Table 2 Result of target pathway enrichment (top 20)

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| Pathway ID | Pathway name | Gene Name | Count | P value |
| hsa04933 | AGE-RAGE signaling pathway in diabetic complications | *BAX/MMP2/MAPK1/JUN/IL6/CASP3/PRKCA/STAT1/F3/ICAM1/IL1B/CCL2/SELE/VCAM1/CXCL8/PRKCB/NOS3/THBD/SERPINE1/COL1A1/IL1A/COL3A1* | 22 | 3.46E-22 |
| hsa04010 | MAPK signaling pathway | *FOS/MAPK1/EGF/JUN/CASP3/RAF1/PRKCA/ERBB2/MYC/IL1B/PRKCB/HSPB1/IL1A/*  *INSR/IGF2/ERBB3/RASA1* | 17 | 1.04E-07 |
| hsa04151 | PI3K-Akt signaling pathway | *RXRA/CDKN1A/CASP9/MAPK1/EGF/IL6/RAF1/PRKCA/ERBB2/MYC/NOS3/IL2/COL1A1/INSR/SPP1/IGF2/ERBB3* | 17 | 1.38E-06 |
| hsa04668 | TNF signaling pathway | *PTGS2/FOS/MMP9/MAPK1/JUN/IL6/CASP3/CASP8/ICAM1/IL1B/CCL2/SELE/VCAM1/CXCL10/IRF1* | 15 | 5.17E-12 |
| hsa04657 | IL-17 signaling pathway | *PTGS2/FOS/MMP9/MAPK1/JUN/IL6/CASP3/CASP8/MMP1/IL1B/CCL2/CXCL8/IFNG/*  *CXCL10* | 14 | 5.44E-12 |
| hsa01522 | Endocrine resistance | *ESR1/ESR2/FOS/CDKN1A/BAX/MMP2/MMP9/MAPK1/RB1/JUN/RAF1/ERBB2/E2F1* | 13 | 1.71E-10 |
| hsa04066 | HIF-1 signaling pathway | *CDKN1A/MAPK1/EGF/IL6/PRKCA/HIF1A/ERBB2/HMOX1/PRKCB/NOS3/SERPINE1/*  *IFNG/INSR* | 13 | 6.65E-10 |
| hsa04218 | Cellular senescence | *CDKN1A/MAPK1/RB1/IL6/RAF1/MYC/CXCL8/SERPINE1/IL1A/CHEK2/E2F1/IGFBP3/CHEK1* | 13 | 7.42E-08 |
| hsa04915 | Estrogen signaling pathway | *ESR1/NCOA2/OPRM1/ESR2/FOS/MMP2/MMP9/MAPK1/JUN/RAF1/NOS3/CTSD* | 12 | 1.16E-07 |
| hsa04625 | C-type lectin receptor signaling pathway | *PTGS2/MAPK1/IL10/JUN/IL6/CASP8/RAF1/STAT1/IL1B/IL2/IRF1* | 11 | 5.36E-08 |
| hsa04919 | Thyroid hormone signaling pathway | *ESR1/RXRA/NCOA2/CASP9/MAPK1/RAF1/PRKCA/HIF1A/STAT1/MYC/PRKCB* | 11 | 2.17E-07 |
| hsa04926 | Relaxin signaling pathway | *FOS/MMP2/MMP9/MAPK1/JUN/RAF1/PRKCA/MMP1/NOS3/COL1A1/COL3A1* | 11 | 5.35E-07 |
| hsa04210 | Apoptosis | *FOS/BAX/CASP9/MAPK1/JUN/CASP3/CASP8/RAF1/BIRC5/PARP1/CTSD* | 11 | 8.43E-07 |
| hsa04012 | ErbB signaling pathway | *CDKN1A/MAPK1/EGF/JUN/RAF1/PRKCA/ERBB2/MYC/PRKCB/ERBB3* | 10 | 8.06E-08 |
| hsa04620 | Toll-like receptor signaling pathway | *FOS/MAPK1/JUN/IL6/CASP8/STAT1/IL1B/*  *CXCL8/CXCL10/SPP1* | 10 | 5.54E-07 |
| hsa04659 | Th17 cell differentiation | *RXRA/FOS/MAPK1/JUN/IL6/HIF1A/STAT1/*  *IL1B/IL2/IFNG* | 10 | 7.23E-07 |
| hsa04115 | p53 signaling pathway | *CDKN1A/BAX/CASP9/CASP3/CASP8/SERPINE1/CHEK2/IGFBP3/CHEK1* | 9 | 2.19E-07 |
| hsa04064 | NF-kappa B signaling pathway | *PTGS2/PLAU/ICAM1/IL1B/VCAM1/CXCL8/PRKCB/PARP1/CD40LG* | 9 | 3.68E-06 |
| hsa04921 | Oxytocin signaling pathway | *PTGS2/FOS/CDKN1A/MAPK1/JUN/RAF1/*  *PRKCA/PRKCB/NOS3* | 9 | 0.000112 |
| hsa04630 | JAK-STAT signaling pathway | *CDKN1A/IL10/EGF/IL6/RAF1/STAT1/MYC/*  *IL2/IFNG* | 9 | 0.000173 |