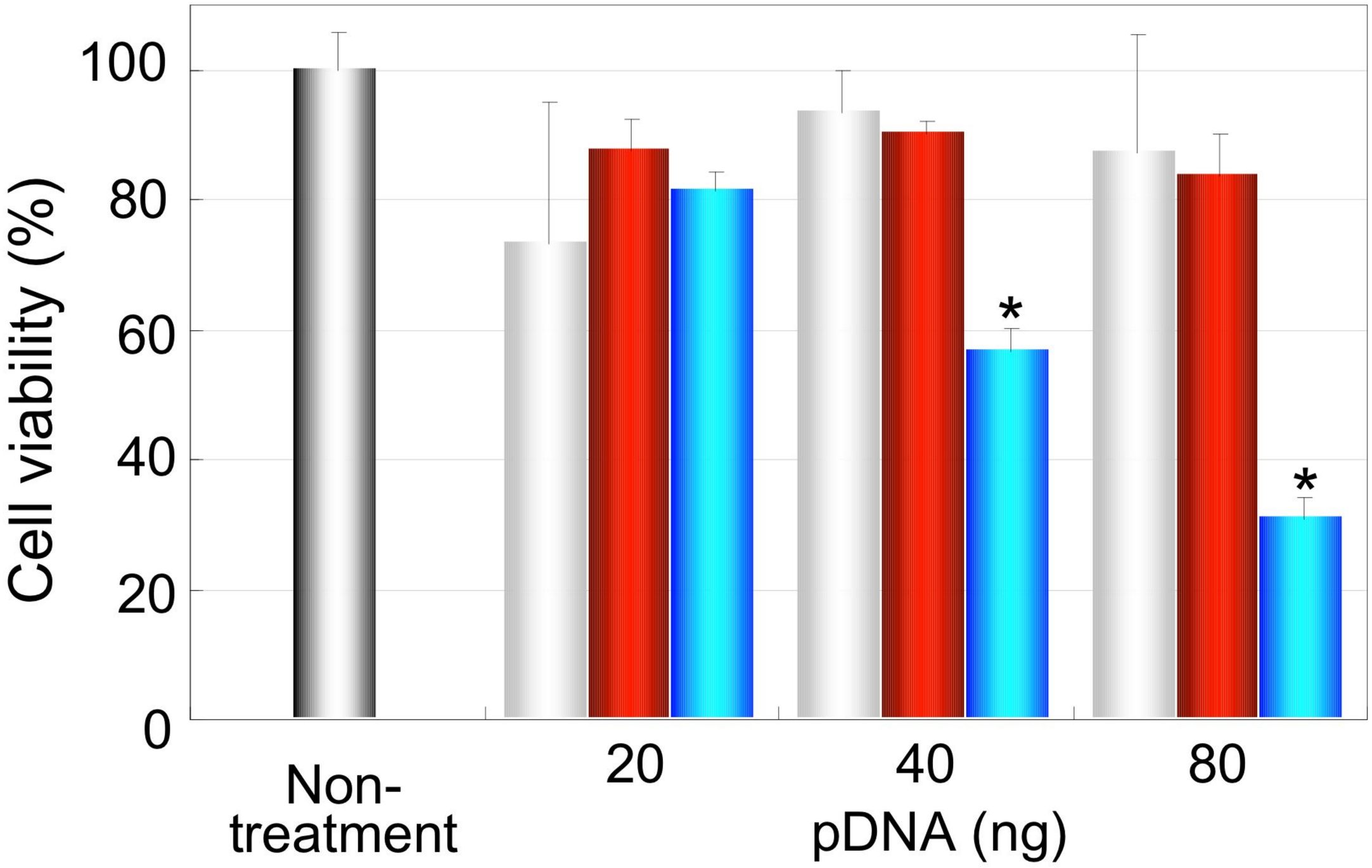
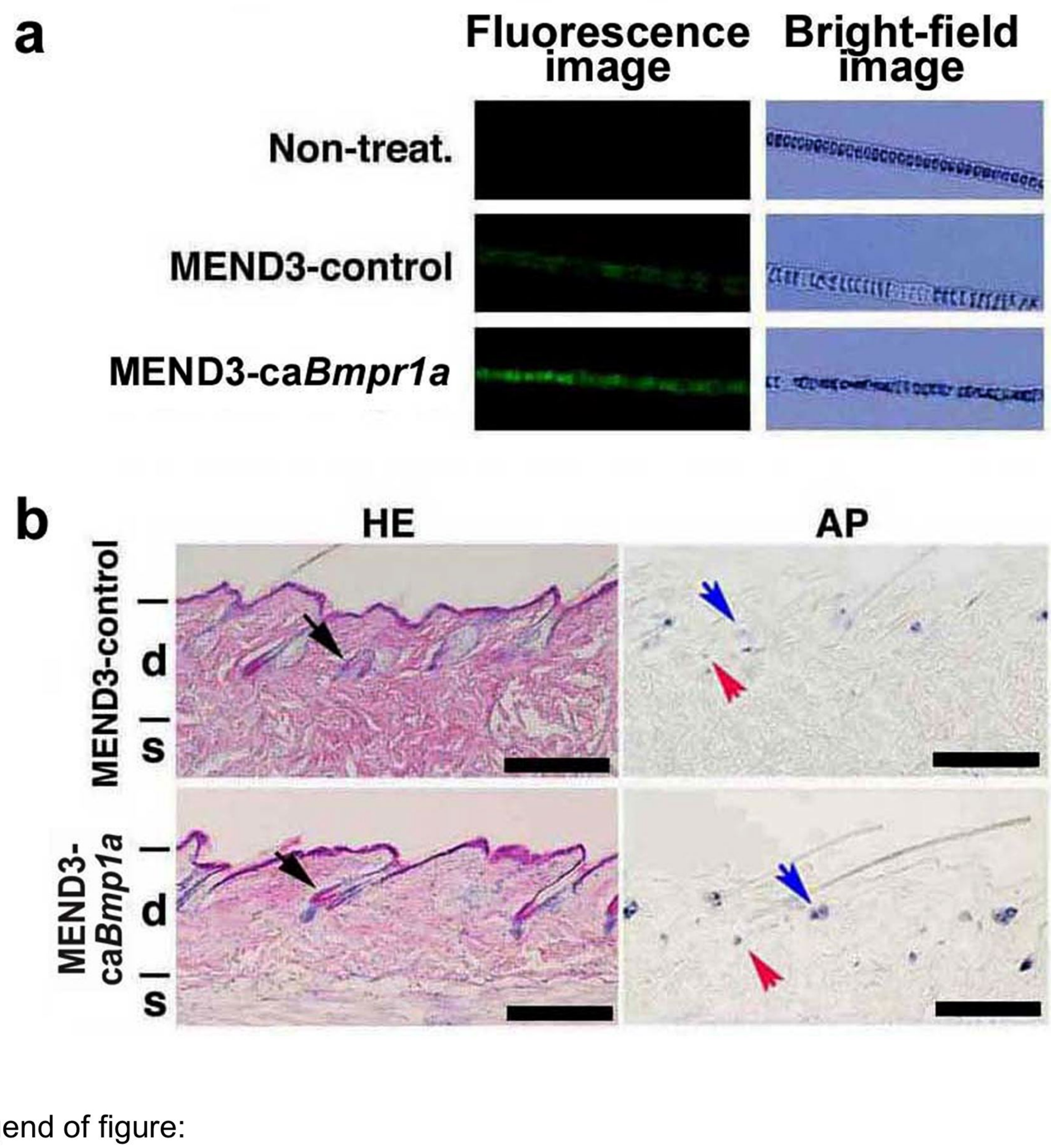
Supplementary Figure 1.
Effect of transfection of naked pDNA, MEND and Lipofectamine-PLUS on cell viability evaluated by MTT assay. MEND showed no cytotoxicity, although Lipofectamine-PLUS significantly decreased cell viability.



