

Table S1

All of the results were derived from NOKs cells expressing either E2 by itself (NOKs+E2 in the manuscript) or the entire HPV16 genome (NOKs+HPV16)

E2-UP contains a list of genes upregulated by HPV16 E2

E2-DOWN contains a list of genes downregulated by HPV16 E2

HPV16-UP contains a list of genes upregulated by the entire HPV16 genome

HPV16-DOWN contains a list of genes downregulated by the entire HPV16 genome

E2-UP and HPV16-UP contains a list of genes that were upregulated in NOKs+E2 and NOKs+HPV16

E2-DOWN and HPV16-DOWN contains a list of genes that were downregulated in NOKs+E2 and NOKs+HPV16

E2-UP not HPV16-UP contains a list of genes that were upregulated in NOKs+E2 but not in NOKs+HPV16

E2-DOWN not HPV16-DOWN contains a list of genes that were downregulated in NOKs+E2 but not in NOKs+HPV16

Table S2

The results in this table were generated from analysis of head and neck cancer (HNC) data from The Cancer Genome Atlas (TCGA). The results are also compared with the NOKs+E2 regulated genes.

- a) **ALL-HPV16pos-v-nonHPV-UP** lists genes that are upregulated in all of the HPV16 positive TCGA tumors when compared with the HPV negative ones
- b) **ALL-HPV16pos-v-nonHPV-DOWN** lists genes that are downregulated in all of the HPV16 positive TCGA tumors when compared with the HPV negative ones
- c) **NoE2HPV16pos-v-nonHPV-UP** lists genes that are upregulated in HPV16 positive TCGA tumors that have no E2 expression when compared with the HPV negative ones
- d) **NoE2HPV16pos-v-nonHPV-DOWN** lists genes that are downregulated in HPV16 positive TCGA tumors that have no E2 expression when compared with the HPV negative ones
- e) **E2HPV16pos-v-nonHPV-UP** lists genes that are upregulated in HPV16 positive TCGA tumors that have E2 expression when compared with the HPV negative ones
- f) **E2HPV16pos-v-nonHPV-DOWN** lists genes that are downregulated in HPV16 positive TCGA tumors that have E2 expression when compared with the HPV negative ones

E2-UP and HPV16pos-UP lists genes that are upregulated by E2 in NOKs (Table 1) that are also in a) above

E2-DOWN and HPV16pos-DOWN lists genes that are downregulated by E2 in NOKs (Table 1) that are also in b) above

E2-UP and E2+HPV16pos-UP lists genes that are upregulated by E2 in NOKs (Table 1) that are also in e) above

E2-DOWN and E2+HPV16pos-DOWN lists genes that are downregulated by E2 in NOKs (Table 1) that are also in f) above

E2-UP and noE2 HPV16pos-UP lists genes that are upregulated by E2 in NOKs (Table 1) that are also in c) above

E2-DOWN and noE2 HPV16pos-DOWN lists genes that are downregulated by E2 in NOKs (Table 1) that are also in d) above