUSG00000021456
Organismal Systems	Environmental adaptation	Circadian rhythm	mmu04710	1	31	0.108518176	ENSMUSG00000028944
Metabolism	Carbohydrate metabolism	Propanoate metabolism	mmu00640	1	31	0.108518176	ENSMUSG00000061838
Genetic Information Processing	Folding, sorting and degradation	Protein export	mmu03060	1	31	0.108518176	ENSMUSG00000000959

Metabolism	Carbohydrate metabolism	Citrate cycle (TCA cycle)	mmu00020	1	32	0.111713945	ENSMUSG000000061838
Metabolism	Carbohydrate metabolism	Fructose and mannose metabolism	mmu00051	1	35	0.121233171	ENSMUSG000000021456
Environmental Information Processing	Signal transduction	cGMP-PKG signaling pathway	mmu04022	2	173	0.130297889	ENSMUSG00000004936 ENSMUSG000000053093
Environmental Information Processing	Signal transduction	PI3K-Akt signaling pathway	mmu04151	3	350	0.133701313	ENSMUSG00000004936 ENSMUSG000000020122 ENSMUSG00000057672
Organismal Systems	Immune system	Intestinal immune network for IgA production	mmu04672	1	44	0.149187403	ENSMUSG000000073421
Genetic Information Processing	Folding, sorting and degradation	Proteasome	mmu03050	1	45	0.152238405	ENSMUSG000000005625
Environmental Information Processing	Signal transduction	cAMP signaling pathway	mmu04024	2	198	0.161073204	ENSMUSG00000004936 ENSMUSG000000020777
Human Diseases	Substance dependence	Cocaine addiction	mmu05030	1	49	0.164334174	ENSMUSG000000040147
Metabolism	Amino acid metabolism	Cysteine and methionine metabolism	mmu00270	1	49	0.164334174	ENSMUSG000000071708
Human Diseases	Neurodegenerative diseases	Amyotrophic lateral sclerosis (ALS)	mmu05014	1	52	0.173293414	ENSMUSG000000027187
Human Diseases	Cancers: Overview	Pathways in cancer	mmu05200	3	398	0.174367982	ENSMUSG00000004936 ENSMUSG000000020122 ENSMUSG0000006005

Environmental Information Processing	Signal transduction	Rap1 signaling pathway	mmu04015	2	215	0.182684884	ENSMUSG00000004936 ENSMUSG00000020122
Human Diseases	Cancers: Specific types	Acute myeloid leukemia	mmu05221	1	57	0.188014049	ENSMUSG00000004936
Organismal Systems	Endocrine system	Regulation of lipolysis in adipocytes	mmu04923	1	57	0.188014049	ENSMUSG00000062515
Human Diseases	Immune diseases	Inflammatory bowel disease (IBD)	mmu05321	1	59	0.19382917	ENSMUSG00000073421
Environmental Information Processing	Signal transduction	VEGF signaling pathway	mmu04370	1	60	0.196721207	ENSMUSG00000004936
Organismal Systems	Nervous system	Long-term depression	mmu04730	1	61	0.199602943	ENSMUSG00000004936
Environmental Information Processing	Signal transduction	Ras signaling pathway	mmu04014	2	231	0.203388786	ENSMUSG00000004936 ENSMUSG00000020122
Human Diseases	Cancers: Specific types	Colorectal cancer	mmu05210	1	64	0.208186713	ENSMUSG00000004936
Organismal Systems	Nervous system	Long-term potentiation	mmu04720	1	66	0.213858388	ENSMUSG00000004936
Metabolism	Carbohydrate metabolism	Glycolysis / Gluconeogenesis	mmu00010	1	66	0.213858388	ENSMUSG00000021456
Human Diseases	Infectious diseases: Parasitic	Leishmaniasis	mmu05140	1	67	0.216679082	ENSMUSG00000073421
Human Diseases	Substance dependence	Amphetamine addiction	mmu05031	1	68	0.219489728	ENSMUSG00000040147

