Supplementary Information (SI) for Journal of Materials Chemistry B.

Suppl. Figure 1. (A) SEM images of Ag-CeO_2 NCs and Bac@Ag-CeO_2 with a scale of 1 µm, and (B) Zeta potential of various nanostructures.

Suppl. Figure. 2. (A) Synthesis process images of Bac@Ag-CeO_2@PSG, (B) Photographs of Bac@Ag-CeO2@PSG adhered to porcine skin, PMMA, PTFE, glass, steel and wood, (C) Toughness analysis and (D) compression ability analysis of Bac@Ag-CeO_2@PSG, (E) Photographs of the self-healing process of Bac@Ag-CeO_2@PSG, (F) SEM images of cross section of Bac@Ag-CeO_2@PSG.

Suppl. Figure 3. The zeta potential of MRSA membrane determined after the treatment of Bac@Ag-CeO_2. Data were expressed as mean±SEM (n=4). **P < 0.01 versus control group.

Suppl. Figure 4. Quantification of antibiofilm activity of Bac@Ag-CeO_2 against early-stage MRSA biofilm. Data were expressed as mean±SEM (n=4). *P < 0.05 and **P < 0.01versus control or the corresponding groups.

Suppl. Figure 5. Flow cytometry of live and dead MRSA labelled using SYTO9 and PI after 24 h of nanostructure treatment.

Suppl. Figure 6. Antioxidant radical scavenging potential of Bac@Ag-CeO_2@PSG. (A) DPPH scavenging, (B) Superoxide anion scavenging, (C) Hydroxyl radical scavenging, (D) ABTS scavenging. Data were expressed as mean±SEM (n=4).

Suppl. Figure 7. The H&E-stained histology of the heart, lung, liver, kidney, and spleen in the MRSA-infected mice of different treatment groups.