|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table S7-1. Results of GSEA analysis. | | | |  |  |  |  |  |  |  |
| ID | Description | setSize | enrichmentScore | NES | pvalue | p.adjust | qvalue | rank | leading\_edge | core\_enrichment |
| hsa04740 | Olfactory transduction | 338 | 0.635848994 | 2.978702067 | 1.00E-10 | 1.69E-08 | 1.18E-08 | 2332 | tags=48%, list=16%, signal=41% | 403273/219482/219428/390271/81309/441608/119678/26341/127062/26737/26333/390162/219958/26212/23538/120776/390077/401665/5137/340980/79324/219870/282775/441670/390190/391109/390264/26189/81300/390054/120787/256148/128371/390437/401667/219957/390079/442186/5136/442361/390064/283189/390648/81797/138804/26689/219437/390083/392390/391196/401992/390260/138802/390037/390144/26707/128367/338751/144124/390892/390326/8392/219493/138881/219432/401994/51764/122740/26534/390038/390429/5138/81328/403284/219981/440153/390093/392376/343406/390157/26494/119679/254973/26496/120775/219477/392392/441933/143502/338755/729759/283159/390649/119772/390197/119765/219875/135948/282770/81696/26219/441308/390113/442194/390151/119749/284532/390067/347468/119695/390265/219487/403274/79544/8387/286365/81470/128366/392391/219438/285659/219447/391194/219431/119692/256892/343172/5568/391190/26716/120793/4992/401993/283093/127074/219429/390882/255725/282763/26538/121364/390436/7932/284383/4993/219417/8386/283111/254879/26531/120796/144125/402135/79339/256144/119687/26696/393046/127068/341276/390036 |
| hsa04080 | Neuroactive ligand-receptor interaction | 318 | 0.496670856 | 2.322676938 | 1.00E-10 | 1.69E-08 | 1.18E-08 | 3715 | tags=50%, list=25%, signal=39% | 2891/200959/2913/7432/1816/10022/130574/4159/3361/387129/85569/10886/5741/134/9038/151/1133/1143/147/2641/23620/553/1813/4887/4161/5340/2690/1139/680/8973/3375/153/5179/11255/2916/1909/3060/100169851/1812/79957/64111/796/2492/1138/3814/134860/2903/2566/3062/2693/2695/1268/2899/339403/2911/1442/6755/2564/170589/122042/5646/5020/4852/2359/2560/2692/23566/6754/9248/122876/1908/130576/117/5697/2563/148/2893/1392/554/2894/4544/5731/7252/2898/2914/5024/799/887/5733/283869/255061/3973/885/2567/2917/51289/3972/2831/2905/1131/5745/3061/7434/1144/6869/9287/5737/2901/1815/4889/2568/1443/51083/2696/2798/6753/1902/4923/1129/3363/2147/3351/2555/5021/56413/9002/150/2900/22953/84539/9127/594857/2859/718/4158/152/3269/155/4987/8484/2918/8862/3952/6915/51052/51738/1910/2837/5618/5030/6343/6344/113091/5539/2862/3360/1906/2691/133/9340 |
| hsa05012 | Parkinson disease | 220 | -0.352017434 | -2.000539176 | 4.56E-08 | 5.14E-06 | 3.60E-06 | 5020 | tags=60%, list=33%, signal=40% | 810/1616/4701/4718/9927/1346/1649/6570/4728/808/598/5710/65018/5693/3799/56901/4711/5714/7280/1340/91252/4217/7417/2861/1350/4720/5719/317/5601/4715/83447/7326/4541/5708/292/118424/7494/2770/1345/7846/6389/2773/7381/2771/11315/4780/347733/2778/3831/341947/5709/3710/805/51807/5687/4695/1327/4716/5705/817/374291/54539/10975/54205/120892/4729/4694/9167/801/201266/5335/468/7385/4726/5702/10383/4723/57181/4697/4724/6263/5689/5700/5683/5685/5691/5694/3309/5717/4710/4714/51465/91860/6571/143471/6391/4722/5682/55334/4698/64116/7419/9451/4717/4725/7388/4706/7386/1351/5695/5718/55967/5567/4704/836/27089/29796/4707/4719/5707/4700/1349/10213/3708/7332/5692/4708/23516/4712/9377/6622 |
| hsa00190 | Oxidative phosphorylation | 101 | -0.430526281 | -2.155694485 | 7.49E-07 | 5.14E-05 | 3.60E-05 | 3561 | tags=44%, list=24%, signal=33% | 4695/1327/4716/374291/54539/10975/54205/4729/4694/9167/7385/10312/4726/4723/525/4697/4724/1355/4710/4714/1352/1353/6391/4722/4698/533/4717/4725/7388/4706/7386/1351/55967/4704/528/27089/29796/4707/4719/4700/1349/4708/4712/9377 |
| hsa03010 | Ribosome | 114 | -0.419528353 | -2.122171613 | 9.12E-07 | 5.14E-05 | 3.60E-05 | 7311 | tags=77%, list=49%, signal=40% | 6144/6133/6204/51023/6187/6202/6189/6206/6194/6128/6173/51116/6166/51069/6175/6218/55052/6181/11224/6141/140032/9801/29093/6122/6138/9045/6207/6157/64979/6159/51081/6143/6229/6158/6192/6169/6136/6160/65003/6205/51073/4736/6129/6137/6188/6231/51121/6235/6170/6191/6203/6222/6230/6139/9553/6147/100529097/64983/6167/6165/54460/6152/6182/6161/51187/6227/64960/6232/64981/64969/6146/3921/6164/10573/6183/64965/55173/6210/51264/124995/200916/64928/6150/54948/64963/29088/65005/11222 |
| hsa04140 | Autophagy - animal | 144 | -0.380578984 | -2.047842206 | 7.91E-07 | 5.14E-05 | 3.60E-05 | 5838 | tags=60%, list=39%, signal=37% | 55054/3265/4077/1509/55823/3476/598/8878/5516/8503/338382/89849/8660/3845/208/5605/84971/7248/664/23710/10652/83734/5601/4893/8471/64419/3916/51100/10533/8408/30849/9474/5562/7405/5563/65082/7189/81631/6794/79065/9776/10000/64422/203228/84938/3920/3146/5594/5295/8678/5588/5728/5290/115201/10010/22863/6198/23001/81671/8417/5170/22808/9110/9140/1613/64601/57448/9451/5604/6885/207/5289/3091/5861/3667/55255/5567/7879/54541/10670/3708/5515/22800/55102/64121/10325/57521 |
| hsa04120 | Ubiquitin mediated proteolysis | 118 | -0.399322035 | -2.029179376 | 1.20E-06 | 5.80E-05 | 4.06E-05 | 5109 | tags=57%, list=34%, signal=38% | 8916/8945/330/65264/672/7326/23759/118424/9820/55284/4193/8451/26091/9354/7320/90293/7324/51434/23327/7189/10075/55236/134111/10477/9040/23624/51366/140739/7328/29882/23221/23291/9320/6502/51433/868/8453/10277/8450/1161/8065/1643/4591/11065/57154/64750/10055/22954/84447/92912/51465/8651/7334/55958/389898/8924/57448/4214/83737/867/8881/63893/51343/7332/10054/8925/9616 |
| hsa03040 | Spliceosome | 105 | -0.407706605 | -2.036573044 | 1.97E-06 | 8.31E-05 | 5.82E-05 | 6453 | tags=68%, list=43%, signal=39% | 24148/84321/5356/27316/6625/22916/10465/84844/9129/3312/57187/10084/57819/10946/51690/55110/153527/57461/6631/10907/23450/6432/6628/9410/7307/8175/3192/2521/3178/8896/11325/6633/3183/220988/9343/6428/5093/9984/6632/9775/10523/10713/11017/151903/10915/55119/1655/27258/6627/3303/1665/29896/6637/51729/10291/6434/11338/10569/10285/10772/988/23350/6635/51340/6636/10262/10929/56259/22827/6634/9416 |
| hsa04666 | Fc gamma R-mediated phagocytosis | 79 | -0.451264468 | -2.153730123 | 4.70E-06 | 0.000158714 | 0.000111214 | 3160 | tags=42%, list=21%, signal=33% | 10000/3635/382/1398/5335/9846/1785/5594/5295/5581/5290/5578/7408/10093/6198/10092/2214/10810/2934/3984/5604/5579/207/5337/4067/10451/10096/5336/8936/8395/81873/8853/1073 |
| hsa04742 | Taste transduction | 77 | 0.522105436 | 2.05603192 | 4.29E-06 | 0.000158714 | 0.000111214 | 3852 | tags=48%, list=26%, signal=36% | 5137/259286/5136/50837/51764/6337/80834/2911/259285/50836/50835/9177/5568/29850/2914/5024/773/353164/1131/338398/50831/2784/9033/775/3351/2555/22953/114/6335/5726/5030/50839/50833/954/200909/259290/6338 |
| hsa04110 | Cell cycle | 131 | -0.372803749 | -1.942876713 | 5.64E-06 | 0.000173152 | 0.000121331 | 4989 | tags=53%, list=33%, signal=36% | 8379/7531/9126/4088/5591/25/23595/1874/7029/4193/1029/4999/157570/4089/23244/7040/546/10926/902/1663/51434/10735/1875/10459/11200/7529/545/10971/4172/29882/5527/1021/6502/51433/10274/3065/7534/25836/8317/5525/898/1647/1387/8555/5001/4175/114799/9133/5000/1031/8556/9134/5519/27085/2033/5933/8243/896/8881/5934/1870/51343/5515/5925/23047/7465/890/5111/26271 |
| hsa05131 | Shigellosis | 193 | -0.318255332 | -1.776051063 | 7.63E-06 | 0.000195901 | 0.000137271 | 4273 | tags=44%, list=28%, signal=32% | 7336/653857/8517/6300/30849/10627/9474/1147/8717/998/92610/5217/7335/4633/5330/3710/5829/2309/7189/81631/837/6352/7099/54205/10000/87/382/1398/3059/375/23118/5335/5594/5295/823/7414/23291/2308/8678/5588/257397/834/5581/6093/5290/7094/9265/4636/11146/1432/10093/3551/22863/2931/6198/81/10092/4790/1729/7334/63916/9140/389898/2017/6885/58484/207/5289/10892/9475/831/8915/10096/5336/8936/5481/10670/3708/81873/64121/10325/113026/57521/824 |
| hsa04060 | Cytokine-cytokine receptor interaction | 245 | 0.38534863 | 1.758704749 | 8.11E-06 | 0.000195901 | 0.000137271 | 3448 | tags=35%, list=23%, signal=28% | 3452/414062/3569/6348/3444/4982/6364/3552/3627/56832/27302/6357/3441/6373/3567/27179/50604/3553/3557/656/3443/2690/7066/90865/6372/149233/132014/4283/6358/6361/4804/6356/59067/3626/64109/8600/1232/1442/10850/658/4803/27177/6359/1435/8200/8740/27190/133396/8995/9966/6351/3456/55504/3595/6369/55801/653/151449/51561/958/6360/27178/6376/6366/353500/246778/1443/10344/970/3597/2657/3563/2921/3593/386653/2919/4049/3440/3952/53342/4838/3624/8784/5618/84818/1235 |
