Supplementary Figure 1. Regeneration of a genetically corrected epidermis. (a) Preparation of the wound bed by Timedsurgery. Phase I (upper panel): coagulation of KEP25 epidermal remnants using the dull portion of a 0.2-mm electrode bent at an angle (arrow) and skinned over the skin surface. Phase II (lower panel): removal of the coagulated epidermis (arrow) with the same electrode, but without electric power. (b) Genetically modified cultured epidermal sheets were transplanted on the prepared wound bed of the left upper leg (graft). Follow-up examinations were carried out at 8 days (8 d) and 1-10 months (mo) months post-transplantation. (c) Hematoxylin/eosin staining of 5 μm skin sections from a right leg biopsy at 4 months shows a fully-differentiated epidermis adhering to the underlying dermis (left panel). The stratum corneum is indicated (bracket). In situ hybridization with a vector-specific probe on 5 μm skin sections from the same biopsy shows the presence of LAM-β3 transcripts in all epidermal layers (upper right). A white dotted line indicates the basal lamina. Sections from a normal skin were used as a control (lower right). Nuclei were stained with DAPI (red). (d) The regenerated epidermis did not form blisters even after induced mechanical stress, such as strong nips, that would have induced formation of blisters in the uncorrected skin. (e) Immunofluorescence analysis of skin sections from a left leg biopsy. Normal amounts of LAM5-β3 (in green) were concentrated at the dermal-epidermal junction at 4 (upper left) and 6 (upper right) months. The transgenic epidermis showed normal synthesis of LAM5-γ2 (lower left) and α6β4 integrins (lower right).