Article

NaHS-Hydrogel and Encapsulated Adipose-Derived Stem Cell Evaluation on an Ex Vivo Second-Degree Burn Model

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Supplementary Materials

Figure S1. Blow-up of epidermis restored post-burn after treatment with poloxamer hydrogel containing NaHS at day 14 (0.25 mM–0.5 mM). Control corresponds to poloxamer hydrogel alone.

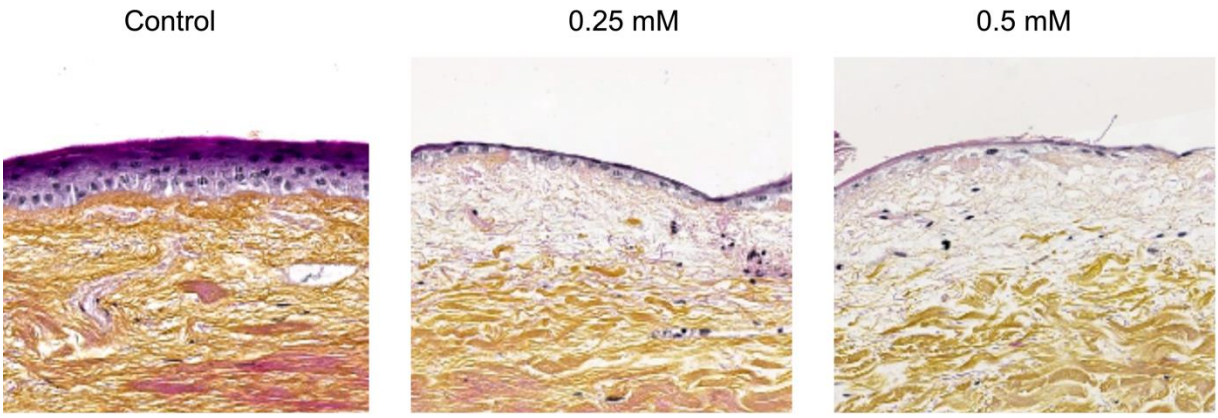

Figure S2. Kinetics of a-SMA (*α*-Smooth Muscle Actin) dermal expression in poloxamer hydrogel-treated ex vivo cultured human skin explants submitted to 10s long experimental burn injury. Immunostainings of α-SMA were performed on human skin explants harvested at different time points post-burn (days 5, 10 and 14). After wound debridement, on day 1, daily treatment with poloxamer p407/p188 hydrogel was applied containing NaHS concentrations of: Control (0 mM) (upper panels), 0.25 mM (middle panels) and 0.5 mM (bottom panels). No significant difference was observed when comparing the different conditions, irrespective of the time point considered following burn injury. Results obtained for each condition are representative of 3 series of experiments performed on skin explants derived from 3 donors. Scale bar: 100 μm.