| hsa04144 | Endocytosis | 212 | -0.307915476 | -1.736019329 | 6.96E-06 | 0.000195901 | 0.000137271 | 4506 | tags=43%, list=30%, signal=30% | 51100/80223/4193/10015/408/3134/57403/377/84612/116983/653857/858/112936/998/118813/2261/9525/131890/7048/50807/23327/3949/3560/7189/11267/5867/51160/128866/11311/51510/23624/382/6642/375/55040/1785/3303/27131/868/9101/23362/26286/8027/9265/55737/5584/116987/10890/161/10093/57154/64750/10092/163/26056/9146/2869/8723/7046/92421/9765/8411/830/832/9135/9922/23527/9829/5337/7037/29082/116984/83737/11031/867/8729/7879/7852/3482/10096/8766/84364/1234/55680/80230/1173/8395/81873/30845/1211/8853 |
| hsa05203 | Viral carcinogenesis | 144 | -0.349850354 | -1.882495755 | 1.27E-05 | 0.00025231 | 0.000176798 | 4416 | tags=44%, list=29%, signal=31% | 4193/1029/2968/3134/8517/8850/8717/998/2885/9734/3249/5922/1108/10488/5829/6908/9586/2967/87/7529/9261/23352/10971/1386/468/3516/1739/6777/5594/5295/1021/2960/6502/28973/5290/3065/7534/5700/27044/898/81/1387/4790/2934/2958/6774/7419/9134/4067/9519/2033/3716/9093/5933/896/5567/836/841/5934/1234/1385/5925/890 |
| hsa05016 | Huntington disease | 257 | -0.289653531 | -1.650337351 | 1.22E-05 | 0.00025231 | 0.000176798 | 3817 | tags=36%, list=25%, signal=27% | 5440/3831/10488/5330/341947/5709/6908/51807/5687/5431/4695/1327/4716/5705/83544/2876/374291/54539/10975/54205/9776/9586/4729/4694/9167/5438/2882/7385/4726/5702/10383/4723/8678/4697/4724/3065/5689/1767/5700/5683/161/5685/5691/5694/5717/22863/4710/1387/5430/163/4714/143471/6391/4722/5682/4698/7419/4717/4725/7388/5289/4706/7386/9519/1351/5695/2033/5718/55967/4704/836/841/27089/29796/4707/4719/5707/4700/5436/1349/10213/23186/3708/1385/5692/1173/4708/84516/55102/4712/1211/9377/5468 |
| hsa05014 | Amyotrophic lateral sclerosis | 292 | -0.275660793 | -1.583015453 | 1.17E-05 | 0.00025231 | 0.000176798 | 4289 | tags=39%, list=29%, signal=29% | 79139/7846/6389/8408/6300/30849/220988/7381/6428/53371/5217/347733/3831/341947/5709/3710/51807/5687/4695/1327/4716/5705/83544/23435/81631/2876/374291/10482/54539/10975/54205/9776/55746/4729/4694/9782/9167/203228/468/2882/7385/9896/23225/9973/4726/5702/10383/4723/81929/8678/4697/4724/9631/834/55916/4928/5689/310/1767/5700/5532/5683/10010/1432/5685/5691/5694/3309/5717/22863/4710/29979/4714/10280/143471/6391/4722/5534/5682/4698/9451/23165/4717/4725/7388/5289/4706/5861/7386/3084/1351/5695/5533/5718/80208/55255/23064/55967/4704/836/27089/29796/4707/4719/5707/4700/1349/10213/5692/4708/84516/55102/4712/283/9377 |
| hsa05020 | Prion disease | 225 | -0.301075714 | -1.689115807 | 1.47E-05 | 0.000276549 | 0.000193782 | 3810 | tags=39%, list=25%, signal=29% | 3831/10488/341947/5709/3710/51807/5687/4695/1327/4716/5705/374291/6352/54539/10975/54205/9586/1535/4729/4694/9167/1386/468/7385/5594/4726/3303/5295/5702/10383/4723/4697/4724/6263/5290/5689/5700/5532/5683/1432/5685/5691/5694/3309/5717/4710/4684/4714/143471/6391/4722/5534/5682/116444/4698/7419/9451/4717/4725/7388/4706/7386/1536/1351/5695/5533/5718/55967/5567/4704/836/27089/29796/4707/4719/5707/4700/5621/1349/10213/2534/3708/1385/5692/4708/4712/9377 |
| hsa04141 | Protein processing in endoplasmic reticulum | 146 | -0.351441143 | -1.896411175 | 1.79E-05 | 0.000317938 | 0.000222784 | 6074 | tags=63%, list=40%, signal=38% | 4287/3312/91445/258010/3337/3301/1649/7322/7993/5589/201595/9373/6184/7415/6500/55968/11231/7186/4217/56893/6396/5601/7326/118424/5609/51035/7494/55741/79139/10960/23193/55757/9695/58505/4780/6400/10483/7184/10134/55768/3320/9709/9632/55666/3326/5034/10113/821/468/10802/10956/3303/823/6745/10952/267/3998/10277/6747/64215/8720/165324/3309/54431/29979/10525/84447/51465/3703/6748/25956/81567/51726/9451/1603/9871/10905/573/56886/84061/10484/55432/9532/10130/23480/10970/10294/27248/811/51009/824/4121 |
| hsa05415 | Diabetic cardiomyopathy | 167 | -0.327971502 | -1.783069555 | 2.09E-05 | 0.000325508 | 0.000228088 | 4364 | tags=44%, list=29%, signal=32% | 1345/6513/5880/6389/6300/7381/7040/142/5330/7048/341947/5501/4695/1327/5160/4716/5164/817/374291/6517/54539/948/10975/10000/1535/4729/4694/9167/1375/7385/4726/5295/4723/5162/4697/4724/5728/5290/5578/3643/1432/5500/4710/4714/4790/6391/7046/488/4722/4698/7419/5579/4717/4725/7388/207/4706/7386/3667/1536/1351/55967/4704/2673/27089/29796/4707/4719/4700/1349/5465/4708/4712/9377 |
| hsa04714 | Thermogenesis | 186 | -0.307930258 | -1.708373243 | 2.06E-05 | 0.000325508 | 0.000228088 | 4239 | tags=44%, list=28%, signal=32% | 6389/6300/7381/5562/5565/2885/5563/2778/2260/10488/341947/6603/4695/1327/91942/4716/374291/6601/54539/10975/6595/9586/6655/4729/4694/9167/1386/1375/7385/493753/126129/86/4726/4723/4697/4724/6195/6599/6597/1355/51703/1432/5571/6198/4710/4714/6605/1352/2182/1353/6391/4722/4698/4717/9658/4725/7388/4706/7386/1351/123096/55967/5567/4704/27089/29796/8289/4707/4719/4700/1349/51780/1385/4708/4712/11343/10818/9377/6602/5468/57521 |
| hsa05010 | Alzheimer disease | 325 | -0.268814988 | -1.577930773 | 2.12E-05 | 0.000325508 | 0.000228088 | 3883 | tags=37%, list=26%, signal=28% | 8851/347733/3831/5330/341947/5709/3710/8322/805/51807/5687/4695/1327/4716/5705/374291/54539/10975/54205/9776/5663/10000/5664/4729/7481/4694/9167/25825/801/201266/468/8325/7385/102/5594/7976/4726/5295/823/5702/10383/4723/57181/8678/4697/4724/6263/1855/5290/5689/3643/5700/5532/5683/5685/5691/5694/840/5717/3551/22863/4710/4714/4790/8883/2535/91860/143471/6391/6868/488/4722/5534/5682/55334/4698/64116/7419/9451/5604/4717/351/4725/7388/207/5289/4706/7386/3667/1536/1351/5695/5533/5718/55967/4704/836/841/27089/29796/4707/4719/5707/4700/1349/10213/5481/8321/3708/5692/369/4708/55102/23516/4712/9377/1452/824/6622 |
| hsa00510 | N-Glycan biosynthesis | 48 | -0.495012616 | -2.092610439 | 2.45E-05 | 0.000360537 | 0.000252634 | 2835 | tags=44%, list=19%, signal=36% | 1798/79644/199857/440138/85365/8813/4124/4249/3703/29880/1603/4245/10905/84061/2530/10195/6480/4248/11320/4247/4121 |
| hsa05033 | Nicotine addiction | 35 | 0.615801956 | 2.08045686 | 4.56E-05 | 0.000642312 | 0.000450079 | 2731 | tags=51%, list=18%, signal=42% | 2891/200959/1139/8973/2903/2566/2564/2560/140679/2563/2893/57030/773/2567/2905/2568/774/2555 |
| hsa04612 | Antigen processing and presentation | 66 | -0.446910667 | -2.045124798 | 4.95E-05 | 0.000669339 | 0.000469017 | 1122 | tags=38%, list=7%, signal=35% | 3320/8625/3326/821/4800/3303/3821/3309/3109/3111/8302/3308/3808/100132285/1385/3812/811/3809/3811/3803/3823/3805/57292/5994/3824 |
| hsa03050 | Proteasome | 39 | -0.528280508 | -2.133444387 | 5.47E-05 | 0.000710715 | 0.00049801 | 3704 | tags=69%, list=25%, signal=52% | 5710/5693/5714/5699/5719/5708/9491/5709/5687/5705/51371/5702/5689/5700/5683/5685/5691/5694/5717/143471/5682/23198/5695/5718/5707/10213/5692 |
| hsa04148 | Efferocytosis | 131 | -0.349268375 | -1.820221481 | 5.81E-05 | 0.000727352 | 0.000509667 | 3800 | tags=43%, list=25%, signal=32% | 3988/23355/23200/65082/384/817/961/383/948/286046/23166/1398/9261/6446/10461/1375/8754/10062/102/126129/5594/5734/834/64805/5087/1432/840/9392/6868/51552/55754/488/7057/5627/24145/5781/64601/5604/3091/7386/3685/3693/1524/7879/836/23250/4953/10396/196527/1385/405/84868/811/5732/3690/5468 |
| hsa03250 | Viral life cycle - HIV-1 | 51 | -0.465836785 | -2.001082601 | 8.53E-05 | 0.001029353 | 0.000721285 | 5240 | tags=61%, list=35%, signal=40% | 80237/7251/60489/5903/6829/200316/684/10015/4298/27350/8850/9525/27125/128866/25939/85363/11168/22936/4300/5901/1387/4130/9146/636/29082/2033/7514/7852/1234/9638/164668 |
| hsa00562 | Inositol phosphate metabolism | 63 | -0.42915723 | -1.946072903 | 9.45E-05 | 0.001101569 | 0.000771888 | 3348 | tags=43%, list=22%, signal=33% | 9107/3612/3635/8821/80271/5335/9896/4952/3628/55613/5728/5290/8898/22908/9562/9110/5294/5305/8776/3631/5289/4534/253430/5336/8395/55300/113026 |
