Supplementary material

Sodium triphosphate-capped silver nanoparticles on a decellularized scaffold-based polyurethane vascular patch for bacterial infection inhibition and rapid endothelialization

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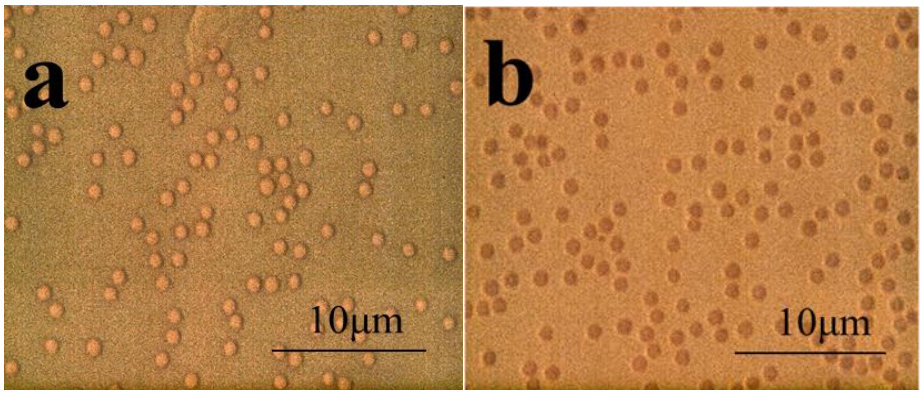
1. Hemolysis assays

Table S1. Hemolysis rates of the pure PU film, AgNP/PU and Ag–STPP NP/ PU.

Samples	Hemolysis rate (%)
Blank	0.86±0.18
Pure PU	2.07±0.21
AgNP/PU	4.73±0.28
Ag–STPP NP/ PU	1.84±0.16

2. Red blood cell (RBC) morphology tests

Each film was cut into a wafer with a diameter of 6 mm, and the wafer was placed into the bottom of a centrifuge tube. Sodium citrate-anticoagulated fresh whole blood (4.0 mL) was added to normal saline (5.0 mL) to give diluted blood. The diluted blood (0.2 mL) and normal saline (10.0 mL) were added to the above centrifuge tube. The mixture was incubated at 37 °C for 1 h. The RBC morphologies were observed with XD-202 microscope (Novel Optics Co., Nanjing, China). The mixture of the diluted blood (0.2 mL) and normal saline (10.0 mL) was used as the control sample. Each test was performed in triplicate.



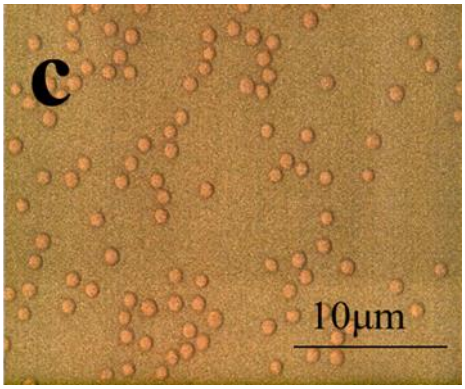


Figure S1. RBC morphologies: (a) the control sample (RBCs in normal saline), (b) the pure PU film, (c) Ag–STPP NP/PU

3. Thermogravimetric analysis (TGA)

TGA was performed on Pyres1 Thermogravimetric Instrument (Perkin-Elmer, USA). Under dry nitrogen flow, each film was heated from 25 to 550 ºC at a heating rate of 10 ºC/min.

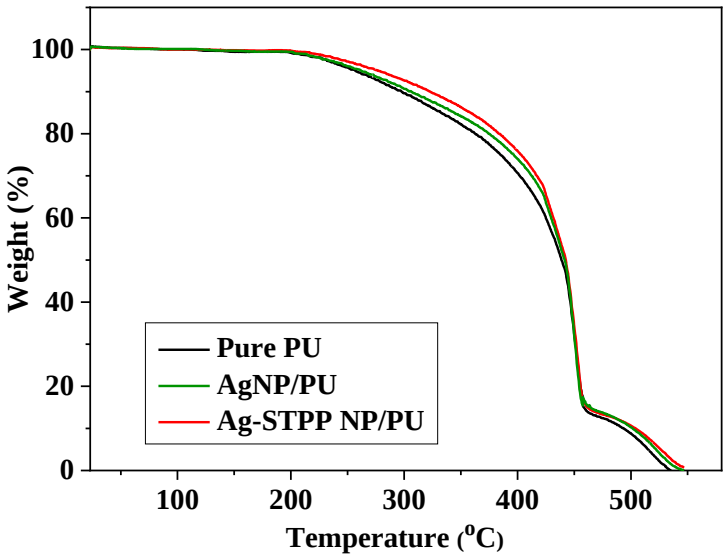


Figure S2. TGA image of the pure PU film, AgNP/PU and Ag–STPP NP/PU.

