

S3 Table. Gene Set Enrichment Analysis (GSEA; Hallmark) of pathways differentially expressed in HCT116^{PARP1-/-} and HCT-116^{EV} cells

| Rank | NAME | SIZE | ES | NES | NOM p-val | FDR q-val | FWER p-val |
|------|-----------------------------------|------|-------------|------------|-------------|-------------|------------|
| 1 | INTERFERON ALPHA RESPONSE | 97 | -0.7231735 | -2.1192596 | 0 | 0 | 0 |
| 2 | INTERFERON GAMMA RESPONSE | 197 | -0.6080619 | -1.8955262 | 0 | 0 | 0 |
| 3 | COMPLEMENT | 197 | -0.5680321 | -1.7659404 | 0 | 0.001042424 | 0.003 |
| 4 | COAGULATION | 134 | -0.521067 | -1.5714287 | 0 | 0.013699746 | 0.052 |
| 5 | GLYCOLYSIS | 192 | -0.49423343 | -1.5465838 | 0 | 0.017949354 | 0.084 |
| 6 | TNFA SIGNALING VIA NFKB | 200 | -0.49499783 | -1.5449282 | 0.001146789 | 0.015646571 | 0.088 |
| 7 | XENOBIOTIC METABOLISM | 194 | -0.49280316 | -1.5325973 | 0.001153403 | 0.016550716 | 0.105 |
| 8 | P53 PATHWAY | 191 | -0.49366593 | -1.5269948 | 0 | 0.01593217 | 0.116 |
| 9 | IL6 JAK STAT3 SIGNALING | 86 | -0.53433394 | -1.5118597 | 0.007633588 | 0.017360808 | 0.14 |
| 10 | APOPTOSIS | 158 | -0.49061725 | -1.5059491 | 0 | 0.017277187 | 0.155 |
| 11 | PROTEIN SECRETION | 90 | -0.5280493 | -1.5024619 | 0.006289308 | 0.016266033 | 0.16 |
| 12 | KRAS SIGNALING UP | 192 | -0.48521218 | -1.5013741 | 0.001141553 | 0.014986771 | 0.161 |
| 13 | TGF BETA SIGNALING | 52 | -0.5702851 | -1.4979786 | 0.008633094 | 0.014698471 | 0.171 |
| 14 | ESTROGEN RESPONSE EARLY | 193 | -0.48061672 | -1.4914694 | 0 | 0.014675021 | 0.182 |
| 15 | ESTROGEN RESPONSE LATE | 196 | -0.47598296 | -1.484907 | 0.003541913 | 0.015013523 | 0.198 |
| 16 | INFLAMMATORY RESPONSE | 195 | -0.47079644 | -1.4587399 | 0 | 0.019632805 | 0.267 |
| 17 | PI3K AKT MTOR SIGNALING | 99 | -0.49217382 | -1.4451302 | 0.013613861 | 0.021332117 | 0.301 |
| 18 | REACTIVE OXIGEN SPECIES PATHWAY | 45 | -0.5604581 | -1.4323187 | 0.025435073 | 0.023076735 | 0.334 |
| 19 | APICAL SURFACE | 43 | -0.5480154 | -1.4155499 | 0.041436464 | 0.028051723 | 0.401 |
| 20 | ALLOGRAFT REJECTION | 192 | -0.4466615 | -1.3910681 | 0.013544018 | 0.036374316 | 0.505 |
| 21 | CHOLESTEROL HOMEOSTASIS | 72 | -0.4924241 | -1.3872652 | 0.032258064 | 0.03600661 | 0.524 |
| 22 | UV RESPONSE DN | 142 | -0.45878932 | -1.3848742 | 0.018359853 | 0.035427425 | 0.533 |
| 23 | BILE ACID METABOLISM | 105 | -0.47216162 | -1.3771594 | 0.016209476 | 0.036808584 | 0.567 |
| 24 | APICAL JUNCTION | 194 | -0.4305168 | -1.3313518 | 0.015046297 | 0.06063277 | 0.769 |
| 25 | MTORC1 SIGNALING | 195 | -0.42625314 | -1.3275641 | 0.012910798 | 0.060576834 | 0.783 |
| 26 | KRAS SIGNALING DN | 196 | -0.4246284 | -1.3176625 | 0.023809524 | 0.06424428 | 0.824 |
| 27 | EPITHELIAL MESENCHYMAL TRANSITION | 193 | -0.4197962 | -1.3013544 | 0.024475524 | 0.073584855 | 0.868 |
| 28 | PEROXISOME | 100 | -0.44258863 | -1.2929472 | 0.057971016 | 0.07763929 | 0.888 |
| 29 | ANDROGEN RESPONSE | 98 | -0.43698037 | -1.2654948 | 0.08138101 | 0.09973766 | 0.946 |
| 30 | ADIPOGENESIS | 195 | -0.40235537 | -1.254943 | 0.05359179 | 0.107063666 | 0.961 |
| 31 | MITOTIC SPINDLE | 190 | -0.40160128 | -1.2507243 | 0.05232558 | 0.10781065 | 0.966 |
| 32 | OXIDATIVE PHOSPHORYLATION | 188 | -0.3780561 | -1.1845263 | 0.12313003 | 0.19134384 | 0.998 |
| 33 | IL2 STAT5 SIGNALING | 189 | -0.3702865 | -1.1528248 | 0.16132723 | 0.24174036 | 0.999 |
| 34 | FATTY ACID METABOLISM | 153 | -0.38013726 | -1.1520032 | 0.16805722 | 0.2359132 | 0.999 |
| 35 | HYPOXIA | 195 | -0.35844627 | -1.127123 | 0.2 | 0.2745556 | 1 |
| 36 | UNFOLDED PROTEIN RESPONSE | 108 | -0.3817485 | -1.1269919 | 0.21791768 | 0.26715347 | 1 |
| 37 | ANGIOGENESIS | 35 | -0.448056 | -1.1014447 | 0.3375 | 0.31014323 | 1 |
| 38 | HEME METABOLISM | 190 | -0.352038 | -1.0965643 | 0.26279864 | 0.31127045 | 1 |
| 39 | NOTCH SIGNALING | 32 | -0.41864386 | -1.0288817 | 0.4188406 | 0.44970873 | 1 |
| 40 | MYOGENESIS | 190 | -0.32446653 | -1.0123525 | 0.43463302 | 0.47639444 | 1 |
| 41 | DNA REPAIR | 140 | -0.27523893 | -0.8306637 | 0.8469751 | 0.8785164 | 1 |
| 42 | UV RESPONSE UP | 154 | -0.26591897 | -0.8066237 | 0.912154 | 0.90050495 | 1 |
| 43 | PANCREAS BETA CELLS | 39 | -0.31063548 | -0.7968479 | 0.8072626 | 0.89497006 | 1 |