Electronic Supplementary Information (EIS)

Reduced fibrous capsule formation at nano-engineered silicone surfaces via tantalum ion implantation

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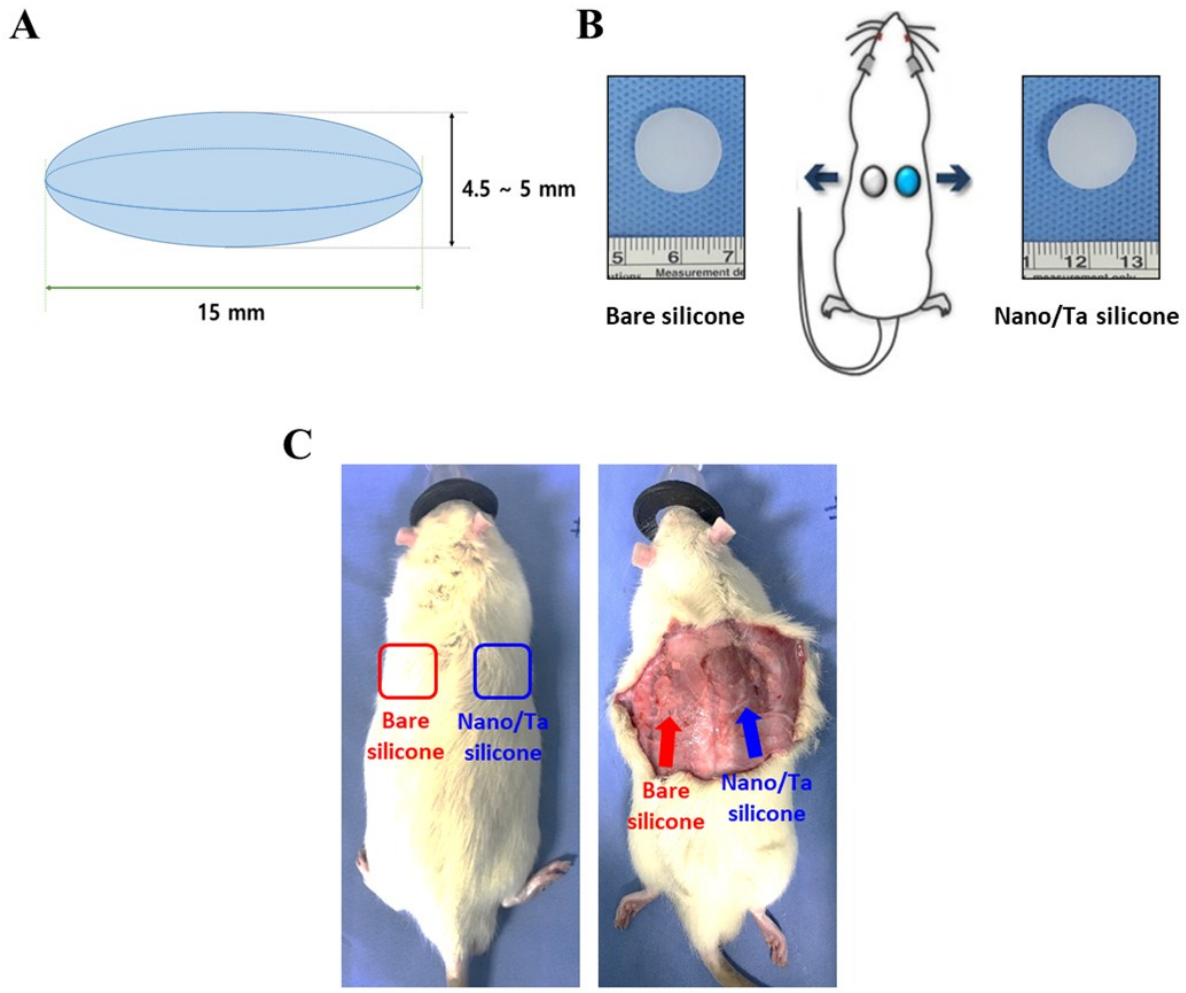

Fig. S1. (A) Schematic illustration of the silicone implant and its dimensions used in the *in vivo* animal test. (B) *In vivo* mouse dorsal implantation model. (C) Optical views of the implanted bare and Nano/Ta silicone samples after 8 weeks of surgery.

Table S1a. Mean- and maximum-height surface roughnesses (R_a and R_z) for the three types of silicone implants.

