

Electronic Supplementary Material (ESI) for Biomaterials Science.
This journal is © The Royal Society of Chemistry 2021

Electronic Supplementary Information

Medical Gloves Modified by A One-Minute Spraying Process with Blood-Repellent, Antibacterial and Wound-Healing Abilities

Yi Zhuo^{a†}, Xinyan Cheng^b, Hua Fang^a, Yi Zhang^a, Bing Wang^a, Shuang Jia^c, Weihao Li^c, Xuetao Yang^c, Yan Zhang^{a*}, Xiaolei Wang^{c,d*}

^a The Second Affiliated Hospital, Nanchang University, Nanchang, Jiangxi 330088, China.

^b School of Materials Science and Engineering, Nanchang University, Nanchang, Jiangxi 330088, China.

^c The National Engineering Research Center for Bioengineering Drugs and the Technologies, Institute of Translational Medicine, Nanchang University, Nanchang, Jiangxi 330088, China.

^d College of Chemistry, Nanchang University, Nanchang, Jiangxi 330088, China.

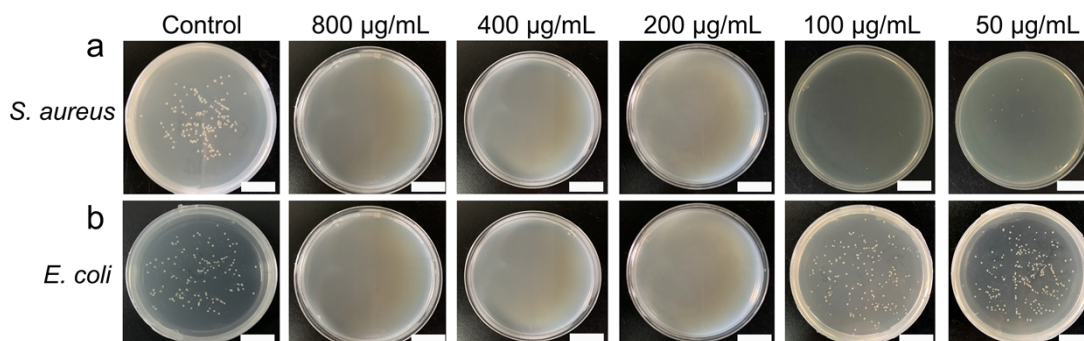


Fig. S1 Agar plates photos of a) *S. aureus* and b) *E. coli* as referred to Fig. 3a and 3b. (scale bar = 2 cm).

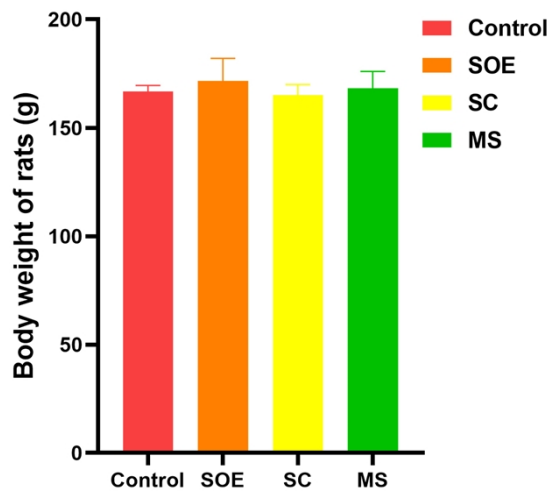


Fig. S2 Body weight of rats in each group before experiments *in vivo*. Data are means \pm SD. (n = 3).

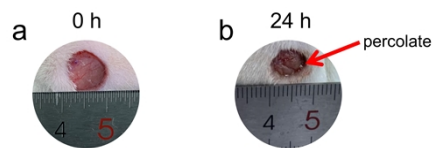


Fig. S3 Photographs of wounds in rats after bacteria inoculation for a) 0 h and b) 24 h.

