Supplementary Table 1. The signaling genes related to apoptosis and cell death changed between NG and HG-treated human pancreatic β cells.

| Gene Symbol | Ratio (HG/NG) | P-value | HG(signal intensity) | NG(signal intensity) | Gene Name |
|---|---|---|---|---|---|
| PRKCE | 15.77 | 0.1554 | 2019 | 38 | protein kinase C, epsilon |
| NOTCH1 | 5.49 | 0.1380 | 87 | 11 | Notch homolog 1, translocation-associated (Drosophila) |
| HMGB2 | 4.05 | 0.2505 | 62 | 7 | high-mobility group box 2 |
| MAPKAPK5 | 3.59 | 0.0933 | 51 | 12 | mitogen-activated protein kinase-activated protein kinase 5 |
| TM7SF3 | 3.37 | 0.4270 | 114 | 8 | transmembrane 7 superfamily member 3 |
| PPARG | 3.30 | 0.0077 | 50 | 15 | peroxisome proliferator-activated receptor gamma |
| BIRC3 | 3.23 | 0.4499 | 125 | 9 | baculoviral IAP repeat-containing 3 |
| PTK2 | 3.21 | 0.2739 | 47 | 8 | PTK2 protein tyrosine kinase 2 |
| TFAM | 2.98 | 0.0007 | 41 | 14 | transcription factor A, mitochondrial |
| SP1 | 2.95 | 0.1696 | 49 | 13 | Sp1 transcription factor |
| TRPV1 | 2.93 | 0.0043 | 21 | 7 | transient receptor potential cation channel, subfamily V, member 1 |
| PTPN11 | 2.90 | 0.3883 | 67 | 9 | protein tyrosine phosphatase, non-receptor type 11 |
| PDE4A | 2.87 | 0.3747 | 56 | 8 | phosphodiesterase 4A, cAMP-specific (phosphodiesterase E2 dunce homolog, Drosophila) |
| HIP1 | 2.85 | 0.0099 | 40 | 14 | huntingtin interacting protein 1 |
| CLSPN | 2.74 | 0.3910 | 54 | 8 | claspin homolog (Xenopus laevis) |
| HTR2A | 2.72 | 0.0284 | 23 | 8 | 5-hydroxytryptamine (serotonin) receptor 2A |
| GRIN3A | 2.71 | 0.3778 | 52 | 9 | glutamate receptor, ionotropic, N-methyl-D-aspartate 3A |
| TRAF6 | 2.64 | 0.1616 | 21 | 7 | TNF receptor associated factor 6 |
| IFT57 | 2.62 | 0.0746 | 29 | 10 | intraflagellar transport 57 homolog (Chlamydomonas) |
| ABL1 | 2.59 | 0.0524 | 65 | 24 | c-abl oncogene 1, receptor tyrosine kinase |
| TJP2 | 2.57 | 0.2809 | 32 | 8 | tight junction protein 2 (zona occludens 2) |
| DSG1 | 2.56 | 0.3706 | 37 | 7 | desmoglein 1 |
| TRIM13 | 2.48 | 0.0429 | 27 | 10 | tripartite motif-containing 13 |
| PPARD | 2.44 | 0.0233 | 2938 | 1184 | peroxisome proliferator-activated receptor delta |
| PARP1 | 2.41 | 0.4346 | 71 | 13 | poly (ADP-ribose) polymerase 1 |
| MSH2 | 2.39 | 0.4547 | 64 | 11 | mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli) |
| TLR3 | 2.35 | 0.2158 | 49 | 17 | toll-like receptor 3 |
| FNTA | 2.35 | 0.0572 | 36 | 15 | farnesyltransferase, CAAX box, alpha |
| ID1 | 2.26 | 0.0013 | 382 | 169 | inhibitor of DNA binding 1, dominant negative helix-loop-helix protein |
| IL12A | 2.22 | 0.1879 | 20 | 8 | interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35) |
| NCL | 2.17 | 0.4047 | 27 | 7 | nucleolin |
| NFKB1 | 2.17 | 0.4614 | 50 | 11 | nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 |
| PDCD6IP | 2.17 | 0.1758 | 28 | 11 | programmed cell death 6 interacting protein |
| UBC | 2.15 | 0.0072 | 47104 | 21792 | ubiquitin C |
| MECOM | 2.14 | 0.0753 | 19 | 8 | MDS1 and EVI1 complex locus |
| ITGB2 | 2.14 | 0.3708 | 32 | 9 | integrin, beta 2 (complement component 3 receptor 3 and 4 subunit) |
| PARP4 | 2.13 | 0.0433 | 53 | 24 | poly (ADP-ribose) polymerase family, member 4 |
