Supporting Information

Sericin hydrogels promote skin wound healing with effective regeneration of hair follicles and sebaceous glands after complete loss of epidermis and dermis

Chao Qi[#,a], Luming Xu[#,a], Yan Deng[a], Guobin Wang*[,b], Zheng Wang*[,a,b], Lin Wang*[,a,c]

[a]Research Center for Tissue Engineering and Regenerative Medicine, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430022, China
*Lin Wang, E-mail: lin_wang@hust.edu.cn
*Zheng Wang, E-mail: zhengwang@hust.edu.cn

[b]Department of Gastrointestinal Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430022, China
*Guobin Wang, Email: wgb@hust.edu.cn

[c]Department of Clinical Laboratory, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430022, China

[#]These authors contributed equally to this work.

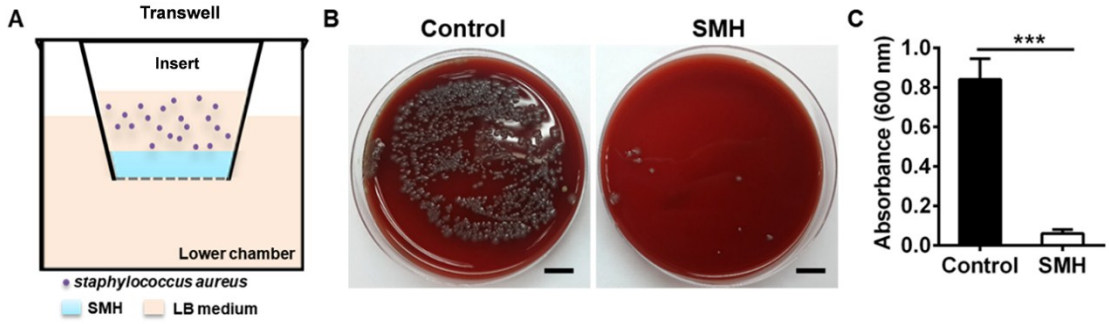

Figure S1. Bacteria shielding assay. (A) Schematic illustration of the bacteria shielding assay. SMH was prepared in the bottom of the insert of a transwell chamber. 100 μL LB medium containing *staphylococcus aureus* was added on SMH in the insert and 600 μL of LB medium without bacteria were added in the lower chamber. The transwell was incubated at at 37°C for 24 hours. The amount of the bacteria that migrated through SMH was determined by spreading 10 μL of LB medium in the lower chamber on a blood agar plate (B) and incubated at 37°C for 24 hours, and also quantified by measuring the absorbance at 600 nm of LB medium immediately extracted from the lower chamber (C). Transwell chamber without SMH was set as control; **(B)** Images of the blood agar plates 24 hours after 10 μL of LB medium extracted from the lower chamber was spread onto it; **(C)** The absorbance at 600 nm of the LB medium extracted from the lower chamber. ***P<0.001. Three samples per group. Scale bars, 1cm.

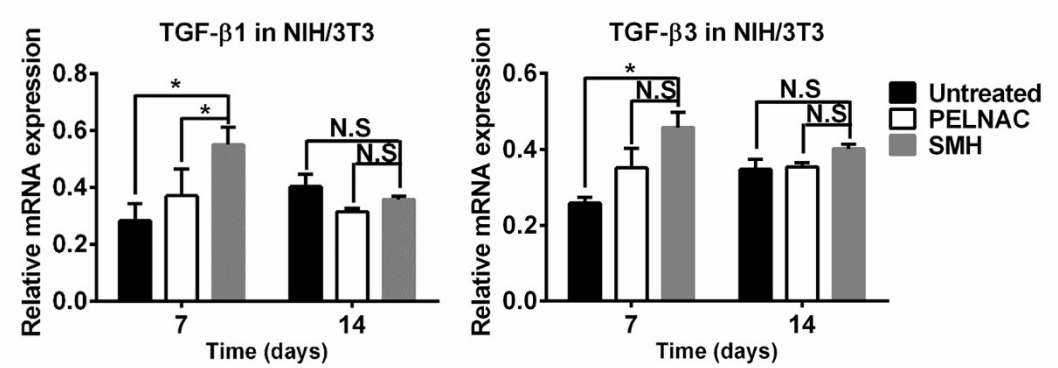

Figure S2. The relative mRNA levels of TGF-β1 and TGF-β3 in NIH/3T3 cells 7 and 14 days after being treated with PELNAC and SMH. The relative amount of gene transcripts was normalized to GAPDH. *P<0.01, N.S, not significant.

