



**Supplementary Figure 1: Tumour epithelial cells from benign papilloma are tumorigenic *in vitro*.**

(A) Graph representing the *in vitro* colony forming efficiency of CD34+ and CD34- isolated Epcam+ cells from DMBA/TPA and K19CREERKRas<sup>G12D</sup> papillomas. (n=6 biological replicates). (B) Graph representing the total cell output derived CD34+ and CD34- FACS isolated Epcam+ cells from DMBA/TPA and K19CREERKRas<sup>G12D</sup> papillomas 2 weeks after *in vitro* culture. The \*\* represents the p-values calculated between the CD34- or between the CD34+ in the 2 papilloma models. p-value for CD34- = 0,00051 and p-value for CD34+ = 0,00269. (n=6 biological replicates). (C). Immunostaining of EdU in a representative colony papilloma arising from K19CREERKRas<sup>G12D</sup> mice 2 hour after EdU pulse. (D) Immunostaining of K14 (left panel) or K10 (right panel) and E-cadherin in a representative *in vitro* colony of cultured papilloma cells arising from K19CREERKRas<sup>G12D</sup> mice.