| DNM1L | 2.13 | 0.1029 | 36 | 16 | dynamin 1-like |
| CDC6 | 2.11 | 0.0215 | 85 | 40 | cell division cycle 6 homolog (S. cerevisiae) |

| | | | | | |
|---|---|---|---|---|---|
| RFFL | 2.11 | 0.3981 | 34 | 10 | ring finger and FYVE-like domain containing 1 |
| CDKN2A | 2.11 | 0.0815 | 48 | 22 | cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4) |
| PTPMT1 | 2.09 | 0.0160 | 48 | 23 | protein tyrosine phosphatase, mitochondrial 1 |
| GAS6 | 2.09 | 0.1820 | 36 | 15 | growth arrest-specific 6 |
| CD9 | 2.08 | 0.4452 | 2290 | 1100 | CD9 molecule |
| CYCS | 2.07 | 0.0099 | 91 | 44 | cytochrome c, somatic |
| CAV1 | 2.05 | 0.0153 | 6055 | 2932 | caveolin 1, caveolae protein, 22kDa |
| FOXL2 | 2.04 | 0.2584 | 102 | 39 | forkhead box L2 |
| WNT11 | 2.02 | 0.0204 | 142 | 70 | wingless-type MMTV integration site family, member 11 |
| CD81 | 2.01 | 0.0069 | 35 | 17 | CD81 molecule |
| TFAP2A | 2.01 | 0.0051 | 628 | 311 | transcription factor AP-2 alpha (activating enhancer binding protein 2 alpha) |
| AKT2 | 2.01 | 0.0605 | 86 | 42 | v-akt murine thymoma viral oncogene homolog 2 |
| ESR2 | 2.00 | 0.4734 | 46 | 12 | estrogen receptor 2 (ER beta) |
| MAGED1 | 0.50 | 0.1224 | 35 | 66 | melanoma antigen family D, 1 |
| RUNX1 | 0.50 | 0.1217 | 13 | 24 | runt-related transcription factor 1 |
| CASP2 | 0.49 | 0.0601 | 43 | 84 | caspase 2, apoptosis-related cysteine peptidase |
| BID | 0.49 | 0.0255 | 149 | 298 | BH3 interacting domain death agonist |
| EIF2AK2 | 0.49 | 0.0031 | 384 | 790 | eukaryotic translation initiation factor 2-alpha kinase 2 |
| FLCN | 0.48 | 0.0461 | 16 | 33 | folliculin |
| NTRK3 | 0.48 | 0.0049 | 365 | 761 | neurotrophic tyrosine kinase, receptor, type 3 |
| ESR1 | 0.47 | 0.0021 | 140 | 294 | estrogen receptor 1 |
| APC | 0.47 | 0.1118 | 31 | 61 | adenomatous polyposis coli |
| LAPTM4B | 0.47 | 0.1458 | 13 | 24 | lysosomal protein transmembrane 4 beta |
| MET | 0.46 | 0.0241 | 221 | 471 | met proto-oncogene (hepatocyte growth factor receptor) |
| PLK1 | 0.46 | 0.0514 | 75 | 159 | polo-like kinase 1 (Drosophila) |
| TMEM173 | 0.45 | 0.0089 | 8 | 17 | transmembrane protein 173 |
| TNFSF10 | 0.45 | 0.0500 | 30 | 66 | tumor necrosis factor (ligand) superfamily, member 10 |
| PARK2 | 0.44 | 0.0554 | 43 | 95 | Parkinson disease (autosomal recessive, juvenile) 2, parkin |
| PSIP1 | 0.44 | 0.0443 | 14 | 30 | PC4 and SFRS1 interacting protein 1 |
| UBE2N | 0.43 | 0.0709 | 20 | 44 | ubiquitin-conjugating enzyme E2N (UBC13 homolog, yeast) |
| BNIP2 | 0.42 | 0.1076 | 27 | 59 | BCL2/adenovirus E1B 19kDa interacting protein 2 |
| CYP2E1 | 0.42 | 0.0133 | 9 | 22 | cytochrome P450, family 2, subfamily E, polypeptide 1 |
| CCL2 | 0.37 | 0.0032 | 15 | 39 | chemokine (C-C motif) ligand 2 |
| CDC42 | 0.34 | 0.0781 | 42 | 111 | cell division cycle 42 (GTP binding protein, 25kDa) |
| CD99 | 0.34 | 0.0401 | 44 | 124 | CD99 molecule |
| DNASE1L3 | 0.32 | 0.0149 | 11 | 32 | deoxyribonuclease I-like 3 |
| CENPE | 0.31 | 0.0080 | 52 | 165 | centromere protein E, 312kDa |
| EPOR | 0.22 | 0.0121 | 27 | 119 | erythropoietin receptor |
| CCR3 | 0.21 | 0.1553 | 36 | 101 | chemokine (C-C motif) receptor 3 |
| QSOX2 | 0.09 | 0.0013 | 9 | 95 | quiescin Q6 sulfhydryl oxidase 2 |