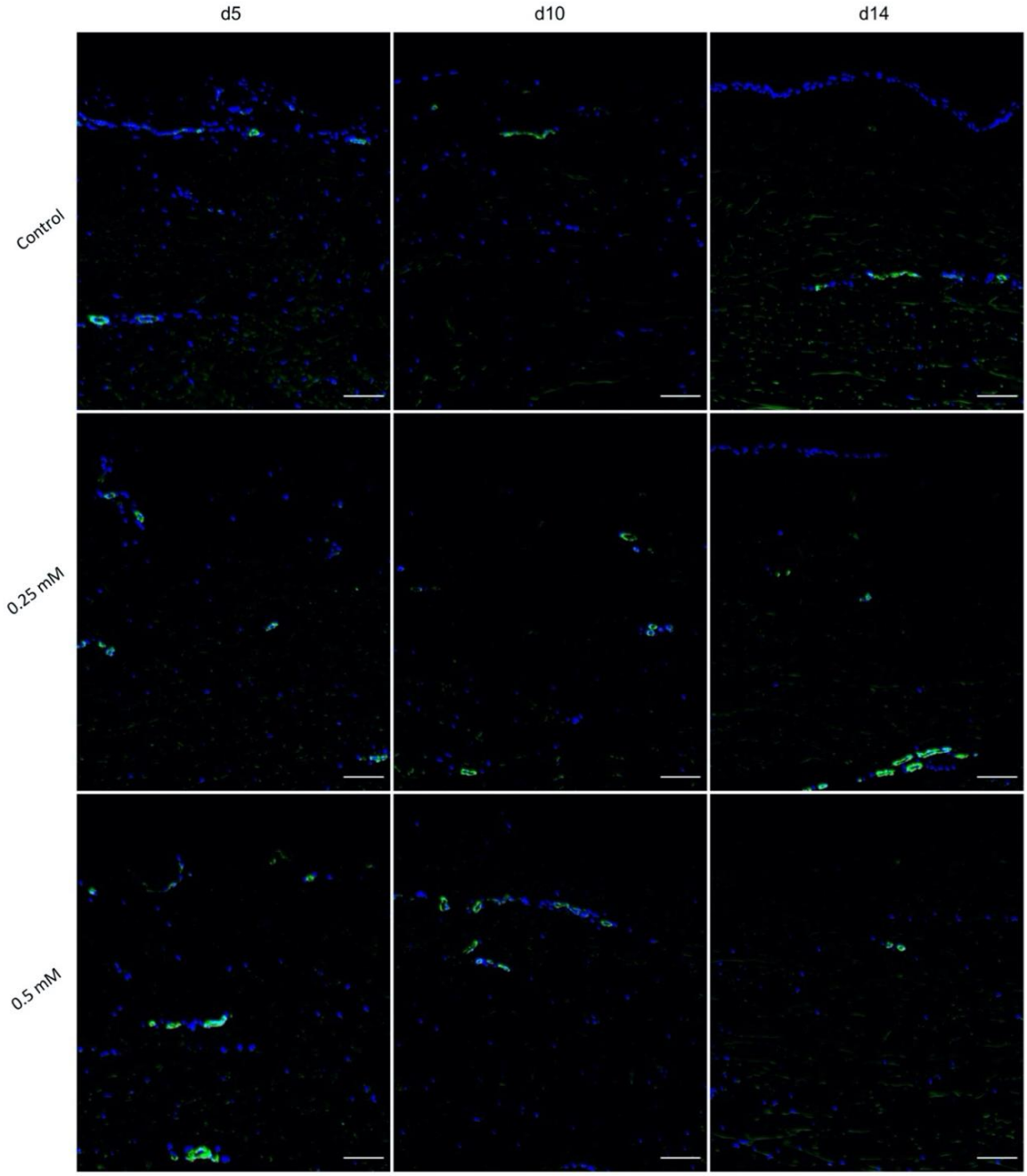

Figure S3. Kinetics of collagen I dermal expression in poloxamer hydrogel-treated ex vivo cultured human skin explants submitted to 10s long experimental burn injury. Immunostainings of collagen I were performed on human skin explants harvested at different time points post-burn (days 5, 10 and 14). After wound debridement, on day 1, daily treatment with poloxamer p407/p188 hydrogel was applied containing NaHS concentrations of: Control (0 mM) (upper panels), 0.25 mM (middle panels) and 0.5 mM (bottom panels). No significant difference was observed when comparing the different conditions, irrespective of the time point considered following burn injury. Results obtained for each condition are representative of 3 series of experiments performed on skin explants derived f arom 3 donors. Scale bar: 100 μm.