| hsa04932 | Non-alcoholic fatty liver disease | 142 | -0.320401102 | -1.720764167 | 0.000163649 | 0.001843778 | 0.001291965 | 4239 | tags=47%, list=28%, signal=34% | 6389/6300/7381/5562/5565/998/5563/7040/341947/4695/1327/4716/374291/54539/10975/54205/10000/4729/4694/9167/468/10062/7385/4726/5295/4723/4697/4724/5290/3643/10018/1432/5571/840/3551/2931/4710/4714/4790/6391/4722/4698/9451/4717/4725/7388/207/4706/7386/3667/1351/83737/55967/4704/836/841/27089/29796/4707/4719/4700/1349/5465/4708/4712/9377/5468 |
| hsa03015 | mRNA surveillance pathway | 72 | -0.401578267 | -1.8684955 | 0.00018931 | 0.002064085 | 0.001446338 | 5800 | tags=64%, list=39%, signal=39% | 5526/10284/29894/5520/5516/51585/11269/55110/65110/124540/26986/65109/8732/2521/28227/80335/55844/81608/5501/2107/9775/23435/1477/10482/8731/10898/1478/1479/2935/5527/55916/10250/10921/5500/5525/5976/55012/53981/11051/10767/10978/5519/51692/5515/23283/5411 |
| hsa04662 | B cell receptor signaling pathway | 72 | -0.398406025 | -1.853735436 | 0.000206408 | 0.002180188 | 0.001527693 | 3225 | tags=42%, list=21%, signal=33% | 10859/10000/1380/3635/6655/695/974/10990/640/5594/5295/5290/5532/933/3551/4790/5534/5604/5579/207/4067/10451/5533/10892/25780/29760/8915/5336/930/971 |
| hsa03082 | ATP-dependent chromatin remodeling | 77 | -0.394615092 | -1.872570058 | 0.000218075 | 0.00223362 | 0.001565134 | 4931 | tags=57%, list=33%, signal=39% | 57492/5928/54556/83444/8089/8467/10524/55929/26039/9112/54617/1107/1108/84295/9274/6603/6601/6595/2186/86/8099/51377/10263/57459/6599/3065/6597/10467/9031/10933/605/9219/6760/6605/10902/55193/9275/7528/283899/8289/196528/9643/64431/6602 |
| hsa05208 | Chemical carcinogenesis - reactive oxygen species | 183 | -0.296471886 | -1.635109035 | 0.00023978 | 0.002383699 | 0.001670297 | 5529 | tags=57%, list=37%, signal=36% | 8503/56901/196/4711/4688/1340/50507/3845/4217/208/5605/7417/1350/4720/7422/5601/4893/4715/83447/25/52/4541/5770/292/5609/1345/6389/8517/6300/7381/1147/2885/4780/119391/341947/2309/4695/1327/4716/374291/873/54539/10975/10000/2953/1535/6655/4729/4694/9167/7385/5594/4726/5295/4723/4697/4724/9020/5728/1728/5290/4257/3082/1432/3551/4710/27/4714/4790/5170/6391/4722/4698/5781/7419/5604/4717/4725/7388/207/5337/3091/4706/7386/1351/55967/4704/27089/23683/29796/6416/4707/4719/4700/1349/9446/1545/5795/405/369/4708/1950/4712/9377 |
| hsa03460 | Fanconi anemia pathway | 44 | -0.483947478 | -2.018121461 | 0.000296652 | 0.002864814 | 0.002007422 | 3170 | tags=50%, list=21%, signal=40% | 57599/2178/80010/5980/545/79728/5395/84126/5889/83990/6117/22909/7398/146956/51455/80198/641/353497/11201/2072/6119/2176 |
| hsa00513 | Various types of N-glycan biosynthesis | 36 | -0.496400416 | -1.970384847 | 0.000512355 | 0.004810444 | 0.003370756 | 2556 | tags=42%, list=17%, signal=35% | 199857/440138/85365/3074/4124/3703/1603/4245/10905/84061/2530/10195/11320/4247/4121 |
| hsa03420 | Nucleotide excision repair | 48 | -0.441186865 | -1.865068101 | 0.000532311 | 0.004862736 | 0.003407399 | 4363 | tags=48%, list=29%, signal=34% | 2968/5441/2071/5434/8451/5983/902/5440/5431/2967/404672/5438/6117/5981/8450/1161/1643/5430/10714/5436/2072/6119/5111 |
| hsa03013 | Nucleocytoplasmic transport | 85 | -0.355614218 | -1.705554715 | 0.000598057 | 0.005319559 | 0.003727502 | 6458 | tags=67%, list=43%, signal=38% | 55308/84321/9688/22916/10527/55705/23534/57187/4927/10284/51808/11269/55110/3843/3837/65110/10526/7175/6396/6612/10762/5903/348995/57510/65109/10073/3838/53371/6613/9984/7341/9775/55161/1434/10482/55746/23633/23225/3836/81929/51068/9631/55916/4928/8563/25909/10250/10921/5901/5976/51194/3842/80145/3841/23165/7514/5411 |
| hsa04070 | Phosphatidylinositol signaling system | 83 | -0.363839402 | -1.729852817 | 0.000619441 | 0.005368489 | 0.003761788 | 3776 | tags=47%, list=25%, signal=35% | 5330/3710/805/9107/3612/3635/8821/80271/801/5335/8525/4952/5295/3628/55613/5728/5290/5578/8898/22908/91860/9110/51447/5305/8776/3631/5579/160851/5289/4534/253430/1609/23262/8527/5336/3708/8395/55300/113026 |
| hsa03008 | Ribosome biogenesis in eukaryotes | 58 | -0.418560555 | -1.861790387 | 0.000659039 | 0.005567685 | 0.003901367 | 3952 | tags=41%, list=26%, signal=31% | 10528/51119/84135/10482/10885/25996/83732/9724/9790/51068/55916/23195/22803/5901/55272/55781/4931/55505/23160/29102/7514/54464/54433/26354 |
| hsa04218 | Cellular senescence | 141 | -0.308537891 | -1.654651641 | 0.00067537 | 0.005567685 | 0.003901367 | 5295 | tags=53%, list=35%, signal=35% | 83593/3845/208/5605/7417/4087/7248/8945/5928/4088/4893/83447/1874/292/5883/4193/1029/3134/6300/204851/7040/5810/7048/5501/3710/2309/805/1875/1978/10000/11200/9261/545/801/132660/5594/5295/823/1021/23291/2308/5728/5290/5532/1432/10111/5500/898/1647/4790/91860/22808/9133/7046/5534/7419/10114/5604/9134/207/54822/5533/91750/5933/896/678/5934/1870/5481/3708/22800/5925/3805/890/824 |
| hsa05032 | Morphine addiction | 78 | 0.439815931 | 1.738796061 | 0.000700257 | 0.005635404 | 0.003948819 | 2992 | tags=37%, list=20%, signal=30% | 200959/5137/5136/134/51764/5138/1812/55970/2868/2566/5143/2564/107/2560/108/140679/2563/5568/773/2567/3765/2784/2568/5139/774/2555/5582/111/114 |
| hsa04613 | Neutrophil extracellular trap formation | 95 | -0.336428201 | -1.653347684 | 0.000726466 | 0.005710357 | 0.00400134 | 3381 | tags=38%, list=22%, signal=30% | 7097/837/7099/10000/1535/5335/7450/3146/5594/5295/366/834/5290/3065/5578/6403/1184/566/1432/8520/4790/2214/3674/1378/1991/7419/5604/5579/6885/207/728/1536/5336/3690/3684/820 |
| hsa03083 | Polycomb repressive complex | 77 | -0.369160674 | -1.751781009 | 0.000970523 | 0.007455385 | 0.00522411 | 6021 | tags=55%, list=40%, signal=33% | 84458/4149/57332/7322/29915/6500/57713/8314/3054/55777/54880/5928/80012/3607/10238/171023/84456/23429/84678/51460/63035/221937/55252/10389/23512/22992/11091/26013/3065/6045/648/1387/8473/80816/85015/10600/121536/8726/7528/2033/23466/2146 |
| hsa03030 | DNA replication | 32 | -0.49387659 | -1.902065011 | 0.001155087 | 0.008675985 | 0.006079404 | 3330 | tags=41%, list=22%, signal=32% | 6742/79621/4172/2237/6117/5981/5557/4175/246243/5558/10714/6119/5111 |
| hsa04061 | Viral protein interaction with cytokine and cytokine receptor | 83 | 0.42782962 | 1.713392421 | 0.001468963 | 0.010793687 | 0.007563312 | 2522 | tags=30%, list=17%, signal=25% | 414062/3569/6348/6364/3627/6357/6373/50604/6372/4283/6358/6361/6356/1232/10850/6359/1435/8740/6351/6369/6360/27178/6376/6366/10344 |
| hsa04974 | Protein digestion and absorption | 87 | 0.414733937 | 1.664079554 | 0.001505912 | 0.010829749 | 0.007588581 | 2201 | tags=28%, list=15%, signal=24% | 1360/255631/84570/340267/63036/4224/340024/1277/4225/285641/23436/3769/1305/5646/85301/256076/1289/1357/1288/1297/10136/51032/6564/2006 |
| hsa04512 | ECM-receptor interaction | 77 | 0.429127248 | 1.68988725 | 0.001702202 | 0.011741717 | 0.008227612 | 3833 | tags=52%, list=25%, signal=39% | 5649/158326/22987/1758/284217/3914/56955/1277/341640/3910/3371/1311/7058/9900/22798/3908/3918/256076/63923/1288/7059/1297/9899/2335/10319/3381/80144/6696/6385/1101/1284/7060/3339/7148/1286/1834/1278/3912/3913/3909 |
| hsa04514 | Cell adhesion molecules | 139 | 0.373219727 | 1.59564412 | 0.001690014 | 0.011741717 | 0.008227612 | 3043 | tags=29%, list=20%, signal=24% | 100506658/1272/114798/57689/1003/5010/53842/10686/6401/23562/8174/3383/84631/23114/257194/149461/84189/3118/4099/7412/1000/58494/29126/1002/4897/22854/94030/80380/3126/1364/100132463/5802/958/4685/4359/9378/6385/1365/49861/9672/54413 |
| hsa04152 | AMPK signaling pathway | 109 | -0.314985832 | -1.574362819 | 0.001837269 | 0.012419935 | 0.008702851 | 4446 | tags=44%, list=30%, signal=31% | 28227/55437/8408/5210/5562/55844/5565/5563/10488/5862/2309/6517/6794/948/9586/1978/10000/5106/1375/126129/5295/200186/5527/2308/1994/5290/3643/10890/5571/5525/6198/55012/5170/51552/6885/81617/207/3667/5519/5213/51719/31/5515/1385/5214/890/5468/57521 |
| hsa04660 | T cell receptor signaling pathway | 104 | -0.310219121 | -1.548489811 | 0.002015807 | 0.013359661 | 0.009361332 | 4225 | tags=43%, list=28%, signal=31% | 8440/5609/28227/8517/6300/55844/1147/998/2885/959/10125/10000/6655/5335/1739/5594/5295/5527/868/5588/9020/5290/5532/1432/3551/5525/3702/55012/4790/5170/5534/5781/5604/4690/6885/207/10451/5519/5533/10892/8915/1493/2534/5062/5515 |
