**Supplementary Figure 1. Schematic overview of experimental setup**

(A) Peripheral blood-derived CD14+ monocytes were cultured in presence of GM-CSF or M-CSF to induce a M(GM-CSF) or M(GM-CSF) macrophage phenotype, respectively. After 7 days in culture, macrophages were activated with 100 ng/mL LPS after which they were used in co-culture experiments. PBEC were cultured until confluent after which they were cultured at the air-liquid interface (ALI-PBEC) and differentiated for 2 weeks. Upon 2 weeks differentiation, ALI-PBEC and (LPS-activated) macrophages were co-cultured for 24h or until wound closure (B) Epithelial wounding was performed by mechanically scraping well-differentiated ALI-PBEC, using a template to ensure identical wound surface areas (16). Wound closure was measured over time; representative light microscopic images were taken at various time points and are shown here.

**Supplementary Figure 2. Macrophage polarization**

(A) mRNA expression of *CD163* (M(M-CSF) macrophages – blue bars) *and CHI3L1* (M(GM-CSF) macrophages – red bars)in (LPS-activated) M(GM-CSF) and M(M-CSF) macrophages was measured by q-PCR (n=3 independent experiments). (B) Protein levels of IL-10 (M(M-CSF) macrophages – blue bars) and IL-12/IL-23p40 (M(GM-CSF) macrophages – red bars) were measured at 24h after LPS stimulation and upon co-culture (n=3 independent experiments).

Data are shown as mean ± SEM. \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001, \*\*\*\* p < 0.0001.

**Supplementary Figure 3. Inhibition of key repair pathways and molecules during epithelial wound repair**

To determine the contribution of several pathways that play a role in epithelial wound repair to M(GM-CSF) (red line) or M(M-CSF) (blue line)-induced enhanced epithelial wound closure, various inhibitors were added in the epithelial mono (black lines)- and co-cultures upon epithelial wounding. Inhibitors of the TGF-β pathway (SB-434215), and MMP inhibitor (GM6001) and an anti-LL-37 antibody were added upon wounding and the residual wound area was measured over time (n=3 independent ALI-PBEC donors).

Data are shown as mean ± SEM.