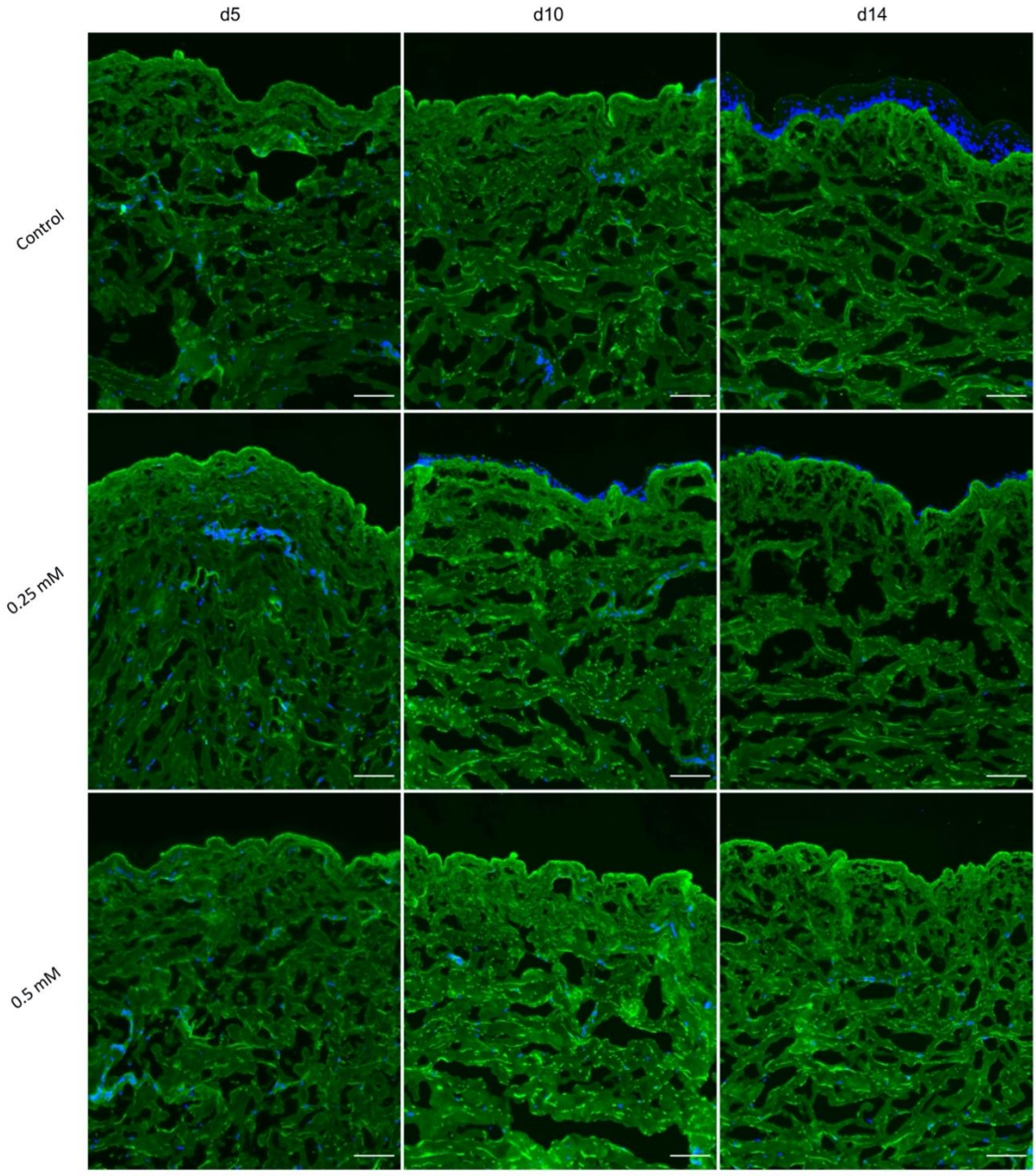

Figure S4. Kinetics of collagen III dermal expression in poloxamer hydrogel-treated ex vivo cultured human skin explants submitted to 10s long experimental burn injury. Immunostaining of collagen III was performed on human skin explants harvested at different time points post-burn (days 5, 10 and 14). After wound debridement, on day 1, daily treatment with poloxamer p407/p188 hydrogel was applied containing NaHS concentrations of: Control (0 mM) (upper panels), 0.25 mM (middle panels) and 0.5 mM (bottom panels). No significant difference was observed when comparing the different conditions, irrespective of the time point considered following burn injury. Results obtained for each condition are representative of 3 series of experiments performed on skin explants derived from 3 donors. Scale bar: 100 μm.