Human Diseases	Cancers: Specific types	Renal cell carcinoma	mmu05211	1	68	0.219489728	ENSMUSG00000004936
Organismal Systems	Immune system	Fc epsilon RI signaling pathway	mmu04664	1	69	0.222290361	ENSMUSG00000004936
Human Diseases	Immune diseases	Allograft rejection	mmu05330	1	72	0.230632538	ENSMUSG00000073421
Human Diseases	Immune diseases	Graft-versus-host disease	mmu05332	1	72	0.230632538	ENSMUSG00000073421
Human Diseases	Cancers: Specific types	Chronic myeloid leukemia	mmu05220	1	73	0.233393474	ENSMUSG00000004936
Environmental Information Processing	Signal transduction	MAPK signaling pathway	mmu04010	2	254	0.233562624	ENSMUSG00000004936 ENSMUSG00000020122
Organismal Systems	Endocrine system	Prolactin signaling pathway	mmu04917	1	74	0.236144572	ENSMUSG00000004936
Cellular Processes	Cellular community - eukaryotes	Adherens junction	mmu04520	1	74	0.236144572	ENSMUSG00000020122
Organismal Systems	Immune system	B cell receptor signaling pathway	mmu04662	1	75	0.238885869	ENSMUSG00000004936
Organismal Systems	Digestive system	Salivary secretion	mmu04970	1	78	0.247051293	ENSMUSG00000027447
Human Diseases	Infectious diseases: Bacterial	Salmonella infection	mmu05132	1	78	0.247051293	ENSMUSG00000057672
Human Diseases	Immune diseases	Rheumatoid arthritis	mmu05323	1	85	0.265767293	ENSMUSG00000073421

Human Diseases	Cancers: Overview	MicroRNAs in cancer	mmu05206	2	281	0.269285847	ENSMUSG00000004936 ENSMUSG00000020122
Organismal Systems	Immune system	Hematopoietic cell lineage	mmu04640	1	87	0.271029372	ENSMUSG00000022797
Human Diseases	Immune diseases	Autoimmune thyroid disease	mmu05320	1	87	0.271029372	ENSMUSG00000073421
Metabolism	Metabolism of cofactors and vitamins	Retinol metabolism	mmu00830	1	89	0.276254008	ENSMUSG00000032315
Metabolism	Lipid metabolism	Arachidonic acid metabolism	mmu00590	1	90	0.278852368	ENSMUSG00000022040
Human Diseases	Cardiovascular diseases	Dilated cardiomyopathy	mmu05414	1	90	0.278852368	ENSMUSG00000053093
Organismal Systems	Endocrine system	Progesterone-mediated oocyte maturation	mmu04914	1	90	0.278852368	ENSMUSG00000004936
Cellular Processes	Transport and catabolism	Endocytosis	mmu04144	2	294	0.286499814	ENSMUSG00000020122 ENSMUSG00000022797
Organismal Systems	Endocrine system	Melanogenesis	mmu04916	1	99	0.30182474	ENSMUSG00000004936
Organismal Systems	Immune system	Toll-like receptor signaling pathway	mmu04620	1	101	0.30683021	ENSMUSG00000004936
Organismal Systems	Immune system	T cell receptor signaling pathway	mmu04660	1	105	0.316734512	ENSMUSG00000004936

Human Diseases	Infectious diseases: Parasitic	Amoebiasis	mmu05146	1	111	0.331328123	ENSMUSG00000035031
Environmental Information Processing	Signal transduction	TNF signaling pathway	mmu04668	1	112	0.333730123	ENSMUSG00000004936
Organismal Systems	Nervous system	Cholinergic synapse	mmu04725	1	113	0.336123557	ENSMUSG00000004936
Cellular Processes	Cell growth and death	Oocyte meiosis	mmu04114	1	116	0.34325276	ENSMUSG00000004936
Organismal Systems	Immune system	Natural killer cell mediated cytotoxicity	mmu04650	1	121	0.354966244	ENSMUSG00000004936
Organismal Systems	Nervous system	Neurotrophin signaling pathway	mmu04722	1	122	0.35728393	ENSMUSG00000004936
Environmental Information Processing	Signal transduction	Sphingolipid signaling pathway	mmu04071	1	125	0.364187498	ENSMUSG00000004936
Organismal Systems	Development	Osteoclast differentiation	mmu04380	1	133	0.38223918	ENSMUSG00000004936
Human Diseases	Infectious diseases: Viral	Hepatitis C	mmu05160	1	137	0.391073272	ENSMUSG00000020122
Cellular Processes	Cell growth and death	Apoptosis	mmu04210	1	139	0.395443169	ENSMUSG00000004936
Cellular Processes	Cellular community - eukaryotes	Signaling pathways regulating pluripotency of stem cells	mmu04550	1	140	0.397616428	ENSMUSG00000004936
Human	Infectious	Hepatitis B	mmu0	1	146	0.4104940	ENSMUSG00000004936

