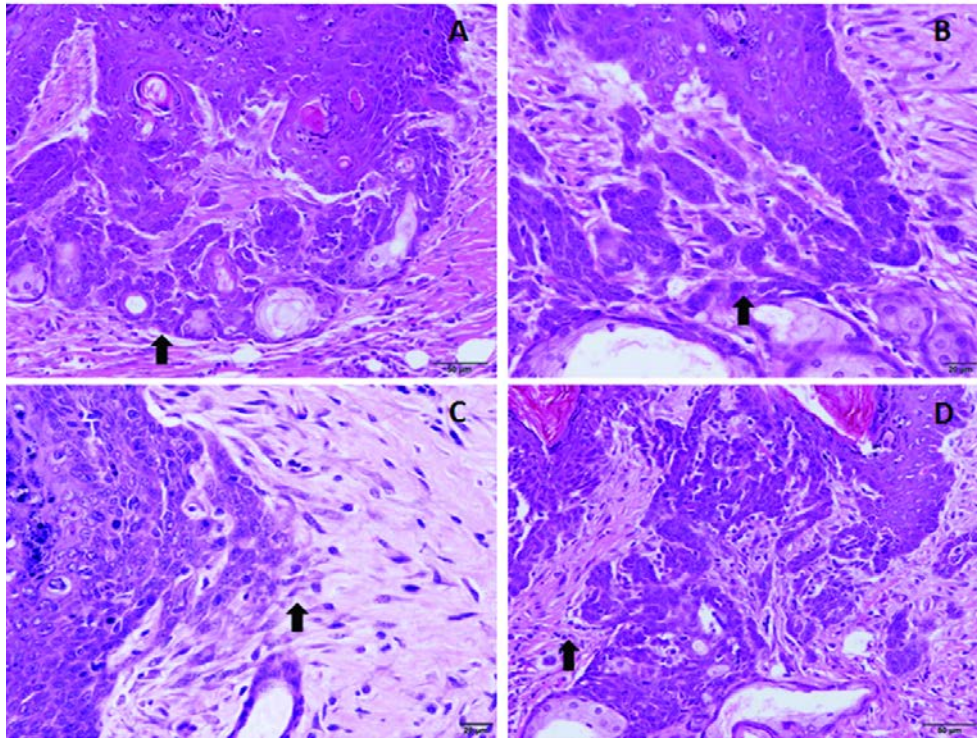
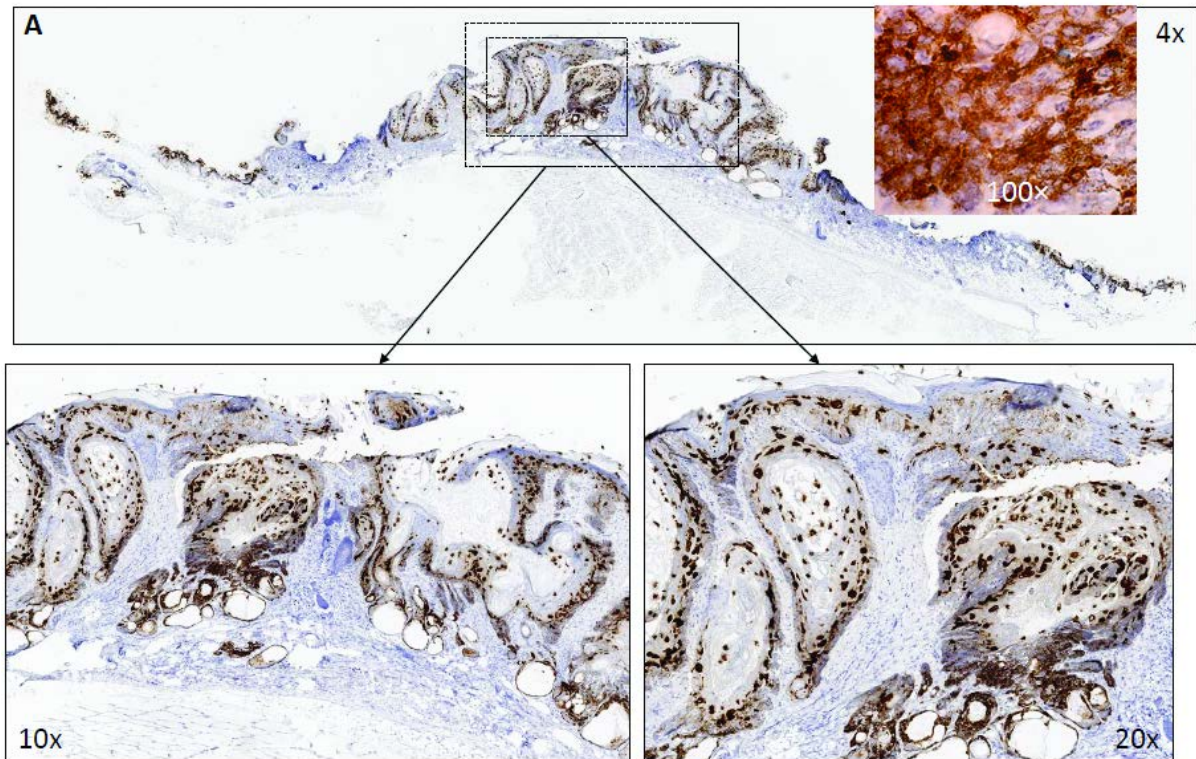


**Supplementary Fig. 1.** A microinvasive squamous skin lesion in the athymic nude mouse skin at 9.5 months post viral infection. There are multiple foci of micro-invasions by chains of cells or single cells (squamous cell carcinoma, a-d, H&E, 40×, arrows).



**Supplementary Fig. 2 A)** Viral transcript (E1<sup>E4</sup>) can be detected by RNA-ISH in the lesion (a, 1×) at different magnifications (10× and 20×). The signals are located at the cytoplasm (insert, 100×).





**B)** Viral transcript (E1<sup>^</sup>E4) by RNA-ISH was absent in normal tissue on one side while very strong in the other side of carcinoma lesion (10 $\times$ , a ; 40 $\times$ b). The corresponding histology was shown in H& E staining (10 $\times$ , c and 40 $\times$ , d).

