

**Table S3 41 pathways dysregulated mRNAs were enriched**

PathwayID	PathwayTerm	P-Value	FDR	Enrichment
PATH:04060	Cytokine-cytokine receptor interaction	9.52972E-05	0.026683215	1.634208886
PATH:00140	Steroid hormone biosynthesis	0.000497527	0.056188426	2.297428938
PATH:04974	Protein digestion and absorption	0.000694721	0.056188426	1.978444022
PATH:00830	Retinol metabolism	0.000802692	0.056188426	2.107539404
PATH:05200	Pathways in cancer	0.002692583	0.150784669	1.413266892
PATH:05322	Systemic lupus erythematosus	0.003354369	0.153367826	1.644640569
PATH:05323	Rheumatoid arthritis	0.004363851	0.153367826	1.778072946
PATH:04360	Axon guidance	0.004381938	0.153367826	1.634757233
PATH:00350	Tyrosine metabolism	0.006311375	0.1963539	2.152862832
PATH:00053	Ascorbate and aldarate metabolism	0.007412338	0.207545471	2.46760886
PATH:05217	Basal cell carcinoma	0.010553515	0.263989341	1.903583978
PATH:05205	Proteoglycans in cancer	0.013638893	0.263989341	1.395961584
PATH:00040	Pentose and glucuronate interconversions	0.013790754	0.263989341	2.163163611
PATH:04972	Pancreatic secretion	0.014727869	0.263989341	1.60202612
PATH:04610	Complement and coagulation cascades	0.014988928	0.263989341	1.749617626
PATH:04110	Cell cycle	0.015085105	0.263989341	1.535148369
PATH:04340	Hedgehog signaling pathway	0.020689868	0.32011982	1.784609979
PATH:05034	Alcoholism	0.023034395	0.32011982	1.401249317
PATH:05202	Transcriptional misregulation in cancer	0.023034395	0.32011982	1.401249317
PATH:04022	cGMP-PKG signaling pathway	0.024872294	0.32011982	1.413266892
PATH:04514	Cell adhesion molecules (CAMs)	0.026647341	0.32011982	1.441093504
PATH:04913	Ovarian steroidogenesis	0.02805929	0.32011982	1.772945861
PATH:03320	PPAR signaling pathway	0.030548676	0.32011982	1.631643409
PATH:00982	Drug metabolism - cytochrome P450	0.031446805	0.32011982	1.607756738
PATH:05204	Chemical carcinogenesis	0.032962016	0.32011982	1.566974616
PATH:04151	PI3K-Akt signaling pathway	0.033219345	0.32011982	1.261741541
PATH:00500	Starch and sucrose metabolism	0.033761704	0.32011982	1.699628551
PATH:00360	Phenylalanine metabolism	0.033927247	0.32011982	2.379479972
PATH:05414	Dilated cardiomyopathy	0.034150675	0.32011982	1.533442649
PATH:05218	Melanoma	0.034298552	0.32011982	1.608662516
PATH:00565	Ether lipid metabolism	0.036020217	0.324382739	1.812937121
PATH:04080	Neuroactive ligand-receptor interaction	0.038071642	0.324382739	1.285266554

PATH:04975	Fat digestion and absorption	0.038230823	0.324382739	1.758746066
PATH:04940	Type I diabetes mellitus	0.041667058	0.335695616	1.770775793
PATH:05033	Nicotine addiction	0.045426851	0.335695616	1.784609979
PATH:05416	Viral myocarditis	0.046775495	0.335695616	1.563658267
PATH:04510	Focal adhesion	0.047561277	0.335695616	1.310438245
PATH:05412	Arrhythmogenic right ventricular cardiomyopathy (ARVC)	0.047610335	0.335695616	1.543446468
PATH:02010	ABC transporters	0.047918119	0.335695616	1.730530889
PATH:00330	Arginine and proline metabolism	0.048859865	0.335695616	1.613206761
PATH:04970	Salivary secretion	0.049826432	0.335695616	1.480565316