Diseases	diseases: Viral		5161			55	
Human	Neurodegenera	Parkinson's	mmu0	1	149	0.4168299	ENSMUSG00000029223
Diseases	tive diseases	disease	5012			96	
Environmental		mTOR	mmu0			0.4313521	
Information	Signal	signaling	4150	1	156	57	ENSMUSG00000004936
Processing	transduction	pathway					
		Non-alcoholic					
Human	Endocrine and	fatty liver	mmu0	1	157	0.4333972	ENSMUSG00000028944
Diseases	metabolic	disease	4932			29	
	diseases	(NAFLD)					
		Protein					
Genetic	Folding, sorting	processing in	mmu0	1	167	0.4534505	ENSMUSG00000039474
Information	and	endoplasmic	4141			77	
Processing	degradation	reticulum					
Environmental	Signaling	Cell adhesion	mmu0	1	176	0.4708952	ENSMUSG00000073421
Information	molecules and	molecules	4514			73	
Processing	interaction	(CAMs)					
	Infectious						
Human	diseases:	Tuberculosis	mmu0	1	179	0.4765864	ENSMUSG00000073421
Diseases	Bacterial		5152			3	
Environmental							
Information	Signal	Calcium	mmu0	1	182	0.4822168	ENSMUSG00000020122
Processing	transduction	signaling	4020			07	
		pathway					
Organismal		Chemokine	mmu0	1	198	0.5112452	ENSMUSG00000004936
Systems	Immune system	signaling	4062			92	
		pathway					
		Herpes					
Human	Infectious	simplex	mmu0	1	224	0.5550090	ENSMUSG00000073421
Diseases	diseases: Viral	infection	5168			88	
Human	Infectious	Epstein-Barr	mmu0	1	232	0.5676750	ENSMUSG00000005625
Diseases	diseases: Viral	virus infection	5169			69	

Human Diseases	Cancers: Overview	Viral carcinogenesis	mmu05203	1	245	0.587498222	ENSMUSG00000026879
Environmental Information Processing	Signaling molecules and interaction	Cytokine-cytokine receptor interaction	mmu04060	1	265	0.616247095	ENSMUSG00000020122
Environmental Information Processing	Signaling molecules and interaction	Neuroactive ligand-receptor interaction	mmu04080	1	285	0.643005757	ENSMUSG00000059481
Human Diseases	Infectious diseases: Viral	HTLV-I infection	mmu05166	1	295	0.655681896	ENSMUSG00000073421

Table SIX. The DEPs in the metabolic related pathways of DbCM / CK.

class_A	class_B	Term	ID	Input number	Background number	P_Value	Input
Metabolism	Metabolism of other amino acids	Selenocompound metabolism	mmu00450	1	17	0.062560281	ENSMUSG00000003477
Metabolism	Metabolism of cofactors and vitamins	Ubiquinone and other terpenoid-quinone biosynthesis	mmu00130	1	11	0.042151076	ENSMUSG00000003849
Metabolism	Lipid metabolism	alpha-Linolenic acid metabolism	mmu00592	1	25	0.089102434	ENSMUSG000000020777
Metabolism	Metabolism of cofactors and vitamins	One carbon pool by folate	mmu00670	1	19	0.069266941	ENSMUSG000000021048
Metabolism	Carbohydrate metabolism	Pentose phosphate pathway	mmu00030	1	31	0.108518176	ENSMUSG000000021456
Metabolism	Carbohydrate metabolism	Fructose and mannose metabolism	mmu00051	1	35	0.121233171	ENSMUSG000000021456
Metabolism	Carbohydrate metabolism	Glycolysis / Gluconeogenesis	mmu00010	1	66	0.213858388	ENSMUSG000000021456
Metabolism	Lipid metabolism	Arachidonic acid metabolism	mmu00590	1	90	0.278852368	ENSMUSG000000022040
Metabolism	Carbohydrate metabolism	Glyoxylate and dicarboxylate metabolism	mmu00630	1	30	0.105310991	ENSMUSG000000027187
Metabolism	Carbohydrate metabolism	Butanoate metabolism	mmu00650	1	27	0.095620548	ENSMUSG000000027875
Metabolism	Lipid metabolism	Synthesis and degradation of ketone bodies	mmu00072	1	11	0.042151076	ENSMUSG000000027875