| hsa04020 | Calcium signaling pathway | 220 | 0.337492199 | 1.525784652 | 0.002093666 | 0.013608827 | 0.009535927 | 3201 | tags=35%, list=21%, signal=28% | 1816/2255/5137/3791/3361/5136/1133/147/553/1139/153/5535/2253/1909/1812/2249/91807/4233/2903/1956/491/2065/2911/4803/107/51196/108/148/5731/4846/5568/5024/2668/887/5733/6262/773/4915/3973/84812/7134/7039/10345/2905/1131/2264/7424/85366/6869/5737/4485/775/2321/774/6588/4923/1129/3363/8912/27006/2774/5021/56413/5582/22953/2250/5155/9127/4914/2324/492/114/8822/3269/2064/155 |
| hsa04137 | Mitophagy - animal | 89 | -0.328523077 | -1.61122419 | 0.00232342 | 0.014817284 | 0.010382712 | 5853 | tags=54%, list=39%, signal=33% | 9927/3265/4077/598/54543/65018/8878/7415/338382/10651/7186/3845/79735/22879/84315/664/23710/1459/51024/5601/4893/25813/8408/2309/9804/81631/10075/79065/79671/4976/468/8678/9101/55288/267/23786/25820/345778/64786/57154/64750/22808/9451/3091/7879/89941/9958/22800 |
| hsa03060 | Protein export | 15 | -0.636646881 | -1.989457193 | 0.002915927 | 0.01825154 | 0.012789152 | 2815 | tags=47%, list=19%, signal=38% | 6728/6729/10952/6726/3309/6730/23480 |
| hsa01040 | Biosynthesis of unsaturated fatty acids | 19 | -0.564971719 | -1.88209098 | 0.00311474 | 0.019141491 | 0.013412755 | 4671 | tags=63%, list=31%, signal=44% | 11332/3992/8310/51/641371/54898/122970/79071/6785/3295/51144/79993 |
| hsa04650 | Natural killer cell mediated cytotoxicity | 112 | -0.309481763 | -1.561204986 | 0.003299493 | 0.019914794 | 0.013954621 | 2694 | tags=33%, list=18%, signal=27% | 22914/259197/5594/5295/3821/3454/5290/5578/5532/9437/2214/135250/6452/4068/3460/5534/5781/5604/5579/10451/5533/836/5336/3808/3459/2534/100132285/369/3812/3809/3811/5551/3803/3823/57292/3002/3824 |
| hsa04136 | Autophagy - other | 30 | -0.482994561 | -1.798387639 | 0.003458638 | 0.020155514 | 0.014123297 | 6450 | tags=77%, list=43%, signal=44% | 2475/55062/11345/55054/3476/5516/84971/23710/83734/10533/30849/9474/79065/9776/64422/84938/8678/115201/9140/5289/5515/55102/57521 |
| hsa00140 | Steroid hormone biosynthesis | 40 | 0.493726048 | 1.724202711 | 0.00340704 | 0.020155514 | 0.014123297 | 4052 | tags=57%, list=27%, signal=42% | 7364/1586/1543/7366/1645/1583/3293/1589/6820/374875/8630/6783/10720/1577/3283/1544/1551/1109/79154/1584/1571/54578/1588 |
| hsa03018 | RNA degradation | 56 | -0.379745573 | -1.668638404 | 0.003543786 | 0.020301691 | 0.014225726 | 5781 | tags=61%, list=38%, signal=38% | 57819/246175/51690/55802/11340/51013/22894/84186/9337/26986/57472/694/196513/27257/23404/3313/2027/27258/51010/4850/29883/22803/9924/115752/10438/255967/10950/25904/5213/54464/170506/5214/167227/5394 |
| hsa01212 | Fatty acid metabolism | 44 | -0.425352503 | -1.77377309 | 0.003903957 | 0.021992289 | 0.015410355 | 4145 | tags=48%, list=28%, signal=35% | 3992/36/8310/51/197322/54898/1375/79071/126129/6785/1962/3295/51703/38/2182/84869/3032/3033/31/51144/79993 |
| hsa05132 | Salmonella infection | 204 | -0.255406312 | -1.426876024 | 0.004804435 | 0.026621293 | 0.018653974 | 5433 | tags=47%, list=36%, signal=30% | 6500/64746/4671/338382/7280/9266/7186/208/5605/2597/5898/330/51429/1778/114609/23191/7132/929/5601/6188/5609/9648/51209/653857/7846/8517/6300/10627/1147/8717/998/5217/4633/347733/3831/7184/51176/65082/51807/302/7189/8797/7097/837/1434/3320/55207/7099/54205/10000/3326/382/375/23118/1785/5594/3836/10383/399/257397/834/5290/9265/4636/3071/55845/1432/8655/10093/840/3551/10092/4790/1781/10810/79026/6990/63916/5294/64601/5604/6885/58484/207/5289/9475/7879/836/1783/841/10096/6416/84516/81873/83547/10006 |
| hsa04024 | cAMP signaling pathway | 201 | 0.327298444 | 1.465124608 | 0.005293071 | 0.028855776 | 0.020219713 | 3873 | tags=38%, list=26%, signal=28% | 2891/7432/1816/134/2641/1813/54714/55811/153/1909/1812/338442/2492/2903/2693/5143/2695/491/3725/4792/6755/170589/5020/4852/107/51196/5296/108/122876/139760/2867/1908/8843/117/2893/1392/7252/5568/610/5733/6262/3973/3972/2905/7434/2737/3991/5348/775/5139/64399/2696/1129/3351/5021/627/111/492/114/10411/4158/1258/84699/90993/51738/776/4878/572/3360/1906/5602/6548/778/2902/486/11149 |
| hsa03020 | RNA polymerase | 29 | -0.46895451 | -1.712589375 | 0.005545574 | 0.029752447 | 0.020848024 | 4350 | tags=48%, list=29%, signal=34% | 5441/5434/5440/5431/10623/84265/55718/5438/55703/51082/5430/5436/84172/10621 |
| hsa04150 | mTOR signaling pathway | 137 | -0.280711172 | -1.474554154 | 0.006326524 | 0.032897923 | 0.023052111 | 3161 | tags=34%, list=21%, signal=27% | 1978/10000/9663/6655/7481/6446/8325/201163/8140/5594/7976/5295/6520/81929/79726/525/6502/5728/6195/1855/5290/5578/153129/79109/3643/3551/6198/5170/2535/6249/5604/5579/81617/207/3667/54541/528/51719/10670/8321/2887/64121/8131/10325/79899/57521 |
| hsa04071 | Sphingolipid signaling pathway | 103 | -0.29526139 | -1.468814493 | 0.006313699 | 0.032897923 | 0.023052111 | 5833 | tags=57%, list=39%, signal=35% | 3265/5526/8698/1509/5520/55304/5516/8503/7186/3845/4217/208/5605/79603/6610/7132/427/5601/4893/2776/2770/28227/5880/6300/2773/55844/8717/2771/5330/259230/4363/10000/9846/5594/5295/5527/5728/5581/6093/5290/5578/1432/10672/5525/55012/4790/5170/9517/10558/5604/5579/207/5337/5519/171546/9475/2534/5515/53637 |
| hsa03430 | Mismatch repair | 20 | -0.546705849 | -1.839196549 | 0.006632403 | 0.033965942 | 0.023800489 | 3999 | tags=55%, list=27%, signal=40% | 5983/4436/6742/5395/6117/5981/2956/10714/4437/6119/5111 |
| hsa00280 | Valine, leucine and isoleucine degradation | 38 | -0.413465766 | -1.667322182 | 0.006883229 | 0.034724348 | 0.024331917 | 3929 | tags=50%, list=26%, signal=37% | 36/197322/594/1629/219/217/586/56922/65985/1962/64064/5096/38/27034/3157/3032/18/3033/224 |
| hsa00982 | Drug metabolism - cytochrome P450 | 47 | 0.458909581 | 1.644544825 | 0.00770208 | 0.038283869 | 0.026826131 | 2905 | tags=36%, list=19%, signal=29% | 7364/131/4128/130/7366/2948/2939/2326/1555/1549/2940/10720/1577/653689/1544/126/2327 |
| hsa04913 | Ovarian steroidogenesis | 41 | 0.462273235 | 1.616959134 | 0.008544428 | 0.041855313 | 0.0293287 | 2992 | tags=44%, list=20%, signal=35% | 1586/1543/3630/2492/107/108/6770/1583/5568/3973/283748/3972/255189/240/3283/3479/111/114 |
| hsa03410 | Base excision repair | 38 | -0.404328621 | -1.630476171 | 0.008710592 | 0.042059716 | 0.029471928 | 3999 | tags=39%, list=27%, signal=29% | 5983/142/328/11232/11284/8930/2237/79661/3146/5981/55775/8505/10714/5111/10038 |
| hsa05332 | Graft-versus-host disease | 37 | -0.421007651 | -1.679822431 | 0.009594926 | 0.045042848 | 0.031562257 | 305 | tags=22%, list=2%, signal=21% | 3812/3811/5551/3803/57292/3002/3824/941 |
| hsa04976 | Bile secretion | 63 | 0.413957634 | 1.588283362 | 0.009574549 | 0.045042848 | 0.031562257 | 3970 | tags=38%, list=26%, signal=28% | 6579/7364/10599/7366/6523/10864/107/108/9376/358/343/5568/361/9971/10720/6580/111/114/6343/6344/570/6548/486/54578 |
| hsa00980 | Metabolism of xenobiotics by cytochrome P450 | 50 | 0.425198013 | 1.548903422 | 0.010275843 | 0.047531858 | 0.033306347 | 4295 | tags=48%, list=29%, signal=34% | 7364/131/1543/130/7366/2948/2939/1645/1555/1549/2940/374875/10720/1577/653689/1544/126/27294/1571/222/54578/2944/1553/2052 |
| hsa05210 | Colorectal cancer | 75 | -0.327262685 | -1.541462068 | 0.01054701 | 0.047531858 | 0.033306347 | 5286 | tags=52%, list=35%, signal=34% | 3845/208/5605/332/4087/5898/8313/5601/4088/4893/324/5880/1630/2885/4089/7040/7048/51176/4436/26060/54205/10000/6655/5594/5295/5290/1643/10018/6198/1647/7046/5604/207/2956/836/4437/369/1950/374 |
| hsa04919 | Thyroid hormone signaling pathway | 111 | -0.287173483 | -1.440916 | 0.010476813 | 0.047531858 | 0.033306347 | 2611 | tags=25%, list=17%, signal=21% | 29079/90390/5594/5295/2308/117247/5290/3065/5578/7068/1387/5170/488/5604/5579/207/3091/3685/2033/5213/5567/5336/9969/5214/3690/9282/113026/1827 |
| hsa05022 | Pathways of neurodegeneration - multiple diseases | 398 | -0.208980993 | -1.232001358 | 0.010767206 | 0.047885734 | 0.033554314 | 3897 | tags=33%, list=26%, signal=25% | 11315/8851/347733/3831/6310/5330/341947/5709/3710/8322/805/51807/5687/4695/5173/1327/4716/5705/83544/23435/81631/2876/817/374291/54539/10975/54205/9776/120892/5663/5664/4729/7481/4694/9167/203228/801/5335/468/2882/8325/7385/9896/9973/5594/7976/4726/823/5702/10383/4723/8678/342371/4697/4724/6263/1855/5578/5689/1767/5700/5532/5683/10010/1432/5685/5691/5694/840/3309/5717/22863/4710/4714/4790/10280/51465/2535/91860/143471/6391/488/4722/5534/5682/4698/7419/9451/5604/5579/4717/351/4725/7388/5289/4706/5861/7386/1536/1351/5695/5533/5718/80208/55255/55967/4704/836/841/27089/29796/4707/4719/5707/4700/5621/1349/10213/5481/8321/3708/7332/5692/369/4708/84516/55102/4712/9377/1452/824/6622 |
