**S2 Table.**

Down-stream target molecules of candidate up-stream regulators exhibiting significant alterations in MSCs under stimulatory conditions relative to non-stimulatory conditions

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| --- | --- | --- | --- |
| **Upstream regulator** | **Molecule type** | **p-value of** **overlap** | **Target molecules****in dataset** |
| TP53 | Transcription regulator | 1.63 x 10-10 | ADA,ARHGEF2,ATG4A,BRAF,BTG2,CARS,CASP8,CCNA2,CCNB1,CD59,CDK1,CENPF,CEP55,CES2,CYFIP2,DDB2,DDIT4,DRAM1,ERCC1,GLIPR1,HMMR,KCNG1,MAPK3,MOCOS,NDC80,NDRG1,NEDD8,NEK2,NINJ1,NOX4,PIDD1,PLAUR,RBBP6,SMC4,SNAI1,SPATA18,TANK,TBL1X,TCF7L2,TGFBR2,TMEM97,ULK1,VRK1 |
| TRIB3 | Kinase | 5.05 x 10-8 | ASNS,DDIT4,GARS,MTHFD2,PCK2,PSAT1,PSPH |
| TGFB1 | Growth factor | 7.5 x 10-7 | ADAM19,ANGPTL4,ASPM,CCL2,CCNA2,CCNB1,CD59,CDK1,CENPE,CENPF,CHI3L1,COL5A1,LTBP3,MAPK3,NDC80,NEDD9,NEK2,NRP1,PLAUR,SCD,SERPINH1,SNAI1,TGFB1I1,TGFBR2,TGM2 |
| RABL6 | Other | 9.38 x 10-7 | BTG2,CCNA2,CCNB1,CENPF,DRAM1,HMMR,NDC80,NEK2,SERPINH1,TMEM97,VRK1 |
| ATF4 | Transcription regulator | 1.14 x 10-6 | ASNS,CHAC1,DDIT4,PCK2,PHGDH,PSAT1,PSPH |