Metabolism	Metabolism of terpenoids and polyketides	Terpenoid backbone biosynthesis	mmu00900	1	24	0.085825909	ENSMUSG00000027875
Metabolism	Lipid metabolism	Primary bile acid biosynthesis	mmu00120	1	16	0.059188981	ENSMUSG00000028603
Metabolism	Metabolism of cofactors and vitamins	Retinol metabolism	mmu00830	1	89	0.276254008	ENSMUSG00000032315
Metabolism	Amino acid metabolism	Histidine metabolism	mmu00340	1	26	0.0923673	ENSMUSG00000040147
Metabolism	Carbohydrate metabolism	Propanoate metabolism	mmu00640	1	31	0.108518176	ENSMUSG00000061838
Metabolism	Carbohydrate metabolism	Citrate cycle (TCA cycle)	mmu00020	1	32	0.111713945	ENSMUSG00000061838
Metabolism	Amino acid metabolism	Cysteine and methionine metabolism	mmu00270	1	49	0.164334174	ENSMUSG00000071708
Metabolism	Amino acid metabolism	Phenylalanine metabolism	mmu00360	2	24	0.00391278	ENSMUSG00000019326 ENSMUSG00000040147
Metabolism	Amino acid metabolism	Glycine, serine and threonine metabolism	mmu00260	2	41	0.010448342	ENSMUSG00000019326 ENSMUSG00000040147
Metabolism	Energy metabolism	Nitrogen metabolism	mmu00910	2	17	0.002092773	ENSMUSG00000027559 ENSMUSG0000000805
Metabolism	Amino acid metabolism	Valine, leucine and isoleucine degradation	mmu00280	2	56	0.018470895	ENSMUSG00000027875 ENSMUSG00000059447
Metabolism	Lipid metabolism	Glycerophospholipid metabolism	mmu00564	2	94	0.046677598	ENSMUSG00000030682 ENSMUSG00000017715
Metabolism	Carbohydrate metabolism	Inositol phosphate metabolism	mmu00562	2	70	0.027650321	ENSMUSG00000030682 ENSMUSG00000024525
Metabolism	Metabolism of other amino acids	beta-Alanine metabolism	mmu00410	2	33	0.007014235	ENSMUSG00000071708 ENSMUSG00000019326

Metabolism	Xenobiotics biodegradation and metabolism	Drug metabolism - cytochrome P450	mmu00982	3	67	0.002065546	ENSMUSG00000004035 ENSMUSG000 00040147 ENSMUSG000000058135
Metabolism	Amino acid metabolism	Tyrosine metabolism	mmu00350	3	40	0.000499671	ENSMUSG00000019326 ENSMUSG000 00040147 ENSMUSG00000000326
Metabolism	Lipid metabolism	Biosynthesis of unsaturated fatty acids	mmu01040	3	28	0.000187806	ENSMUSG00000021226 ENSMUSG000 00072949 ENSMUSG00000020777
Metabolism	Lipid metabolism	Fatty acid elongation	mmu00062	3	27	0.000170076	ENSMUSG00000021226 ENSMUSG000 00072949 ENSMUSG00000059447
Metabolism	Global and overview maps	Fatty acid metabolism	mmu01212	3	52	0.00102943	ENSMUSG00000024900 ENSMUSG000 00020777 ENSMUSG00000059447
Metabolism	Lipid metabolism	Fatty acid degradation	mmu00071	3	49	0.000873997	ENSMUSG00000024900 ENSMUSG000 00020777 ENSMUSG00000059447
Metabolism	Xenobiotics biodegradation and metabolism	Metabolism of xenobiotics by cytochrome P450	mmu00980	3	65	0.001900942	ENSMUSG00000058135 ENSMUSG000 00004035 ENSMUSG00000032315
Metabolism	Lipid metabolism	Steroid hormone biosynthesis	mmu00140	3	87	0.00420835	ENSMUSG00000061740 ENSMUSG000 00032315 ENSMUSG00000000326
Metabolism	Global and overview maps	Carbon metabolism	mmu01200	3	118	0.009520465	ENSMUSG00000061838 ENSMUSG000 00021456 ENSMUSG00000027187
Metabolism	Amino acid metabolism	Tryptophan metabolism	mmu00380	4	47	3.46E-05	ENSMUSG00000032315 ENSMUSG000 00040147 ENSMUSG00000003477 EN SMUSG00000027187
Metabolism	Metabolism of other amino acids	Glutathione metabolism	mmu00480	4	57	7.02E-05	ENSMUSG00000071708 ENSMUSG000 00004035 ENSMUSG00000058135 EN SMUSG00000039682
Metabolism	Amino acid metabolism	Arginine and proline metabolism	mmu00330	4	51	4.66E-05	ENSMUSG00000071708 ENSMUSG000 00040147 ENSMUSG00000039682 EN SMUSG00000003526