| hsa00970 | Aminoacyl-tRNA biosynthesis | 20 | -0.522569671 | -1.757999003 | 0.012263908 | 0.051815012 | 0.036307623 | 3839 | tags=55%, list=26%, signal=41% | 118672/57038/2193/54938/55278/51067/10352/23438/80222/79731/23395 |
| hsa04950 | Maturity onset diabetes of the young | 22 | 0.553479385 | 1.696908401 | 0.011918752 | 0.051815012 | 0.036307623 | 1796 | tags=41%, list=12%, signal=36% | 3375/3630/5078/3175/50674/3172/5313/3110/2645 |
| hsa03440 | Homologous recombination | 31 | -0.443318281 | -1.67260641 | 0.012126006 | 0.051815012 | 0.036307623 | 3330 | tags=48%, list=22%, signal=38% | 6742/79184/79728/5889/83990/6117/8438/146956/580/10111/80198/641/10714/29086/6119 |
| hsa05231 | Choline metabolism in cancer | 83 | -0.301243185 | -1.43224282 | 0.011976997 | 0.051815012 | 0.036307623 | 3161 | tags=37%, list=21%, signal=30% | 1978/10000/6655/5335/8525/5130/5594/5295/5290/5578/6198/10810/5170/23446/5604/5579/160851/207/80736/5337/3091/1609/9468/8527/8936/56994/8395/1950/1120/5159/80310 |
| hsa05215 | Prostate cancer | 90 | -0.285247016 | -1.397201371 | 0.013996864 | 0.058406667 | 0.040926503 | 4225 | tags=42%, list=28%, signal=31% | 8517/1147/2885/2260/10488/7184/51176/3320/2078/9586/10000/6655/3326/468/5594/5295/2308/5728/5290/6935/3551/898/1387/4790/5170/5604/9134/207/4314/2033/367/1870/1385/369/1950/5159/5925/80310 |
| hsa04810 | Regulation of actin cytoskeleton | 197 | -0.235573345 | -1.322397339 | 0.015495069 | 0.063869918 | 0.044754692 | 2210 | tags=23%, list=15%, signal=20% | 6093/5290/4636/3071/1730/55845/10672/10093/5500/8516/81/10092/3674/221178/3676/22808/1729/2934/57121/5962/5305/3984/5604/207/10451/3685/3693/9475/7852/10096/8826/4478/8936/7074/5062/8395/369/22800/1950/81873/5159/3690/3684/1073/80310/2149 |
| hsa00100 | Steroid biosynthesis | 18 | -0.512630095 | -1.683301451 | 0.015950611 | 0.064955498 | 0.045515376 | 3800 | tags=56%, list=25%, signal=42% | 3988/2222/7108/4047/1717/6307/1595/50814/3930/1718 |
| hsa05323 | Rheumatoid arthritis | 77 | 0.378118728 | 1.489017581 | 0.0163331 | 0.065721281 | 0.046051972 | 1559 | tags=19%, list=10%, signal=18% | 414062/3569/6348/6364/3552/5741/3553/7010/6372/3383/3725/8600/3118/50617/1435 |
| hsa05206 | MicroRNAs in cancer | 143 | -0.252458012 | -1.357821869 | 0.017574038 | 0.069882644 | 0.048967907 | 2681 | tags=29%, list=18%, signal=24% | 3925/900/1786/5594/7976/5295/1021/5728/5581/6093/5290/3065/5578/6935/10018/648/3551/898/1387/4790/7168/8651/7057/5962/6774/5604/5579/9134/3667/2033/659/836/54541/5336/1545/23405/1870/131405/5159/3690/57521/2146 |
| hsa05219 | Bladder cancer | 36 | -0.385980897 | -1.532091604 | 0.018048922 | 0.07093646 | 0.049706333 | 1320 | tags=22%, list=9%, signal=20% | 7057/1613/5604/1870/369/1950/5925/1839 |
| hsa05110 | Vibrio cholerae infection | 38 | -0.378745566 | -1.527311171 | 0.018976326 | 0.073724117 | 0.05165969 | 3432 | tags=42%, list=23%, signal=33% | 2778/7082/3784/375/5335/9414/10312/10952/525/5578/533/11014/5567/528/5336/23480 |
| hsa05223 | Non-small cell lung cancer | 67 | -0.310618679 | -1.435981717 | 0.019959748 | 0.076663578 | 0.053719418 | 3173 | tags=34%, list=21%, signal=27% | 27436/10000/6655/5335/6777/5594/5295/1021/5290/5578/3082/1643/1647/5170/6774/5604/5579/207/5336/1870/369/1950/5925 |
| hsa05204 | Chemical carcinogenesis - DNA adducts | 40 | 0.432199372 | 1.509337679 | 0.020276808 | 0.077006305 | 0.053959572 | 2751 | tags=35%, list=18%, signal=29% | 7364/1543/7366/2948/2939/1549/2940/374875/10720/1577/653689/1562/1544/1551 |
| hsa03450 | Non-homologous end-joining | 10 | -0.610020717 | -1.667519862 | 0.022718267 | 0.084538077 | 0.059237207 | 4799 | tags=70%, list=32%, signal=48% | 5591/1791/2237/64421/79840/7520/10111 |
| hsa05212 | Pancreatic cancer | 70 | -0.310729167 | -1.44488169 | 0.023010364 | 0.084538077 | 0.059237207 | 5286 | tags=50%, list=35%, signal=33% | 3845/208/4087/5898/7422/5601/4088/1029/5880/8517/1147/998/4089/7040/7048/10000/5594/5295/1021/5290/1643/3551/6198/1647/4790/7046/6774/5604/207/5337/3716/1870/369/1950/5925 |
| hsa05017 | Spinocerebellar ataxia | 125 | -0.263068652 | -1.352314783 | 0.022888151 | 0.084538077 | 0.059237207 | 4839 | tags=49%, list=32%, signal=33% | 5601/2776/83447/5708/292/7494/6261/10524/3752/8408/30849/10528/6310/5330/5709/3710/6908/5687/5173/5705/54205/9776/10000/25814/4800/4976/115209/3516/5295/5702/8678/342371/5290/5578/5689/5700/5683/23369/5685/5691/5694/5717/22863/143471/488/5682/116444/7419/5579/9698/207/5289/9519/5695/5718/5707/10213/3708/5692/6095/55102 |
| hsa00591 | Linoleic acid metabolism | 21 | 0.542273513 | 1.645164582 | 0.024598125 | 0.08751754 | 0.061324966 | 3894 | tags=57%, list=26%, signal=42% | 5319/8399/64600/5322/283748/255189/26279/1544/84647/8605/1571/246 |
| hsa03022 | Basal transcription factors | 34 | -0.399381852 | -1.548216751 | 0.02453003 | 0.08751754 | 0.061324966 | 5285 | tags=59%, list=35%, signal=38% | 10629/4331/6872/2961/2968/2071/2963/6882/902/2969/6908/2967/404672/2960/6883/6879/27097/6880/2958/9519 |
| hsa04922 | Glucagon signaling pathway | 91 | -0.294075349 | -1.441517953 | 0.024287899 | 0.08751754 | 0.061324966 | 4124 | tags=45%, list=27%, signal=33% | 5562/5565/5563/2778/10488/5330/5255/3710/805/5160/817/9586/10000/801/5106/5257/1386/468/1375/126129/200186/2308/5162/5836/5532/5571/23235/1387/91860/5223/5534/207/5533/2033/5213/5567/31/5465/3708/1385/5214 |
| hsa05150 | Staphylococcus aureus infection | 79 | 0.373380614 | 1.479544293 | 0.025057789 | 0.0882243 | 0.061820204 | 3104 | tags=34%, list=21%, signal=27% | 4153/2266/55894/3861/5340/147183/1673/3383/3881/629/54474/390792/25984/3118/2359/3866/3882/3860/3126/414325/353288/342574/125115/3886/718/720/717 |
| hsa05221 | Acute myeloid leukemia | 61 | -0.325745787 | -1.467348741 | 0.028291735 | 0.09858357 | 0.069079113 | 6274 | tags=57%, list=42%, signal=34% | 5595/3562/2322/1050/3265/7704/8503/3845/208/5605/3815/929/4893/8517/1436/1147/2885/51176/6688/1978/10000/6655/6777/5594/5295/5290/3551/6198/4790/6774/5604/207/369/3684/890 |
| hsa00062 | Fatty acid elongation | 19 | -0.48781342 | -1.625053443 | 0.028689 | 0.098947775 | 0.069334317 | 3662 | tags=63%, list=24%, signal=48% | 3030/5538/11332/641371/54898/122970/79071/6785/3032/3033/51144/79993 |
| hsa04142 | Lysosome | 107 | -0.267318542 | -1.3359582 | 0.03059287 | 0.104448386 | 0.073188685 | 5953 | tags=52%, list=40%, signal=32% | 8763/3423/2720/8372/1509/10053/5641/5538/9583/8722/79158/51172/22901/9114/130340/8546/527/26985/427/55353/8907/967/3916/256471/23335/162/26503/8905/3988/1512/2799/950/1513/4864/9516/2760/3920/10312/5476/6556/175/2519/2548/23431/1777/2717/9741/3074/23062/2581/1176/10947/533/2990/3482/1211 |
| hsa04724 | Glutamatergic synapse | 99 | 0.354551618 | 1.443857371 | 0.031661795 | 0.107016868 | 0.074988462 | 3495 | tags=39%, list=23%, signal=30% | 2891/2913/22941/51764/5535/2916/55970/2903/2899/2911/107/108/2893/2898/5568/57030/2914/773/2917/283748/2905/255189/2784/9229/2901/9456/50944/775/6512/6506/5582/2900/111/114/2918/8605/776/2792/2786 |
| hsa04620 | Toll-like receptor signaling pathway | 90 | 0.352875111 | 1.427222038 | 0.032953105 | 0.110278708 | 0.077274087 | 1698 | tags=19%, list=11%, signal=17% | 3452/414062/3569/6348/3444/3627/3441/6373/3553/3443/4283/3725/4792/5600/5296/6351/3456 |
| hsa00533 | Glycosaminoglycan biosynthesis - keratan sulfate | 13 | -0.52880895 | -1.577035313 | 0.037495039 | 0.124248266 | 0.087062783 | 2746 | tags=38%, list=18%, signal=31% | 10678/6482/8702/6483/2530 |
| hsa05161 | Hepatitis B | 136 | -0.244627038 | -1.285067726 | 0.039421767 | 0.129364633 | 0.090647905 | 3381 | tags=35%, list=22%, signal=27% | 7097/7099/54205/9586/6773/10000/6655/9641/7529/10971/23118/1386/468/6775/6777/5594/5295/3454/5290/7534/5578/1643/1432/3551/898/1387/4790/7046/6774/7419/5604/5579/6885/9134/207/4214/2033/3716/836/841/6416/1870/1385/369/5925/890/5111 |
