



**Fig.S11** Histopathological and biomarker assessment of MPD and EMPD human skin. **a-i** Hematoxylin and eosin (H&E), PAS, and immunohistochemical staining against Paget Disease-specific markers in normal, mammary (MPD), and extramammary Paget Disease (EMPD) human skin. Epidermis and dermis are demarcated with broken line. **j** Western blotting analysis of MUCIN1 (MUC1), Cytokeratin 7 (KRT7), Vimentin (VIM), Cytokeratin 8 (KRT8) and Cytokeratin Cam5.2 (CAM5.2) in normal and EMPD human skin.  $\beta$ -TUBULIN was used as loading control. **k** qRT-PCR analysis of Podoplanin (*PDPN*), Metalloproteinase 9 (*MMP9*), *VIM*, *KRT7* and *KRT8* in normal (n=3) and EMPD (n=3) human skin. Student's *t*-test; \**P* < 0.05, \*\**P* < 0.01). Representative images are shown. Epidermis and dermis are demarcated with broken line. Scale bar: **a-i** – 50  $\mu$ m.