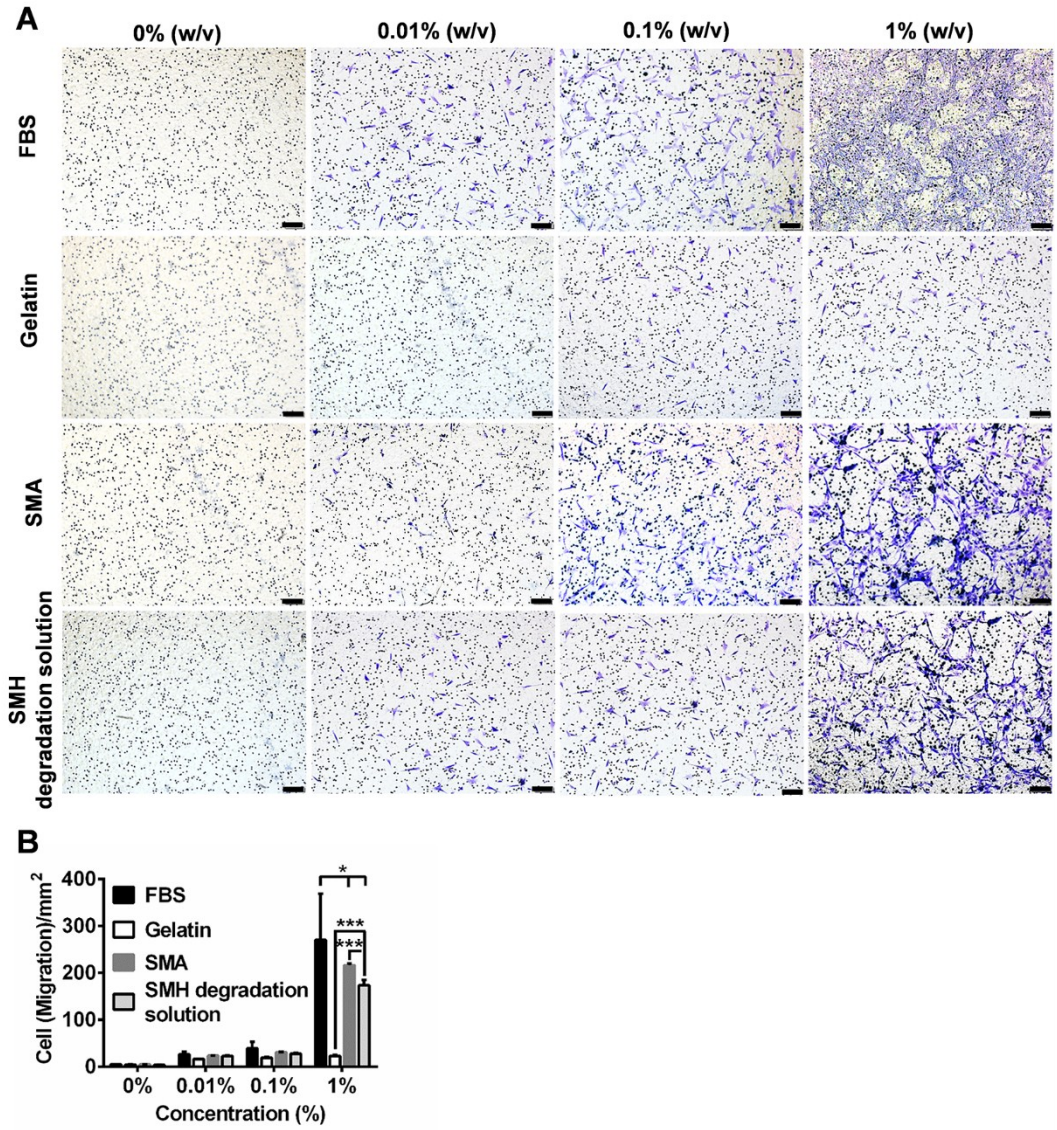

Figure S3. Transwell migration assay of BMSCs treated by FBS, gelatin, SerMA solution (SMA) and SMH degradation solution. (A) Representative images of migrated cells (stained by crystal violet); **(B)** Quantification of the numbers of migrated cells in (A). *P<0.05, ***P<0.001. Three samples per group. Scale bars, 100 μm.