| hsa04130 | SNARE interactions in vesicular transport | 26 | -0.42723366 | -1.542813323 | 0.04175603 | 0.130234068 | 0.091257132 | 5159 | tags=54%, list=34%, signal=35% | 6811/6809/10652/143187/2054/9341/10490/6845/10282/8417/662/9570/9554/8674 |
| hsa04610 | Complement and coagulation cascades | 74 | 0.359383337 | 1.414166062 | 0.041397154 | 0.130234068 | 0.091257132 | 3275 | tags=35%, list=22%, signal=28% | 2244/2165/4153/2266/2160/2158/5340/629/729/2243/722/710/5624/2/730/5104/2147/3053/9002/10878/733/718/720/717/2155/5327 |
| hsa04722 | Neurotrophin signaling pathway | 105 | -0.269239734 | -1.344904344 | 0.041471822 | 0.130234068 | 0.091257132 | 3680 | tags=55%, list=24%, signal=42% | 397/8503/6464/2889/3845/4217/208/5605/396/7531/5601/4893/25/5906/11108/5609/6300/998/2885/2309/805/7189/5598/817/5663/10000/10019/5664/6655/1398/9261/801/5335/468/5594/5295/6195/5290/1432/3551/57498/10782/4790/5170/91860/5781/5604/207/4214/3667/5908/4909/9500/5336/10818/10603/3656/2549 |
| hsa04012 | ErbB signaling pathway | 78 | -0.271731802 | -1.283789046 | 0.041259633 | 0.130234068 | 0.091257132 | 3161 | tags=35%, list=21%, signal=27% | 1978/10000/6655/1398/5335/6777/5594/5295/868/5290/5578/6198/27/5604/5579/4690/207/3084/867/5336/6416/5062/369/1950/1839/2549/374 |
| hsa04114 | Oocyte meiosis | 104 | -0.252906258 | -1.262406913 | 0.041180132 | 0.130234068 | 0.091257132 | 3699 | tags=37%, list=25%, signal=28% | 5501/3710/51434/22849/805/817/10459/7529/10971/801/132864/29882/5594/5527/23291/51433/6195/7534/5532/1432/5500/5525/898/91860/9133/5534/9985/5604/9134/5519/5533/8243/5567/8881/367/3708/5515/26271 |
| hsa05166 | Human T-cell leukemia virus 1 infection | 196 | -0.223816638 | -1.248055235 | 0.04199856 | 0.130234068 | 0.091257132 | 5648 | tags=47%, list=38%, signal=30% | 598/3554/9184/119504/8503/25847/3932/113/3845/208/5605/7417/4087/3689/8379/7132/5601/4088/4893/83447/3112/292/10524/3600/1029/6513/3134/8517/8850/1147/4089/7040/3127/10488/7048/51434/6908/3560/6688/64784/8061/9586/10000/11200/821/545/1386/468/1739/6777/29882/5594/5295/200186/51433/9020/5728/5290/7094/5532/5901/3551/898/1387/4790/3109/9133/7046/1031/5534/4487/3111/7419/5604/6929/9134/207/4214/9519/5533/2033/3716/896/5567/7514/8881/6416/1870/1385/811/5925/890 |
| hsa04975 | Fat digestion and absorption | 39 | 0.418857608 | 1.450242094 | 0.043785311 | 0.134540318 | 0.094274592 | 3619 | tags=46%, list=24%, signal=35% | 5319/5407/8399/64600/5322/338/19/26279/337/335/2169/84647/346606/376497/1208/39/1056/84649 |
| hsa00830 | Retinol metabolism | 46 | 0.407206881 | 1.448969849 | 0.045261669 | 0.13664295 | 0.09574794 | 3157 | tags=37%, list=21%, signal=29% | 7364/131/1543/130/7366/1555/1549/8630/10720/1577/8608/112724/1562/1544/1551/126/145226 |
| hsa04911 | Insulin secretion | 73 | 0.359663989 | 1.413473403 | 0.045278137 | 0.13664295 | 0.09574794 | 3378 | tags=36%, list=22%, signal=28% | 2641/3767/6616/3630/2695/10242/107/3780/108/139760/117/5568/6262/2645/885/1131/6804/775/27094/27445/5582/111/114/84699/90993/776 |
| hsa04623 | Cytosolic DNA-sensing pathway | 59 | 0.372378395 | 1.405484546 | 0.048452221 | 0.144927881 | 0.101553327 | 530 | tags=14%, list=4%, signal=13% | 3452/3569/3444/3627/3441/3553/3443/90865 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table S7-2. Results of DO analysis. | | | |  |  |  |  |  |
| ID | Description | GeneRatio | BgRatio | pvalue | p.adjust | qvalue | geneID | Count |
| DOID:62 | aortic valve disease | 12/580 | 60/10312 | 0.000104207 | 0.052291638 | 0.048882586 | NPPC/NPPB/MBL2/PTH/TNFRSF11B/TNFSF11/ADAMTS19/EGFR/ENPP1/ADRB1/IL1RN/IL6 | 12 |
| DOID:10754 | otitis media | 12/580 | 61/10312 | 0.000123215 | 0.052291638 | 0.048882586 | SCGB1A1/MBL2/MUC5AC/PTH/SALL4/PHEX/BTC/ENPP1/SCN2B/RNASE3/MECOM/IL6 | 12 |
| DOID:5100 | middle ear disease | 12/580 | 62/10312 | 0.00014512 | 0.052291638 | 0.048882586 | SCGB1A1/MBL2/MUC5AC/PTH/SALL4/PHEX/BTC/ENPP1/SCN2B/RNASE3/MECOM/IL6 | 12 |
| DOID:2742 | auditory system disease | 32/580 | 297/10312 | 0.000297323 | 0.080351668 | 0.075113298 | SCGB1A1/RELN/MBL2/GAB1/MUC5AC/TNC/PDZD7/PTH/ATP2B2/TBX2/SALL4/PHEX/BDP1/CABP2/PCDH15/SMPX/BTC/HOMER2/ACTBL2/DNAH17/OTOGL/KITLG/ENPP1/CLDN14/PDE1C/POU4F3/SCN2B/KCNJ10/RNASE3/MECOM/COL1A1/IL6 | 32 |
| DOID:11716 | prediabetes syndrome | 6/580 | 19/10312 | 0.000445531 | 0.083417597 | 0.07797935 | KCNJ11/GCG/CALCA/UCP1/IL1RN/IL6 | 6 |
| DOID:783 | end stage renal disease | 20/580 | 157/10312 | 0.000498496 | 0.083417597 | 0.07797935 | NPPC/NPPB/MBL2/PTH/SLC22A2/TNFRSF11B/NPHS2/PKD2/IL20/CFB/DRD2/ADRA1B/ENPP1/DRD1/CYP1A1/HAMP/FGB/COL1A1/IL1RN/IL6 | 20 |
| DOID:1074 | kidney failure | 36/580 | 360/10312 | 0.000540169 | 0.083417597 | 0.07797935 | NPPC/SCGB1A1/NPPB/SLC22A12/TH/CLDN19/MBL2/REN/PTH/SLC22A2/THPO/TNFRSF11B/NPHS2/TNFSF11/PKD2/PHEX/IL20/EGFR/SLC6A19/CD80/RB1/CFB/DRD2/ADRA1B/XDH/ENPP1/GUCA2B/DRD1/ITGAM/CYP1A1/HAMP/FGB/COL1A1/MB/IL1RN/IL6 | 36 |
| DOID:1100 | ovarian disease | 28/580 | 261/10312 | 0.000747748 | 0.101039438 | 0.094452369 | CYP17A1/NPPB/INS/TH/ACVR1/PTH/GIP/TNFRSF11B/KCNJ11/SALL4/ADAMTS19/KLK3/DRD2/ADRA1B/NGFR/KITLG/KISS1/ADRA2B/ENPP1/IAPP/FSHR/CYP1A1/HAMP/PGRMC1/TGFBR3/IL1RN/HSF2BP/IL6 | 28 |
| DOID:11612 | polycystic ovary syndrome | 22/580 | 188/10312 | 0.000864312 | 0.103813501 | 0.097045582 | CYP17A1/NPPB/INS/TH/ACVR1/PTH/GIP/TNFRSF11B/KCNJ11/KLK3/ADRA1B/NGFR/KISS1/ADRA2B/ENPP1/IAPP/FSHR/CYP1A1/HAMP/TGFBR3/IL1RN/IL6 | 22 |
| DOID:229 | female reproductive system disease | 39/580 | 421/10312 | 0.001407163 | 0.140080599 | 0.130948318 | CYP17A1/ALDH18A1/NPPB/INS/TH/ACVR1/MBL2/VIP/KLRD1/TNC/PTH/GIP/TNFRSF11B/KCNJ11/SALL4/ADAMTS19/KLK3/RB1/DRD2/ADRA1B/NGFR/SNCA/KITLG/KISS1/ARNT/EZH2/ADRA2B/ENPP1/IAPP/FSHR/PDPN/CYP1A1/HAMP/PGRMC1/TGFBR3/SPINK1/IL1RN/HSF2BP/IL6 | 39 |
| DOID:0050524 | maturity-onset diabetes of the young | 5/580 | 16/10312 | 0.001438064 | 0.140080599 | 0.130948318 | INS/TGM2/KCNJ11/PAX4/HNF4A | 5 |
| DOID:53 | pituitary gland disease | 14/580 | 102/10312 | 0.001645326 | 0.140080599 | 0.130948318 | PCNA/CSH1/INS/SIX3/KLK3/GHSR/GHR/AVPR1B/RB1/DRD2/MAP2/NGFR/SOX3/IL6 | 14 |
| DOID:2799 | bronchiolitis obliterans | 7/580 | 32/10312 | 0.001684596 | 0.140080599 | 0.130948318 | SCGB1A1/MBL2/CXCL11/CCL17/GZMB/IL1RN/IL6 | 7 |
| DOID:1414 | ovarian dysfunction | 22/580 | 199/10312 | 0.001822014 | 0.140685545 | 0.131513825 | CYP17A1/NPPB/INS/TH/ACVR1/PTH/GIP/TNFRSF11B/KCNJ11/KLK3/ADRA1B/NGFR/KISS1/ADRA2B/ENPP1/IAPP/FSHR/CYP1A1/HAMP/TGFBR3/IL1RN/IL6 | 22 |
| DOID:784 | chronic kidney disease | 23/580 | 213/10312 | 0.001977957 | 0.1425448 | 0.133251871 | NPPC/NPPB/MBL2/REN/PTH/SLC22A2/TNFRSF11B/NPHS2/TNFSF11/PKD2/IL20/CFB/DRD2/ADRA1B/XDH/ENPP1/DRD1/CYP1A1/HAMP/FGB/COL1A1/IL1RN/IL6 | 23 |
| DOID:0050646 | distal arthrogryposis | 5/580 | 18/10312 | 0.002568627 | 0.173542872 | 0.162229083 | TNNT3/PIEZO2/MYH15/MYBPC1/MYH2 | 5 |
| DOID:3308 | embryonal carcinoma | 6/580 | 27/10312 | 0.003309387 | 0.210438071 | 0.196718972 | PDS5B/EGFR/RB1/FGF8/CCNA2/PRDM1 | 6 |
| DOID:1920 | hyperuricemia | 6/580 | 28/10312 | 0.004015376 | 0.239466819 | 0.223855248 | NPPB/INS/SLC22A12/REN/SLC22A2/XDH | 6 |
| DOID:4079 | heart valve disease | 13/580 | 101/10312 | 0.004208945 | 0.239466819 | 0.223855248 | NPPC/NPPB/MBL2/PTH/TNFRSF11B/TNFSF11/ADAMTS19/EGFR/ENPP1/ADRB1/FGB/IL1RN/IL6 | 13 |
| DOID:974 | upper respiratory tract disease | 21/580 | 202/10312 | 0.004760625 | 0.257311763 | 0.240536825 | SCGB1A1/MBL2/ADAM33/MUC5AC/DEFB4A/VIP/S100A7/IL5/SFTPA2/EGFR/CFB/CALCA/CCL17/CXCL6/MUC12/NGFR/DRD1/RNASE3/IL33/IL1RN/IL6 | 21 |
| DOID:999 | hypereosinophilic syndrome | 4/580 | 14/10312 | 0.006304748 | 0.257950676 | 0.241134085 | SCGB1A1/IL5/CCL17/IL1RN | 4 |
| DOID:1712 | aortic valve stenosis | 7/580 | 40/10312 | 0.006322356 | 0.257950676 | 0.241134085 | NPPC/NPPB/PTH/TNFRSF11B/TNFSF11/ADRB1/IL1RN | 7 |
| DOID:2825 | nose disease | 18/580 | 168/10312 | 0.006332707 | 0.257950676 | 0.241134085 | SCGB1A1/MBL2/ADAM33/MUC5AC/VIP/S100A7/IL5/SFTPA2/EGFR/CFB/CALCA/CCL17/CXCL6/NGFR/RNASE3/IL33/IL1RN/IL6 | 18 |
