

**Supplementary Table 1.** Primer sequences and PCR conditions used for genotyping experimental mice.

Gene	Primer Sequence (5'→3')	Amplicon size (bp)
<i>E7</i>	F: GGAGGAGGATGAAATAGATGG R: GCCCATTAAGAGGTCTTCCAA	157
<i>Hbb</i>	F: CCAATCTGCTCACACAGGATAGAGAGGGCAGG R: CCTTGAGGCTGTCCAAGTGATTTCAGGCCATCG	494

F - forward, R - reverse. Amplification conditions: DNA denaturation at 94°C for three minutes, 35 cycles at 94°C for 30 seconds, 60°C for 45 seconds, 72°C for 90 seconds and a final extension step at 72°C for ten minutes. Amplification of DNA fragments with the expected band size was confirmed by electrophoresis in a 3% agarose gel.

**Supplementary Table 2.** RT-PCR Primer sequences of for HPV16 E6, E7, E5, and for TBP, HPRT and  $\beta 2m$ . F - forward, R - reverse.

Gene	Primer sequence (5'→3')	Amplicon size (bp)
<i>E6</i>	F: GAGCGACCCAGAAAGTTACCAC R: ACCTCACGTCGCAGTAACTGTTG	107
<i>E7</i>	F: ACCGGACAGAGCCCATTACAA R: GTGCCCATTAAACAGGTCTTCC	120
<i>E5</i>	F: CTTTGCTTTTGTGTGCTTTTGTGTG R: AAAGCGTGCATGTGTATGTATTAAA	192
<i>TBP</i>	F: CAAACCCAGAATTGTTCTCCTT R: ATGTGGTCTTCCTGAATCCCT	131
<i>HPRT</i>	F: TGAAGAGCTACTGTAATGATCAGTCAAC R: AGCAAGCTTGCAACCTTAACCA	187
<i><math>\beta 2m</math></i>	F: GGTCTTTCTGGTGCTTGTCTCA R: GTTCGGCTTCCCATCTCTCC	103

F - forward, R - reverse.

**Supplementary Table 3.** Primary antibodies and dilutions used for immunohistochemical experiments.

Target protein	Supplier, clone	Dilution
<b>ER<math>\alpha</math></b>	Santa Cruz Biotech, F10	1:200
<b>ER<math>\beta</math></b>	Santa Cruz Biotech, B-1	1:200
<b>PR</b>	Santa Cruz Biotech, AB-52	1:200
<b>MMP2</b>	Santa Cruz Biotech, 8B4	1:100

ER $\alpha$ - Estrogen receptor alpha, ER $\beta$  - Estrogen receptor beta, PR- Progesterone receptor, MMP2- Matrix metalloproteinase 2.