

## **Description of Additional Supplementary Files**

**Supplementary Data 1:** RNA-seq data (HSCP-HK vs LSCP-HK)

**Supplementary Data 2:** List of Gene Set Analysis (GSA) genes enrichment for LSCP-HK vs HSCP-HK

**Supplementary Data 3:** Effect of gene editing on cell proliferation at Days 12, 19, 38 and 43 (Q1/3, RSA)

**Supplementary Data 4:** Gain in IRF2 binding at regulatory regions of genes ( $\log_2FC < 0.5$ ) in LSCP-HK vs HSCP-HKs

**Supplementary Data 5:** Counts from RNA-seq LSCP-HK vs HSCP-HKs

**Supplementary Data 6:** Counts from RNA-seq IRF2 KO vs control

**Supplementary Data 7:** HG19 human keratinocyte sequencing reads table