| DOID:104 | bacterial infectious disease | 32/580 | 359/10312 | 0.006497159 | 0.257950676 | 0.241134085 | NPPC/LACRT/MC3R/MBL2/DEFB4A/REN/TNC/CXCL11/THPO/DEFB103B/TNFRSF11B/IL5/ARR3/DHH/PACRG/EGFR/CD80/CFB/CALCA/PRF1/CREB1/SNCA/GLI2/ATF3/B3GAT1/ITGAM/HCAR2/PRDM1/CD38/IL33/IL1RN/IL6 | 32 |
| DOID:4483 | rhinitis | 17/580 | 156/10312 | 0.006645952 | 0.257950676 | 0.241134085 | SCGB1A1/MBL2/ADAM33/MUC5AC/VIP/S100A7/IL5/SFTPA2/EGFR/CALCA/CCL17/CXCL6/NGFR/RNASE3/IL33/IL1RN/IL6 | 17 |
| DOID:3388 | periodontal disease | 18/580 | 169/10312 | 0.006729158 | 0.257950676 | 0.241134085 | MBL2/DEFB4A/VIP/DMP1/PROM1/TNFRSF11B/TNFSF11/FMOD/IL21/CD80/CXCL6/PDPN/CYP1A1/ADRB1/FGB/COL1A1/IL1RN/IL6 | 18 |
| DOID:12930 | dilated cardiomyopathy | 23/580 | 235/10312 | 0.006730476 | 0.257950676 | 0.241134085 | NPPC/NPPB/TNC/TMPO/MRGPRD/TNFRSF11B/TNNI1/MYOCD/MYPN/ITPR1/EGFR/LMOD2/TIMP3/LAMA4/ADORA1/NEBL/MYH15/MYBPC1/CYP1A1/MYH2/ICAM4/ADRB1/IL6 | 23 |
| DOID:3083 | chronic obstructive pulmonary disease | 28/580 | 304/10312 | 0.006853583 | 0.257950676 | 0.241134085 | PCNA/SCGB1A1/MBL2/ADAM33/MUC5AC/DEFB4A/F11/CXCL11/ADORA2B/TNFRSF11B/IL5/EGFR/CD80/NNMT/NTF3/CCL17/XDH/CHRNA5/B3GAT1/ITGAM/GZMB/CYP1A1/ADRB1/RNASE3/TGFBR3/COL1A1/IL1RN/IL6 | 28 |
| DOID:2163 | nasal cavity disease | 17/580 | 157/10312 | 0.007077125 | 0.257950676 | 0.241134085 | SCGB1A1/MBL2/ADAM33/MUC5AC/VIP/S100A7/IL5/SFTPA2/EGFR/CALCA/CCL17/CXCL6/NGFR/RNASE3/IL33/IL1RN/IL6 | 17 |
| DOID:2320 | obstructive lung disease | 28/580 | 305/10312 | 0.007158668 | 0.257950676 | 0.241134085 | PCNA/SCGB1A1/MBL2/ADAM33/MUC5AC/DEFB4A/F11/CXCL11/ADORA2B/TNFRSF11B/IL5/EGFR/CD80/NNMT/NTF3/CCL17/XDH/CHRNA5/B3GAT1/ITGAM/GZMB/CYP1A1/ADRB1/RNASE3/TGFBR3/COL1A1/IL1RN/IL6 | 28 |
| DOID:0080162 | lupus nephritis | 6/580 | 32/10312 | 0.007982514 | 0.278357997 | 0.260210991 | MBL2/TNFRSF11B/CFB/ITGAM/COL1A1/IL1RN | 6 |
| DOID:824 | periodontitis | 16/580 | 147/10312 | 0.008411255 | 0.284142701 | 0.265618572 | MBL2/DEFB4A/VIP/DMP1/PROM1/TNFRSF11B/TNFSF11/FMOD/CXCL6/PDPN/CYP1A1/ADRB1/FGB/COL1A1/IL1RN/IL6 | 16 |
| DOID:10825 | essential hypertension | 15/580 | 137/10312 | 0.009998409 | 0.311834328 | 0.291504898 | NPPB/TH/REN/SLC22A2/CYP4A11/ADRA2B/GUCA2B/DRD1/ALOX12/GRK4/LPA/SLCO1B1/ADRB1/IL1RN/IL6 | 15 |
| DOID:12217 | Lewy body dementia | 8/580 | 54/10312 | 0.010053863 | 0.311834328 | 0.291504898 | PCNA/TH/KLK6/HCRT/MAP2/NGFR/SNCA/SNCB | 8 |
| DOID:6364 | migraine | 11/580 | 88/10312 | 0.010096394 | 0.311834328 | 0.291504898 | NPPB/SCN1A/MEP1A/GABRE/HRH3/CALCA/DRD2/ADRA2B/HCRTR2/IL1RN/IL6 | 11 |
| DOID:0050563 | nonsyndromic deafness | 16/580 | 151/10312 | 0.010766217 | 0.314784147 | 0.29426241 | GAB1/TNC/PDZD7/ATP2B2/BDP1/CABP2/PCDH15/SMPX/HOMER2/ACTBL2/OTOGL/KITLG/CLDN14/PDE1C/POU4F3/KCNJ10 | 16 |
| DOID:13189 | gout | 6/580 | 34/10312 | 0.010774296 | 0.314784147 | 0.29426241 | SLC22A12/TNFSF11/LPA/A1CF/IL33/IL6 | 6 |
| DOID:1247 | blood coagulation disease | 22/580 | 235/10312 | 0.012979109 | 0.331022982 | 0.309442585 | SCGB1A1/SERPINA10/MBL2/F11/FLI1/CALR/THPO/NPHS2/ANO6/F13B/IL21/CD80/CFB/F2R/PRF1/ITGAM/FGG/FGB/F9/IL1RN/RAB27B/IL6 | 22 |
| DOID:10892 | hypospadias | 5/580 | 26/10312 | 0.013598868 | 0.331022982 | 0.309442585 | CYP17A1/FGF10/FGF8/ATF3/CYP1A1 | 5 |
| DOID:11400 | pyelonephritis | 5/580 | 26/10312 | 0.013598868 | 0.331022982 | 0.309442585 | MBL2/CFB/CALCA/IL1RN/IL6 | 5 |
| DOID:2744 | pyelitis | 5/580 | 26/10312 | 0.013598868 | 0.331022982 | 0.309442585 | MBL2/CFB/CALCA/IL1RN/IL6 | 5 |
| DOID:5395 | functioning pituitary adenoma | 5/580 | 26/10312 | 0.013598868 | 0.331022982 | 0.309442585 | PCNA/AVPR1B/DRD2/NGFR/IL6 | 5 |
| DOID:9993 | hypoglycemia | 5/580 | 26/10312 | 0.013598868 | 0.331022982 | 0.309442585 | INS/TH/KCNJ11/HNF4A/IL6 | 5 |
| DOID:4481 | allergic rhinitis | 13/580 | 117/10312 | 0.014133617 | 0.331022982 | 0.309442585 | SCGB1A1/MBL2/ADAM33/MUC5AC/VIP/S100A7/IL5/SFTPA2/EGFR/CALCA/RNASE3/IL33/IL6 | 13 |
| DOID:9408 | acute myocardial infarction | 12/580 | 105/10312 | 0.014635994 | 0.331022982 | 0.309442585 | GJA4/NPPB/F11/PROM1/TNFRSF11B/CALCA/PRF1/PAPPA/ADRB1/FGB/IL33/IL6 | 12 |
| DOID:0050339 | commensal bacterial infectious disease | 10/580 | 81/10312 | 0.01502271 | 0.331022982 | 0.309442585 | NPPC/LACRT/MBL2/REN/THPO/ARR3/ITGAM/HCAR2/IL1RN/IL6 | 10 |
| DOID:13250 | diarrhea | 7/580 | 47/10312 | 0.015211931 | 0.331022982 | 0.309442585 | NEUROG3/GUCY2C/TNFRSF11B/KCNJ11/EGFR/MYO5B/SCNN1A | 7 |
| DOID:3324 | mood disorder | 26/580 | 295/10312 | 0.015256969 | 0.331022982 | 0.309442585 | ADARB1/ETV1/TH/RELN/MBL2/LARS2/RFX4/REN/PI4K2B/TNFRSF11B/IL5/FOXP2/DRD5/PDE1A/MC5R/AVPR1B/CHRNB4/DRD2/NGFR/CREB1/SNCA/NR4A3/DRD1/ALOX12/IL1RN/IL6 | 26 |
| DOID:0060774 | congenital diarrhea | 3/580 | 10/10312 | 0.015779663 | 0.331022982 | 0.309442585 | NEUROG3/GUCY2C/MYO5B | 3 |
| DOID:1803 | neuritis | 3/580 | 10/10312 | 0.015779663 | 0.331022982 | 0.309442585 | DPYSL5/HCRT/SNCA | 3 |
| DOID:0060121 | integumentary system benign neoplasm | 5/580 | 27/10312 | 0.015937387 | 0.331022982 | 0.309442585 | BCAM/S100A7/KRT31/MAGEA4/IL6 | 5 |
| DOID:3165 | skin benign neoplasm | 5/580 | 27/10312 | 0.015937387 | 0.331022982 | 0.309442585 | BCAM/S100A7/KRT31/MAGEA4/IL6 | 5 |
| DOID:3082 | interstitial lung disease | 23/580 | 254/10312 | 0.016229619 | 0.331022982 | 0.309442585 | SCGB1A1/INS/MBL2/MUC5AC/DEFB4A/TNC/CXCL11/IL5/DKK4/SFTPA2/EGFR/F2R/NTF3/TIMP3/CCL17/SERPINB3/B3GAT1/SRXN1/GZMB/HAMP/COL1A1/IL1RN/IL6 | 23 |
| DOID:1307 | dementia | 19/580 | 201/10312 | 0.01827407 | 0.365819802 | 0.341970894 | PCNA/NPPB/ANGPT4/TH/RELN/PENK/KLK6/EGFR/HCRT/DRD2/MAP2/NGFR/SNCA/SNCB/LRP8/LPA/KLK7/CETP/IL6 | 19 |
| DOID:1176 | bronchial disease | 29/580 | 344/10312 | 0.018861273 | 0.366562977 | 0.342665619 | SCGB1A1/ACVR1/MBL2/FANCC/ADAM33/MUC5AC/VIP/TNC/IL5/NPSR1/SFTPA2/ITPR1/CCL27/EGFR/IL21/CALCA/NTF3/TRPA1/CCL17/PRF1/XDH/ADORA1/SERPINB3/CYP1A1/RNASE3/IL33/IL1RN/SCNN1A/IL6 | 29 |
| DOID:3021 | acute kidney failure | 12/580 | 110/10312 | 0.02050489 | 0.366562977 | 0.342665619 | SCGB1A1/NPPB/REN/SLC22A2/PKD2/EGFR/SLC6A19/RB1/XDH/MB/IL1RN/IL6 | 12 |
| DOID:8778 | Crohn's disease | 12/580 | 110/10312 | 0.02050489 | 0.366562977 | 0.342665619 | MBL2/AQP7/EFS/IL21/CDX2/PRF1/CXCL6/PON3/MADCAM1/ALOX12/IL1RN/IL6 | 12 |
| DOID:1273 | respiratory syncytial virus infectious disease | 6/580 | 39/10312 | 0.020639326 | 0.366562977 | 0.342665619 | SCGB1A1/SFTPA2/CCL17/NGFR/GZMB/IL6 | 6 |
| DOID:1400 | lacrimal apparatus disease | 5/580 | 29/10312 | 0.021383765 | 0.366562977 | 0.342665619 | MUC5AC/IGSF3/CCL17/IL1RN/IL6 | 5 |
| DOID:1969 | cerebral palsy | 5/580 | 29/10312 | 0.021383765 | 0.366562977 | 0.342665619 | MBL2/ATL1/ADD3/PLP1/IL6 | 5 |
| DOID:6543 | acne | 5/580 | 29/10312 | 0.021383765 | 0.366562977 | 0.342665619 | INS/DEFB4A/S100A7/F2R/IL6 | 5 |
| DOID:9406 | hypopituitarism | 5/580 | 29/10312 | 0.021383765 | 0.366562977 | 0.342665619 | CSH1/SIX3/GHSR/GHR/SOX3 | 5 |
| DOID:5844 | myocardial infarction | 36/580 | 453/10312 | 0.022193057 | 0.366562977 | 0.342665619 | GJA4/NPPB/TH/MBL2/F11/REN/PROM1/TNC/KCNJ2/TNFRSF11B/KCNJ11/TNFSF11/GCG/F13B/F2R/CALCA/TIMP3/PRF1/PAPPA/ADRA2B/ENPP1/LRP8/LPA/GZMB/CCNA2/HAMP/FGG/CETP/ADRB1/FGB/IL33/COL1A1/MB/IL1RN/SLC27A6/IL6 | 36 |
| DOID:2723 | dermatitis | 22/580 | 248/10312 | 0.022773437 | 0.366562977 | 0.342665619 | MBL2/ADAM33/DEFB4A/VIP/S100A7/DEFB103B/KRT14/IL5/NPSR1/CCL27/IL20/CALCA/CCL17/DCD/NGFR/KITLG/CCL13/KLK7/RNASE3/COL1A1/IL1RN/IL6 | 22 |
| DOID:1596 | mental depression | 14/580 | 138/10312 | 0.023098832 | 0.366562977 | 0.342665619 | TH/REN/IL5/FOXP2/DRD5/PDE1A/AVPR1B/CHRNB4/DRD2/NGFR/SNCA/DRD1/IL1RN/IL6 | 14 |
| DOID:4677 | keratitis | 4/580 | 20/10312 | 0.023355462 | 0.366562977 | 0.342665619 | MUC5AC/DEFB4A/IL1RN/IL6 | 4 |
| DOID:1094 | attention deficit hyperactivity disorder | 9/580 | 75/10312 | 0.02423664 | 0.366562977 | 0.342665619 | SNAP25/THRSP/FOXP2/DRD5/AVPR1B/DRD2/XKR4/DRD1/IL1RN | 9 |
| DOID:9098 | sebaceous gland disease | 5/580 | 30/10312 | 0.02450998 | 0.366562977 | 0.342665619 | INS/DEFB4A/S100A7/F2R/IL6 | 5 |
| DOID:0050338 | primary bacterial infectious disease | 25/580 | 295/10312 | 0.026347839 | 0.366562977 | 0.342665619 | MC3R/MBL2/DEFB4A/TNC/CXCL11/DEFB103B/TNFRSF11B/IL5/DHH/PACRG/EGFR/CD80/CFB/CALCA/PRF1/CREB1/SNCA/GLI2/ATF3/B3GAT1/PRDM1/CD38/IL33/IL1RN/IL6 | 25 |