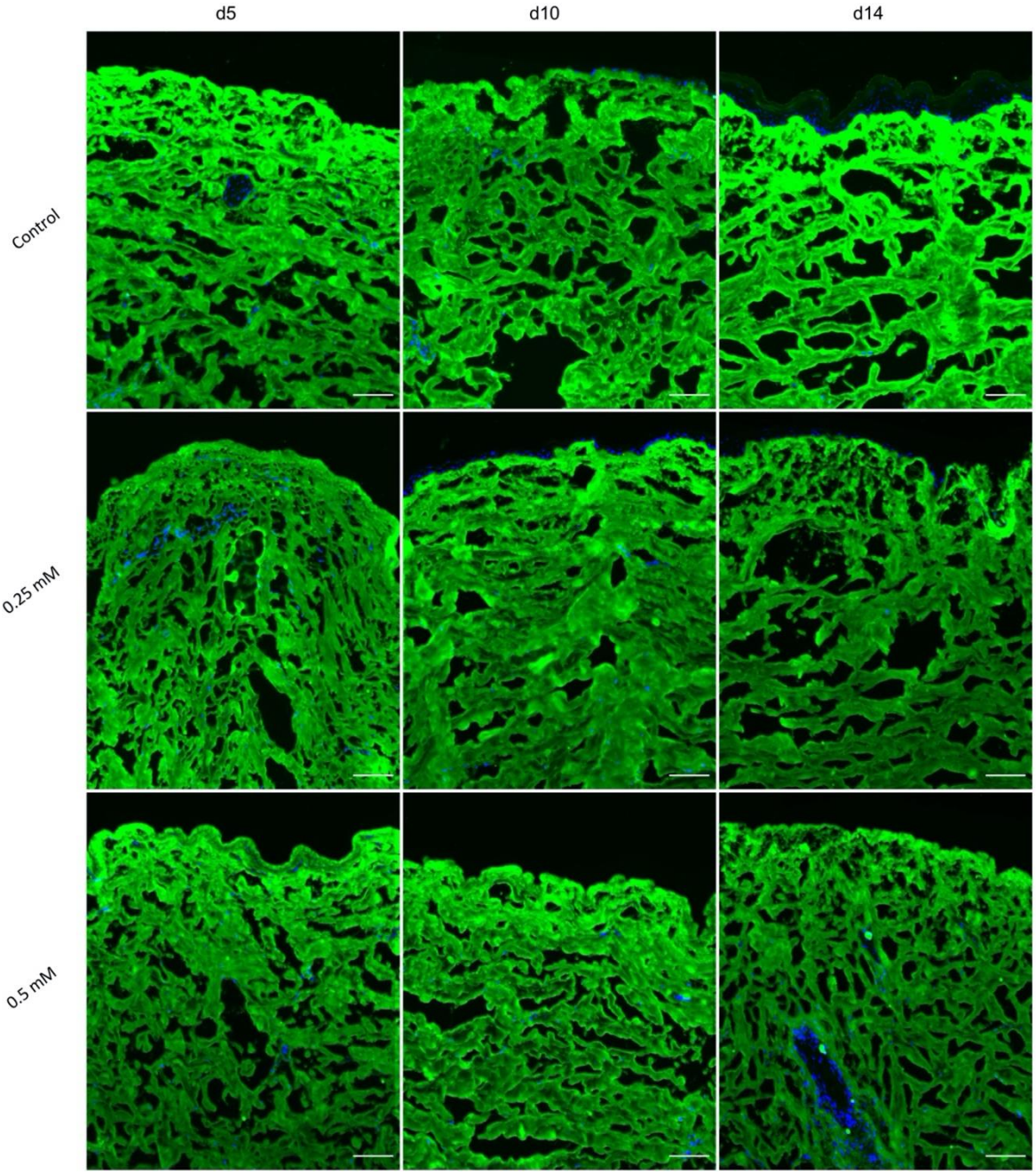

Figure S5. Kinetics of HLA (Human Leukocyte Antigen) expression in poloxamer hydrogel-treated ex vivo cultured human skin explants submitted to 10s long experimental burn injury. Immunostaining of HLA was performed on human skin explants harvested at different time points post-burn (days 5, 8 and 14). After wound debridement, on day 1, daily treatment with poloxamer p407/p188 hydrogel was applied containing NaHS concentrations of: Control (0 mM) **(a)**, 0.25 mM **(b)** and 0.5 mM **(c)**. At day 8, an increase in HLA staining is observed for lesion treated with NaHS (0.25 and 0.5 mM)-poloxamer hydrogel compared to lesions treated with only poloxamer hydrogel. At day 14, this increase is no longer present and the staining is comparable to the control. Results obtained for each condition are representative of 3 series of experiments performed on skin explants derived from 3 donors. Scale bar: 100 μm.