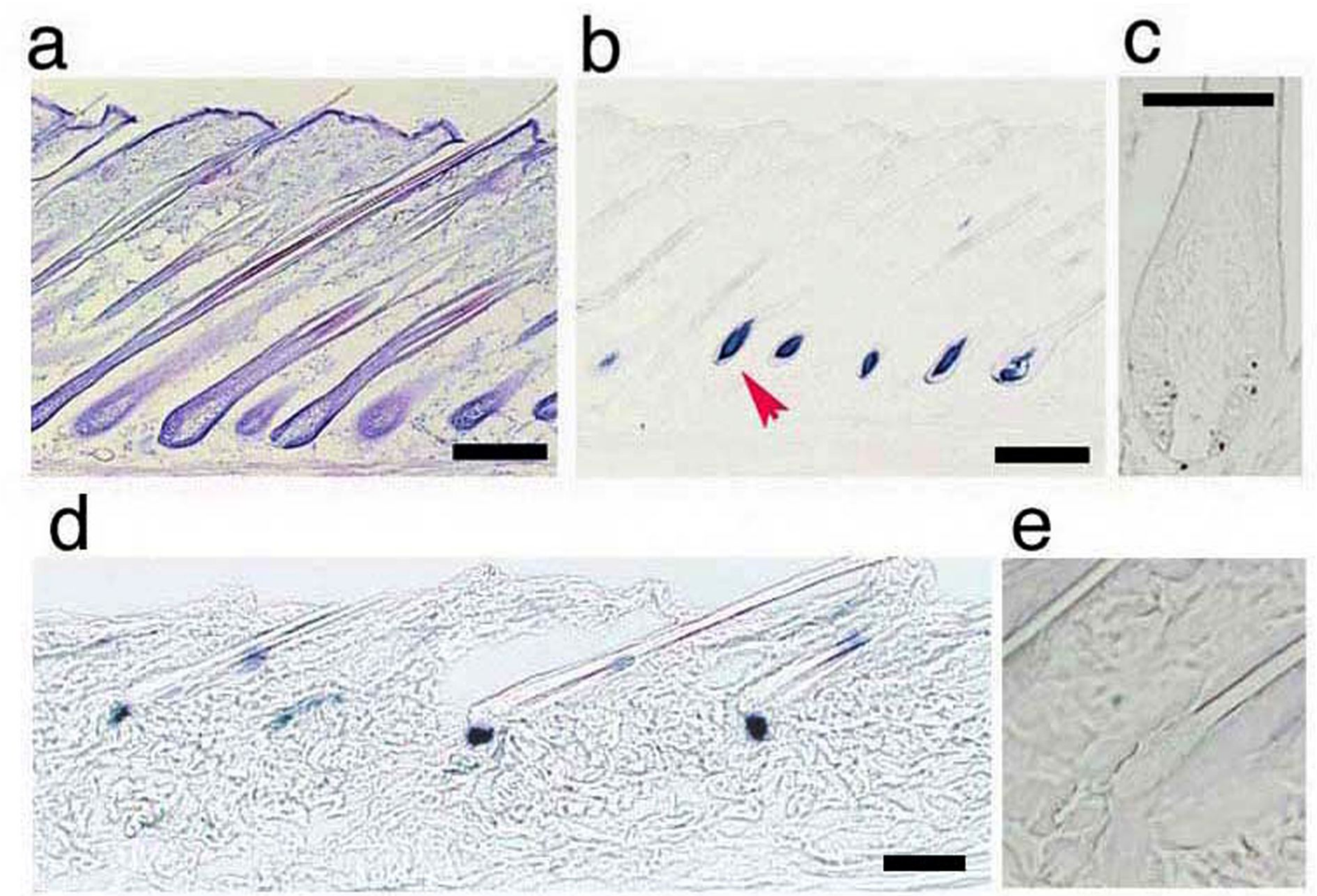
Legend of figure:
Cytotoxicity of the MEND3 system evaluated by MTT assay. One day before the experiment, NIH3T3 cells were plated in a 96-well plate (0.4 x 10^4 cells/well). Cells were treated with serum-free medium containing different concentrations of naked plasmid DNA (light gray bars), MEND3 (red bars) or Lipofectamine-Plus/DNA complex (blue bars) for 3 hr. Medium containing serum was then added and incubation was continued for 45 hr. The medium was then removed and the cells were subjected to MTT assay. Cell viability was expressed as percent of the viability of the non-treated cells (dark gray bar). No statistical significant difference was observed between naked plasmid DNA (pDNA) and MEND3 at all doses, while Lipofectamine-Plus showed a dose-dependent cytotoxicity (there were significant differences between naked pDNA or MEND3 and Lipofectamine-Plus/pDNA at 40 and 80 ng pDNA, *$p<0.01$). The values are means ± S.D. (n=4).

