



Fig. S1. Immunohistochemical and ultrastructural features. (a) Immunofluorescent staining for keratin 14, type IV collagen and type VII collagen. (b) Immunofluorescent examination revealed markedly reduced integrin $\alpha 3$ in the patient skin compared with normal skin, but no difference in expression of hemidesmosomal components, such as type XVII collagen, integrin $\beta 4$, and integrin $\alpha 6$. Bars=50 μm . (c) Transmission electron microscopy revealed immature hemidesmosomes with thin plaques in the blister roof and separation above the lamina densa (black arrowheads). Bar=2,000 nm.