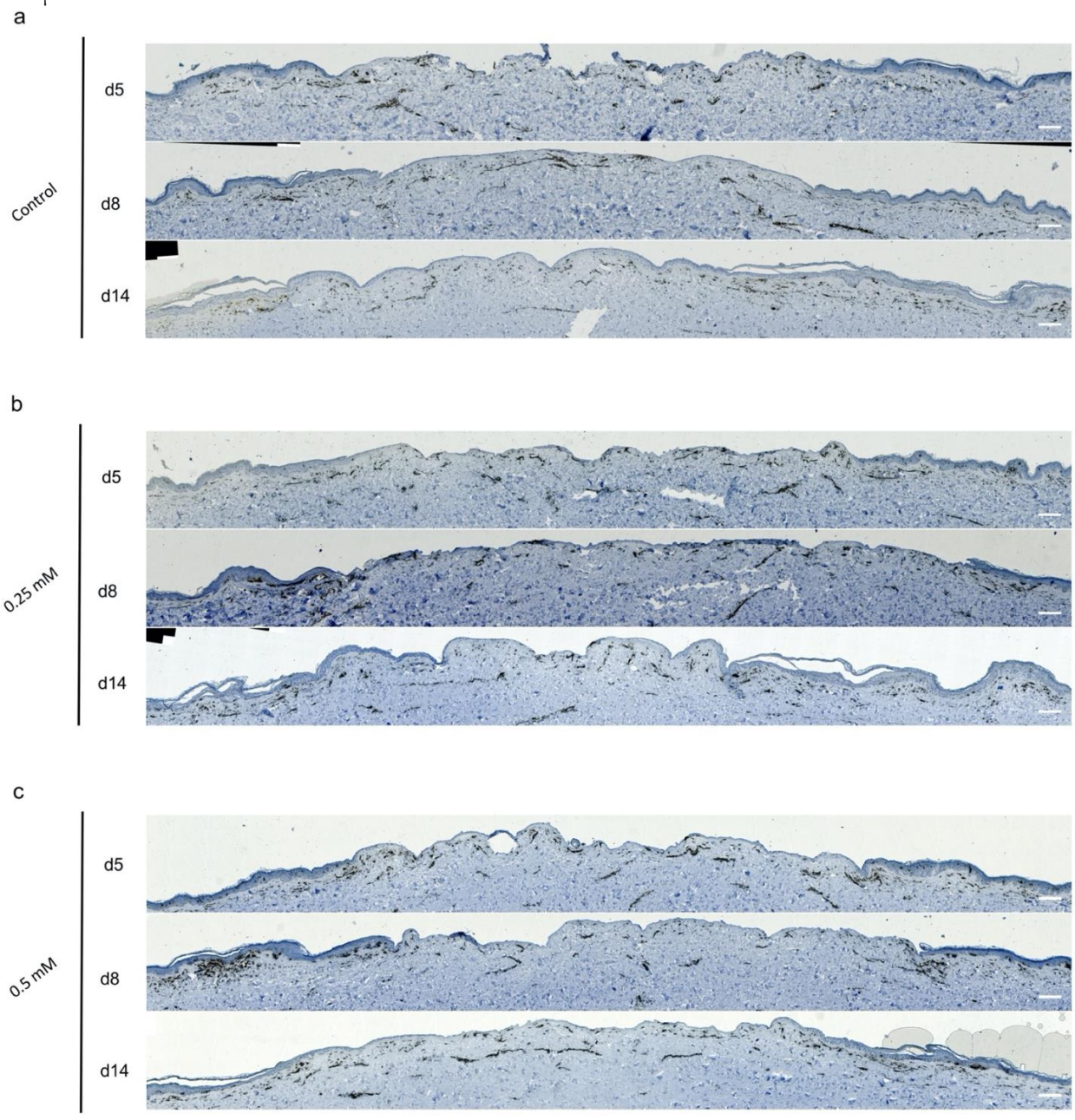

Figure S6. Kinetics of α-SMA dermal expression in ASCs-treated ex vivo cultured human skin explants submitted to 10 s long experimental burn injury. Immunostaining of α-SMA was performed on human skin explants harvested at different time points post-burn (days 5, 10 and 15). After wound debridement, on day 1, monolayer ASCs (MO) (middle panels) and encapsulated ASCs (EN) (bottom panels) were intradermally injected. In the negative control (NC) (upper panels) no cells were injected. No significant difference was observed when comparing the different conditions, irrespective of the time point considered following burn injury. Results obtained for each condition are representative of 6 series of experiments performed on skin explants derived from 6 donors. Scale bar: 100 μm.