| DOID:0050650 | familial atrial fibrillation | 3/580 | 12/10312 | 0.026602884 | 0.366562977 | 0.342665619 | KCNJ2/MYL4/SCN2B | 3 |
| DOID:0111596 | distal arthrogryposis type 1 | 3/580 | 12/10312 | 0.026602884 | 0.366562977 | 0.342665619 | MYH15/MYBPC1/MYH2 | 3 |
| DOID:0111599 | distal arthrogryposis type 2B | 3/580 | 12/10312 | 0.026602884 | 0.366562977 | 0.342665619 | TNNT3/MYH15/MYH2 | 3 |
| DOID:10609 | rickets | 3/580 | 12/10312 | 0.026602884 | 0.366562977 | 0.342665619 | DMP1/PHEX/ENPP1 | 3 |
| DOID:1680 | chronic cystitis | 3/580 | 12/10312 | 0.026602884 | 0.366562977 | 0.342665619 | MUC5AC/FGF10/IL6 | 3 |
| DOID:8986 | narcolepsy | 3/580 | 12/10312 | 0.026602884 | 0.366562977 | 0.342665619 | CHKB/HCRT/HCRTR2 | 3 |
| DOID:76 | stomach disease | 10/580 | 89/10312 | 0.02734919 | 0.366562977 | 0.342665619 | MUC5AC/DEFB4A/PTH/DEFB103B/RB1/CALCA/CDX2/XDH/MADCAM1/IL1RN | 10 |
| DOID:6000 | congestive heart failure | 29/580 | 355/10312 | 0.027401614 | 0.366562977 | 0.342665619 | NPPC/NPPB/TH/MBL2/VIP/CALR/REN/PROM1/PTH/TNFRSF11B/TNNI1/KCNJ11/IL5/ITPR1/RAMP3/CALCA/ADRA1B/TIMP3/FRMD4B/LAMA4/ADORA1/NGFR/ALOX12/PPP1R1A/GRK1/PPP2CA/HAMP/ADRB1/IL6 | 29 |
| DOID:0060118 | thoracic disease | 4/580 | 21/10312 | 0.027602904 | 0.366562977 | 0.342665619 | PCNA/CYP17A1/EGFR/ERCC4 | 4 |
| DOID:2559 | opiate dependence | 4/580 | 21/10312 | 0.027602904 | 0.366562977 | 0.342665619 | PENK/NPSR1/DRD2/DRD1 | 4 |
| DOID:3463 | breast disease | 4/580 | 21/10312 | 0.027602904 | 0.366562977 | 0.342665619 | PCNA/CYP17A1/EGFR/ERCC4 | 4 |
| DOID:0090070 | hypogonadotropic hypogonadism | 5/580 | 31/10312 | 0.027915427 | 0.366562977 | 0.342665619 | NHLH2/PROKR2/FGF8/KISS1/TCF12 | 5 |
| DOID:11123 | Henoch-Schoenlein purpura | 5/580 | 31/10312 | 0.027915427 | 0.366562977 | 0.342665619 | SCGB1A1/NPHS2/IL5/IL1RN/IL6 | 5 |
| DOID:535 | sleep disorder | 9/580 | 77/10312 | 0.028224055 | 0.366562977 | 0.342665619 | CHKB/AANAT/GHSR/HCRT/CXCL6/ADORA1/HCRTR2/ADRB1/IL6 | 9 |
| DOID:3310 | atopic dermatitis | 17/580 | 183/10312 | 0.028633346 | 0.366562977 | 0.342665619 | MBL2/ADAM33/DEFB4A/VIP/S100A7/DEFB103B/IL5/NPSR1/CCL27/CALCA/CCL17/DCD/NGFR/KITLG/CCL13/KLK7/RNASE3 | 17 |
| DOID:0050848 | obstructive sleep apnea | 6/580 | 42/10312 | 0.028823176 | 0.366562977 | 0.342665619 | GHSR/HCRT/CXCL6/ADORA1/ADRB1/IL6 | 6 |
| DOID:5295 | intestinal disease | 33/580 | 417/10312 | 0.029228967 | 0.367401312 | 0.343449301 | MBL2/AQP7/DEFB4A/VIP/TNFRSF11B/IL5/GCG/PDS5B/NPSR1/MEP1A/ANO6/FGF10/EFS/EGFR/GHR/IL21/CALCA/CDX2/PRF1/TFF1/CXCL6/NGFR/KITLG/PON3/MADCAM1/ALOX12/MLXIPL/CCNA2/IL33/COL1A1/DLG5/IL1RN/IL6 | 33 |
| DOID:11335 | sarcoidosis | 12/580 | 116/10312 | 0.029668154 | 0.368428111 | 0.34440916 | SCGB1A1/NPPB/DEFB4A/VIP/TNC/CXCL11/CD80/NTF3/CCL17/COL1A1/IL1RN/IL6 | 12 |
| DOID:3770 | pulmonary fibrosis | 18/580 | 198/10312 | 0.029992298 | 0.368428111 | 0.34440916 | SCGB1A1/MBL2/MUC5AC/DEFB4A/IL5/DKK4/SFTPA2/EGFR/F2R/NTF3/TIMP3/CCL17/SERPINB3/B3GAT1/SRXN1/COL1A1/IL1RN/IL6 | 18 |
| DOID:9809 | hypersensitivity vasculitis | 5/580 | 32/10312 | 0.031606707 | 0.383897195 | 0.358869767 | SCGB1A1/NPHS2/IL5/IL1RN/IL6 | 5 |
| DOID:3702 | cervical adenocarcinoma | 4/580 | 22/10312 | 0.032280895 | 0.385154543 | 0.360045145 | EGFR/CDX2/TFF1/SPINK1 | 4 |
| DOID:0060870 | isolated growth hormone deficiency | 3/580 | 13/10312 | 0.033170671 | 0.385154543 | 0.360045145 | CSH1/GHSR/GHR | 3 |
| DOID:1785 | pituitary cancer | 3/580 | 13/10312 | 0.033170671 | 0.385154543 | 0.360045145 | CALCA/SFRP4/IL6 | 3 |
| DOID:9778 | irritable bowel syndrome | 10/580 | 92/10312 | 0.033441421 | 0.385154543 | 0.360045145 | MBL2/DEFB4A/TNFRSF11B/GCG/NPSR1/MEP1A/MLXIPL/IL33/DLG5/IL6 | 10 |
| DOID:10241 | thalassemia | 8/580 | 67/10312 | 0.033491699 | 0.385154543 | 0.360045145 | NPPB/INS/TNFRSF11B/TNFSF11/CFB/HAMP/COL1A1/IL6 | 8 |
| DOID:4195 | hyperglycemia | 17/580 | 187/10312 | 0.03426793 | 0.389932968 | 0.364512049 | NEUROG3/INS/REN/GIP/KCNJ11/GCG/CFB/HCRT/HRH3/XDH/ENPP1/DRD1/IAPP/HCRTR2/ADRB1/IL1RN/IL6 | 17 |
| DOID:2841 | asthma | 27/580 | 333/10312 | 0.035225652 | 0.393623827 | 0.36796229 | SCGB1A1/ACVR1/MBL2/FANCC/ADAM33/MUC5AC/VIP/TNC/IL5/NPSR1/SFTPA2/ITPR1/CCL27/EGFR/IL21/CALCA/NTF3/TRPA1/CCL17/PRF1/XDH/ADORA1/SERPINB3/RNASE3/IL33/IL1RN/IL6 | 27 |
| DOID:12716 | newborn respiratory distress syndrome | 6/580 | 44/10312 | 0.035320547 | 0.393623827 | 0.36796229 | NPPB/MBL2/TNC/NPSR1/SFTPA2/IL6 | 6 |
| DOID:3829 | pituitary adenoma | 8/580 | 68/10312 | 0.036167907 | 0.394924314 | 0.369177995 | PCNA/GHR/AVPR1B/RB1/DRD2/MAP2/NGFR/IL6 | 8 |
| DOID:60009 | pituitary gland benign neoplasm | 8/580 | 68/10312 | 0.036167907 | 0.394924314 | 0.369177995 | PCNA/GHR/AVPR1B/RB1/DRD2/MAP2/NGFR/IL6 | 8 |
| DOID:11870 | Pick's disease | 4/580 | 23/10312 | 0.037394312 | 0.400230213 | 0.374137986 | ADORA1/CREB1/SNCA/SNCB | 4 |
| DOID:9974 | drug dependence | 4/580 | 23/10312 | 0.037394312 | 0.400230213 | 0.374137986 | PENK/NPSR1/DRD2/DRD1 | 4 |
| DOID:3371 | chondrosarcoma | 8/580 | 69/10312 | 0.038984639 | 0.41300055 | 0.386075786 | SIX3/TNC/TNFSF11/RB1/F2R/NR4A3/PDPN/IL6 | 8 |
| DOID:121 | vaginal disease | 3/580 | 14/10312 | 0.040497741 | 0.41300055 | 0.386075786 | MBL2/IL1RN/IL6 | 3 |
| DOID:2170 | vaginitis | 3/580 | 14/10312 | 0.040497741 | 0.41300055 | 0.386075786 | MBL2/IL1RN/IL6 | 3 |
| DOID:3385 | bacterial vaginosis | 3/580 | 14/10312 | 0.040497741 | 0.41300055 | 0.386075786 | MBL2/IL1RN/IL6 | 3 |
| DOID:5425 | ovarian hyperstimulation syndrome | 3/580 | 14/10312 | 0.040497741 | 0.41300055 | 0.386075786 | DRD2/FSHR/IL6 | 3 |
| DOID:11476 | osteoporosis | 13/580 | 136/10312 | 0.042338236 | 0.424462384 | 0.396790387 | PCNA/CSH1/CYP17A1/PTH/TNFRSF11B/TNFSF11/GHR/CALCA/BMP2K/CYP1A1/COL1A1/IL1RN/IL6 | 13 |
| DOID:3042 | allergic contact dermatitis | 17/580 | 192/10312 | 0.042406973 | 0.424462384 | 0.396790387 | MBL2/ADAM33/DEFB4A/VIP/S100A7/DEFB103B/IL5/NPSR1/CCL27/CALCA/CCL17/DCD/NGFR/KITLG/CCL13/KLK7/RNASE3 | 17 |
| DOID:552 | pneumonia | 15/580 | 164/10312 | 0.042898285 | 0.425440789 | 0.397705007 | SCGB1A1/MBL2/MUC5AC/DEFB4A/TNC/IL5/SFTPA2/CALCA/NTF3/CCL17/PDPN/CYP1A1/COL1A1/IL1RN/IL6 | 15 |
| DOID:1116 | pertussis | 5/580 | 35/10312 | 0.044445455 | 0.428688233 | 0.40074074 | LACRT/ARR3/ITGAM/HCAR2/IL6 | 5 |
| DOID:1557 | hypersensitivity reaction type III disease | 5/580 | 35/10312 | 0.044445455 | 0.428688233 | 0.40074074 | SCGB1A1/NPHS2/IL5/IL1RN/IL6 | 5 |
| DOID:0080011 | bone resorption disease | 13/580 | 137/10312 | 0.0444876 | 0.428688233 | 0.40074074 | PCNA/CSH1/CYP17A1/PTH/TNFRSF11B/TNFSF11/GHR/CALCA/BMP2K/CYP1A1/COL1A1/IL1RN/IL6 | 13 |
| DOID:0060036 | intrinsic cardiomyopathy | 29/580 | 371/10312 | 0.044811998 | 0.428688233 | 0.40074074 | NPPC/CAPN2/PDLIM3/NPPB/TNNT3/TNC/TMPO/MRGPRD/KCNJ2/TNFRSF11B/TNNI1/MYOCD/MYPN/ITPR1/EGFR/LMOD2/TIMP3/LAMA4/ADORA1/KCND2/NEBL/MYH15/CACNB2/MYBPC1/CYP1A1/MYH2/ICAM4/ADRB1/IL6 | 29 |
| DOID:0080015 | physical disorder | 26/580 | 327/10312 | 0.046699753 | 0.433892215 | 0.405605459 | CSH1/CYP17A1/TDGF1/RELN/ARNT2/SIX3/CHKB/EML1/TBX2/DNAI1/MYF5/FOXP2/FGF10/EGFR/MID1/FGF8/COX5A/IFT80/GLI2/ATF3/MYO18B/CCDC39/CYP1A1/CC2D2A/FREM2/PRRX1 | 26 |
| DOID:0060056 | hypersensitivity reaction disease | 14/580 | 152/10312 | 0.04695677 | 0.433892215 | 0.405605459 | SCGB1A1/NPPB/DEFB4A/VIP/TNC/CXCL11/NPHS2/IL5/CD80/NTF3/CCL17/COL1A1/IL1RN/IL6 | 14 |
| DOID:2773 | contact dermatitis | 17/580 | 195/10312 | 0.047911464 | 0.433892215 | 0.405605459 | MBL2/ADAM33/DEFB4A/VIP/S100A7/DEFB103B/IL5/NPSR1/CCL27/CALCA/CCL17/DCD/NGFR/KITLG/CCL13/KLK7/RNASE3 | 17 |
| DOID:0050144 | Kartagener syndrome | 3/580 | 15/10312 | 0.048567029 | 0.433892215 | 0.405605459 | MBL2/DNAI1/CCDC39 | 3 |
| DOID:0050523 | adult T-cell leukemia/lymphoma | 3/580 | 15/10312 | 0.048567029 | 0.433892215 | 0.405605459 | IL5/CD80/IL6 | 3 |
| DOID:0050534 | congenital stationary night blindness | 3/580 | 15/10312 | 0.048567029 | 0.433892215 | 0.405605459 | GPR179/GRM6/GRK1 | 3 |
| DOID:5394 | prolactinoma | 3/580 | 15/10312 | 0.048567029 | 0.433892215 | 0.405605459 | PCNA/DRD2/NGFR | 3 |
| DOID:8498 | hereditary night blindness | 3/580 | 15/10312 | 0.048567029 | 0.433892215 | 0.405605459 | GPR179/GRM6/GRK1 | 3 |