**Supplementary Table 8**: results of pathway meta-analysis with corrected comparative p<0.50. The three top genes for each gene set are reported.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Phenotype** | **Gene set** | **Description** | **N of included genes** | **Comparative p** | **Comparative p corrected** | **Top genes** |
| TRD vs. others | JAZAG TGFB1 SIGNALING UP | Genes up-regulated by TGF1B in pancreatic cancer cells | 106 | 2.87e-05 | 0.37 | PPP1R17 (p=0.004); VPS4A (p=0.014);  CORIN (p=0.019) |
| GO:0045814 | Negative regulation of gene expression | 86 | 2.91e-05 | 0.38 | JARID2 (p=0.015); HIST1H4E (p=0.015); BEND3 (p=0.018) |
| TRD vs. responders | VANDESLUIS  NORMAL EMBRYOS UP | Genes up-regulated in normal 9.5 days embryos | 5 | 2.58e-05 | 0.35 | PPFIA2 (p= 0.037);  HESX1 (p=0.067);  ETV2 (p=0.28) |
| GSE13306 RA VS UNTREATED MEM CD4 TCELL DN | Genes down-regulated in comparison of memory CD4 T cells treated with tretinoin vs. untreated | 199 | 3.73e-05 | 0.46 | NEDD4 (p= 0.0004); MXRA7 (p= 0.0044); PKM2 (p=0.011) |