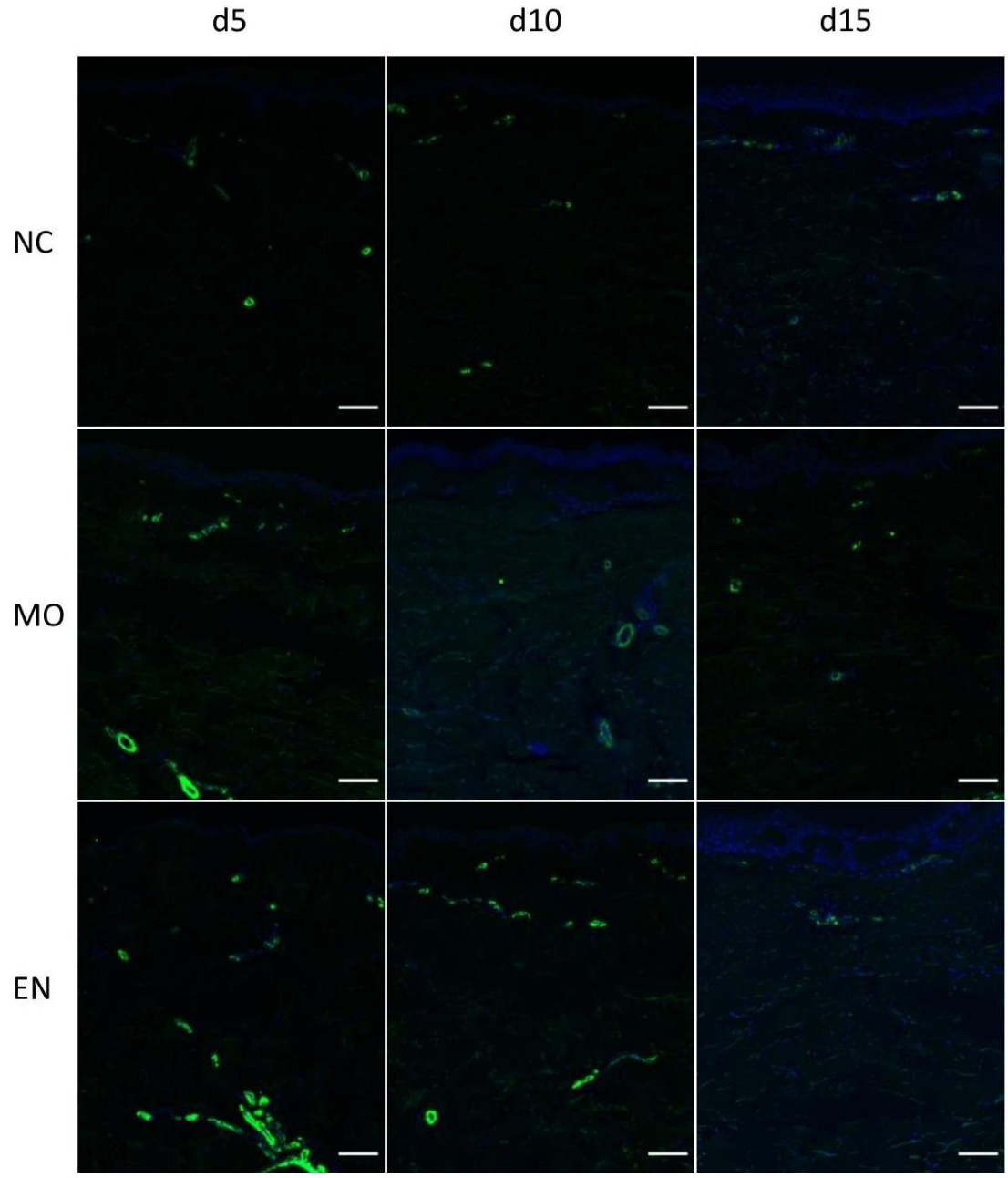

Figure S7. Kinetics of collagen III dermal expression in ASCs-treated second degree burn model. Immunostainings of collagen III were performed on human skin explants harvested at different time points post-burn (days 5, 10 and 15). After wound debridement, on day 1, monolayer ASCs (MO) (middle panels) and encapsulated ASCs (EN) (bottom panels) were intradermal injected. In the negative control (CN) (upper panels) no cell were injected. Scale bar: 100 μm.