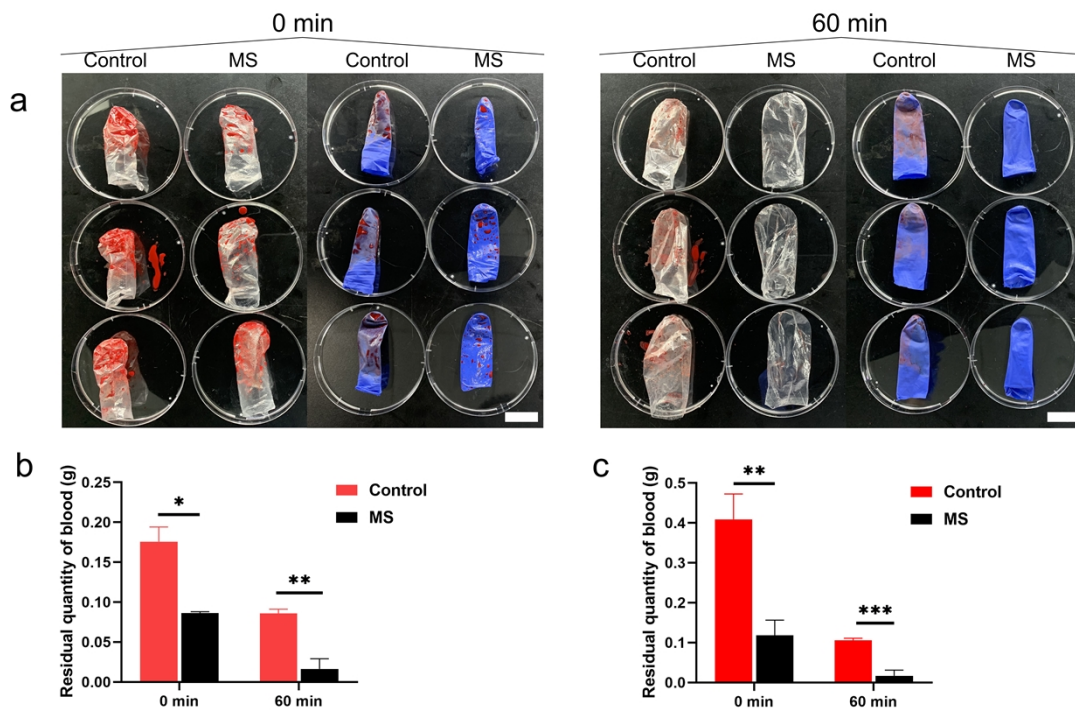


Fig. S4 Blood repellent effect of blood-repellent polyethylene film gloves and nitrile gloves *in vivo*. a) The blood repellent effect of polyethylene film gloves and nitrile gloves on new blood after sprayed with MS or not (0 min, 60 min) (scale bar = 3 cm); b) The corresponding quantitative measurement of blood repellent effect of ordinary polyethylene film gloves (Control) and blood sparing polyethylene film gloves sprayed with MS *in vivo*; c) The corresponding quantitative measurement of blood repellent efficiency of ordinary nitrile gloves (Control) and blood sparing nitrile gloves sprayed with MS *in vivo*. Data are means \pm SD. (n = 3). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

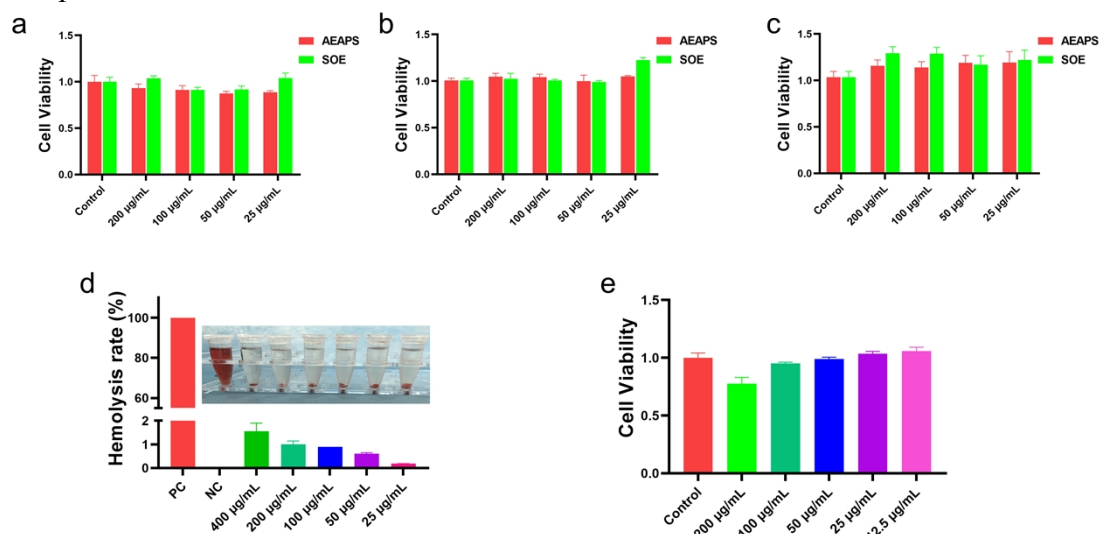


Fig. S5 Cytotoxicity of AEAPS and SOE on HUVECs in a) 6 h, b) 24 h, and c) 72h; d) Hemolysis rate of RBCs co-cultured with MS; e) Cytotoxicity of HUVECs treated with MS of different concentrations for 24 h. Data are means

\pm SD. (n = 3).

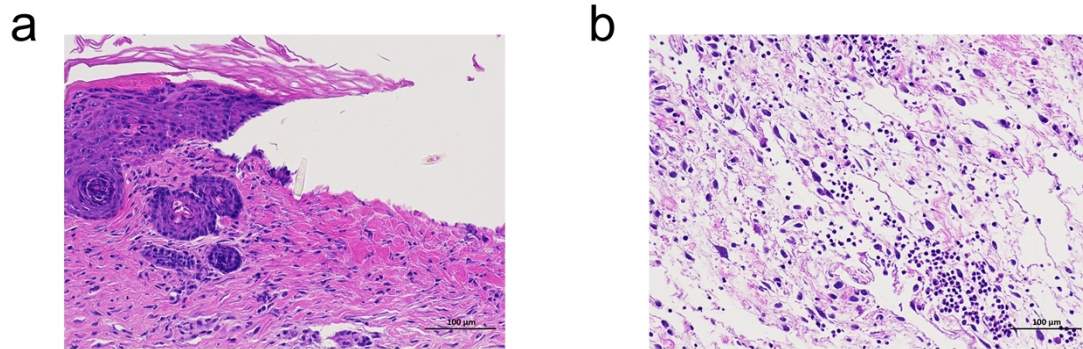


Fig. S6 H&E stained pictures of uninfected wounds after MS treatment for a) 24 h and b) 48 h.