



**Fig.S17** Lineage tracing strategy in quadrupled transgenic mice. **a** Schematic of lineage tracing strategy in *Krt14-rtTA;TRE-Msi1;Krt14-CreER;mTmG* quadrupled transgenic (QTG). QTG mice were injected with tamoxifen for 3 consecutive days to label basal keratinocytes, and then were continuously treated with Doxycycline for 48 hours to induce a Paget-like phenotype in mouse skin. **b, c** Histology of control and QTG mouse dorsal and ventral skin tissues used for lineage tracing. Arrows point to Paget-like cells in QTG mice. Representative images are shown. Epidermis and dermis are demarcated with broken line. Scale bar: **b, c** – 100  $\mu\text{m}$ .