The TGA curves of the pure PU film, AgNP/PU and Ag–STPP NP/PU are shown in Figure S2. These three films began to decompose at about 225 ºC, indicating that both AgNPs modification and Ag–STPP NPs modification did not affect the thermal

stability of the film.

3. Mechanical property tests

Each film was cut into a dumb-bell shape slice (20 mm × 4 mm × 1 mm) as a tensile bar. The mechanical property tests were carried out at 25 °C on Instron 4200 tensile test machine (Instron Inc., U.K.) at a tensile speed of 50 mm/min. Five replicates were tested for each film.

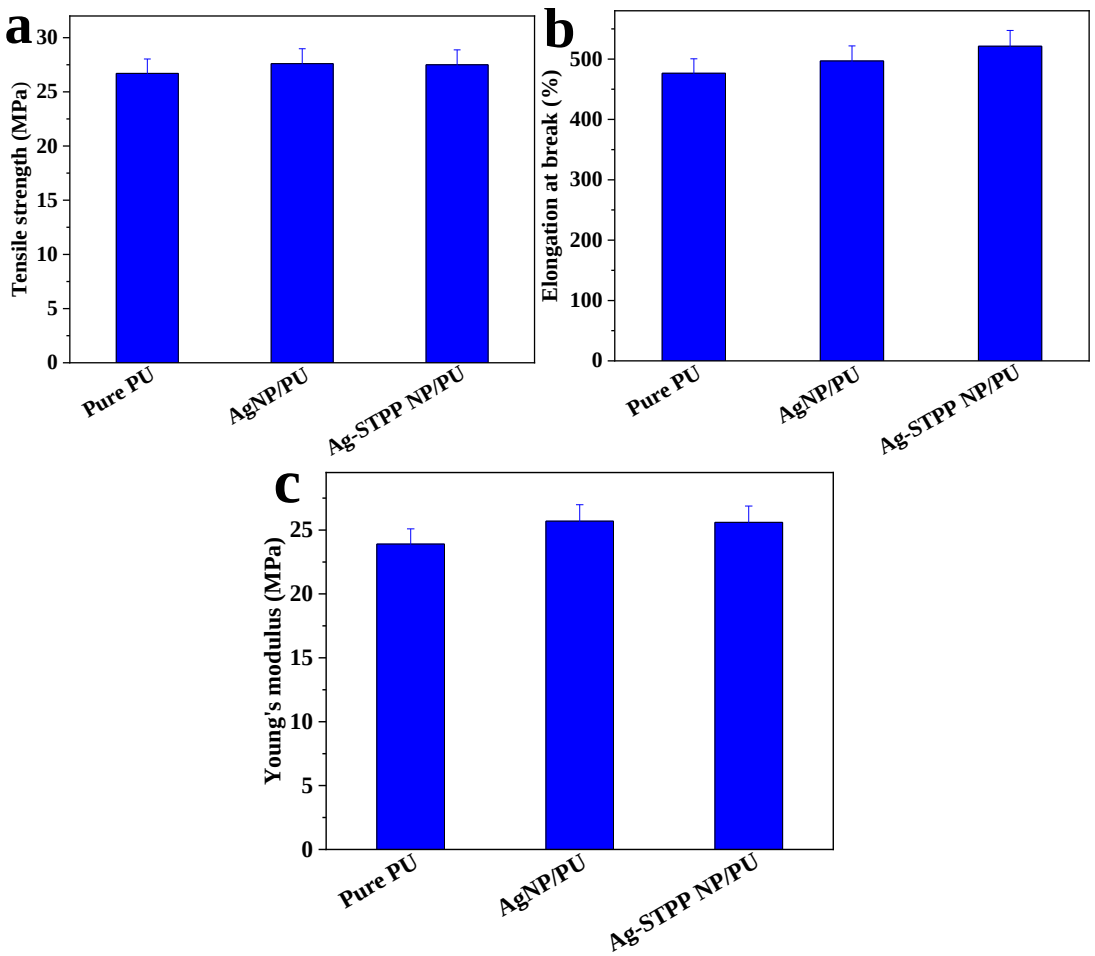


Figure S3. Mechanical properties: (a) tensile strength, (b) the elongation at break, (c) Young's modulus.

The mechanical properties of the pure PU film, AgNP/PU and Ag–STPP NP/PU are shown in Figure S3. The tensile strength values of the pure PU film, AgNP/PU and

Ag–STPP NP/PU were 26.7, 27.6 and 27.5 MPa, respectively. The elongations at break of the pure PU film, AgNP/PU and Ag–STPP NP/PU were 476%, 497% and 521%, respectively. Young's moduli of the pure PU film, AgNP/PU and Ag–STPP NP/PU were 23.9, 25.7 and 25.6 MPa, respectively. These data indicated that both AgNPs modification and Ag–STPP NPs modification did not affect the mechanical properties of the film obviously.