Supplementary Figure 2.
Images of GFP protein expression in hair (a) and skin (b) of mice treated with MEND3-ires-GFP or MEND3-ca*Bmpr1a*-ires-GFP. GFP protein expression in hair was observed in MEND3-ca*Bmpr1a*-ires-GFP treated mice. The hair follicles in MEND3-caBmpr1a treated mice migrated to the dermis area 7 weeks after the treatment.



Legend of figure:
(a) MEND3-ires-GFP (MEND3-control) or MEND3-ca*Bmpr1a*-ires-GFP (MEND3-ca*Bmpr1a*) treated hair indicated GFP protein expression 2-week-after treatment. Left panel, fluorescence image with GFP filter (Ex460-480/ Em495-540, Olympus Japan); Right panel, bright-field image of same field. (b) The hair follicles in MEND3-ca*Bmpr1a* treated mice migrated to the dermis area 7 weeks after the treatment. Left panels: sections were stained with Hematoxylin-eosin (HE). Black arrows indicate hair follicles in the dermis (d); s, subsutis space; Right panels: detection of Alkaline Phosphatase (AP) activity indicates the hair cycle phase. Blue arrow, sebaceous gland; Red arrow, DP. Scale bars: 200μm.

Supplementary Figure 3.
Histological analysis of non-treated control mice skin.



Legend of figure:
Hematoxylin-eosin (HE) (panel a) and Alkaline Phosphatase (AP) (panel b) staining of sections from 4-week-old ICR mice skin. Red arrow, dermal papilla. Scale bars: 200μm. (c) The proliferation marker (Phospho-histon H3) indicates the existence of proliferative cells in HF in 4-week-old mice skin. Scale bar: 100μm. (d) AP staining of section from 8-week-old ICR mice skin. Scale bar: 100μm. (e) Phospho-histon H3 (PH3) staining of section from 8-week-old ICR mice skin. No PH3 staining was observed in hair follicles.