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Development of a human tissue engineered hypertrophic scar model

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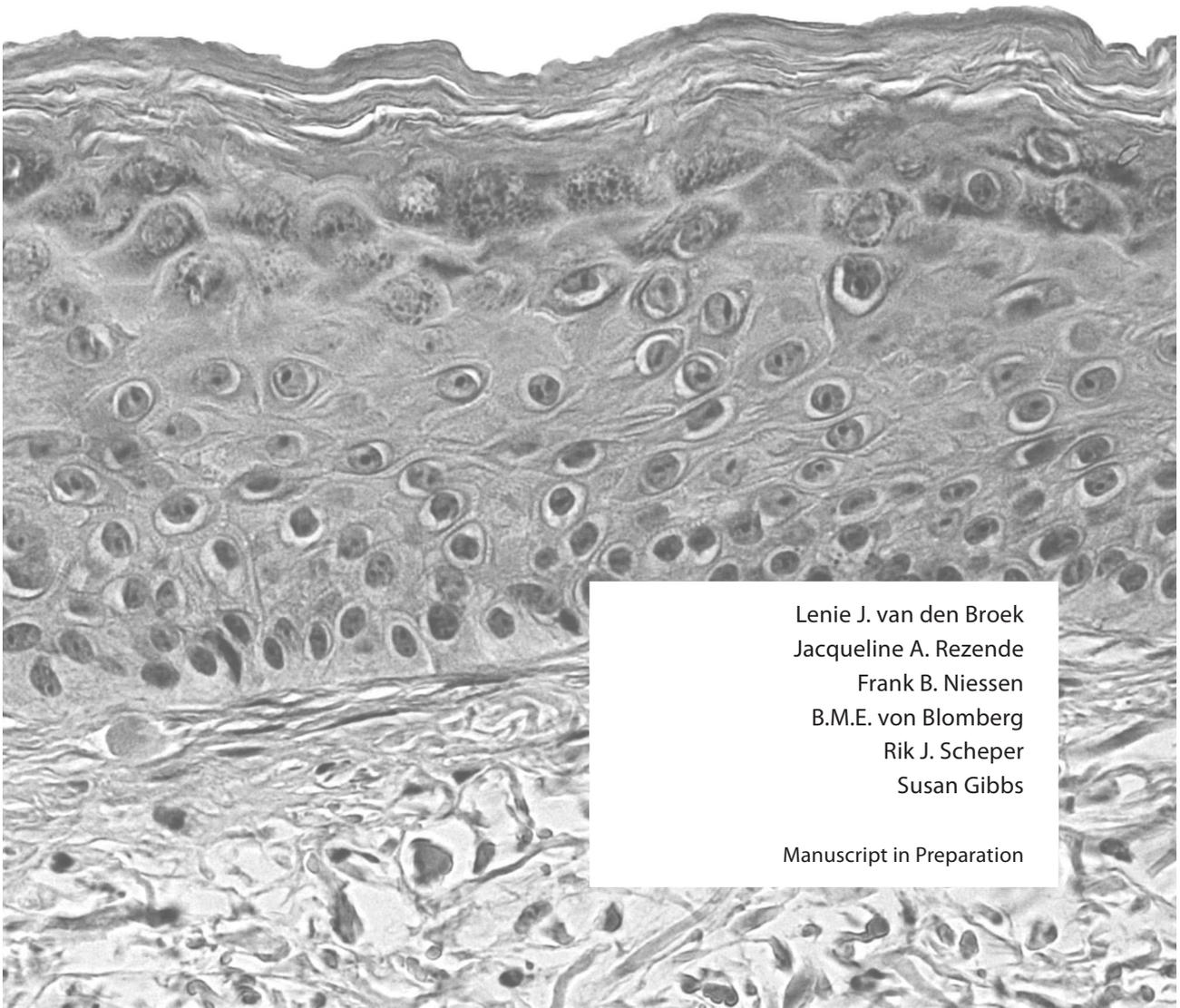
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Chapter 4

Skin-derived CCL27 stimulates release of inflammatory factors from monocytes during cutaneous wound healing



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ABSTRACT

Cutaneous wound healing is an interactive process involving skin residential and infiltrating cells. The objective of this study was to further explore which cells produce and which cells are targeted by chemokine CTACK/CCL27 during wound healing by studying skin residential cell (human microvascular endothelial cells (hMVECs)) and infiltrating cells (granulocytes and monocytes). CCL27 is present in a wide variety of wound exudates and is secreted by hMVEC and monocytes after stimulation with factors related to skin trauma (VEGF and LPS respectively). All studied cells expressed CCL27 receptor CCR10. Interestingly, CCL27 induced secretion of key inflammatory mediators (IL-6, CXCL8, CCL2 and CCL20) involved in wound healing from monocytes but did not influence monocyte viability or migration. Granulocytes and hMVEC did not respond significantly to CCL27 with regards to migration, proliferation or secretion of inflammatory mediators even though they expressed CCR10. Taken together these results highlight multi-functional roles for CCL27 in cutaneous wound healing.