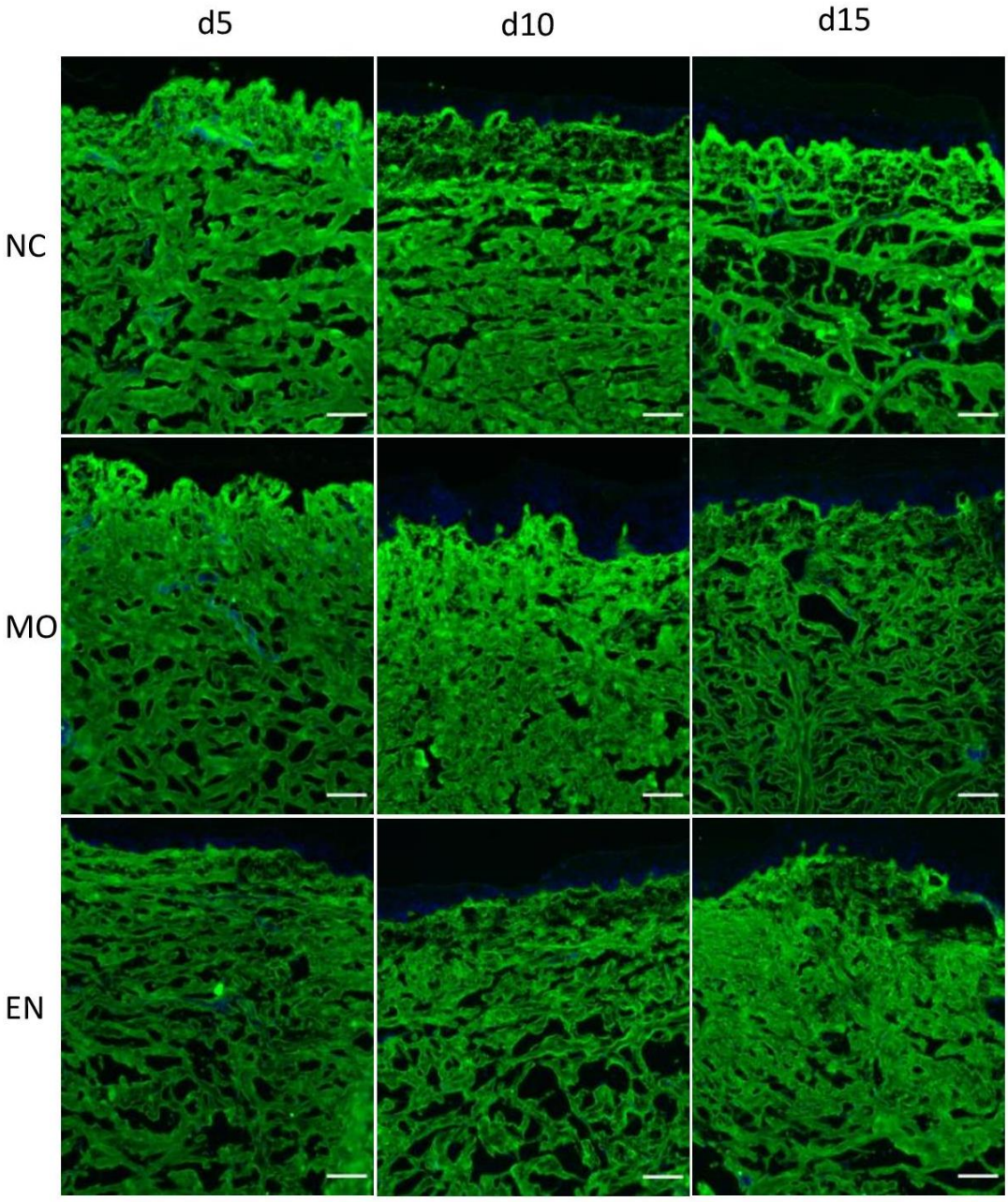

Figure S8. Kinetics of collagen I dermal expression in ASCs-treated second degree burn model. Immunostaining of collagen I was performed on human skin explants harvested at different time points post-burn (days 5, 10 and 15). After wound debridement, on day 1, monolayer ASCs (MO) (middle panels) and encapsulated ASCs (EN) (bottom panels) were intradermally injected. In the negative control (CN) (upper panels) no cells were injected. Scale bar: 100 μm.