Surface roughness	**Bare silicone**	**Smooth/Ta silicone**	**Nano/Ta silicone**
$\mathbf{R_a}$ (nm)	17 ± 4	21 ± 7	67 ± 6
$\mathbf{R_z}$ (nm)	87 ± 16	91 ± 23	368 ± 34

Table S1b. Mean- and maximum-height surface roughnesses (R_a and R_z) of Smooth/Ta and Nano/Ta silicone after 28 days of immersion in PBS.

Surface roughness	**Smooth/Ta silicone**	**Nano/Ta silicone**
$\mathbf{R_a}$ (nm)	25 ± 8	65 ± 7
$\mathbf{R_z}$ (nm)	144 ± 5	404 ± 35

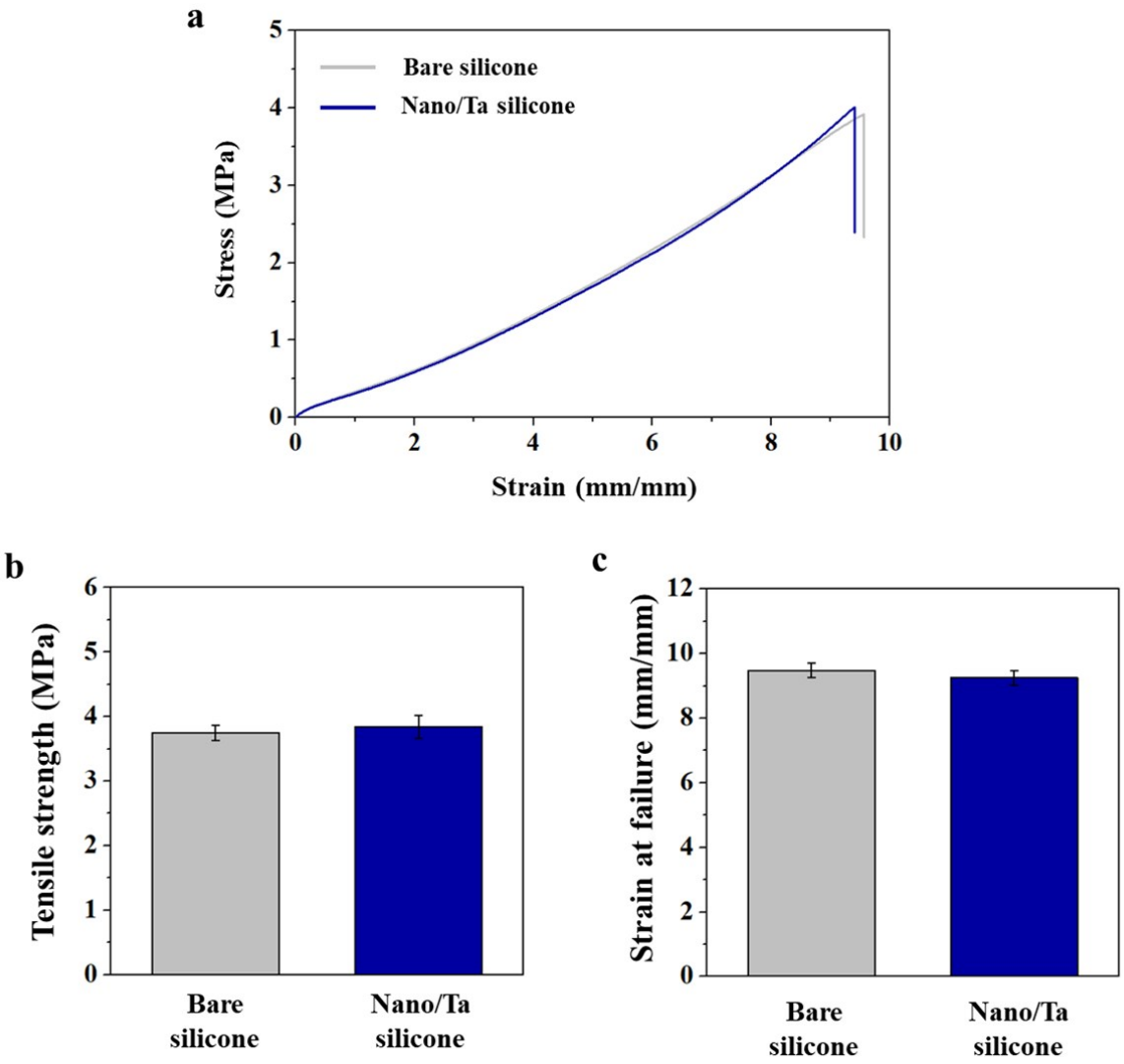

Fig. S2. (a) Stress–strain curve, (b) tensile strength, and (c) strain at failure of bare and Nano/Ta silicone implants.

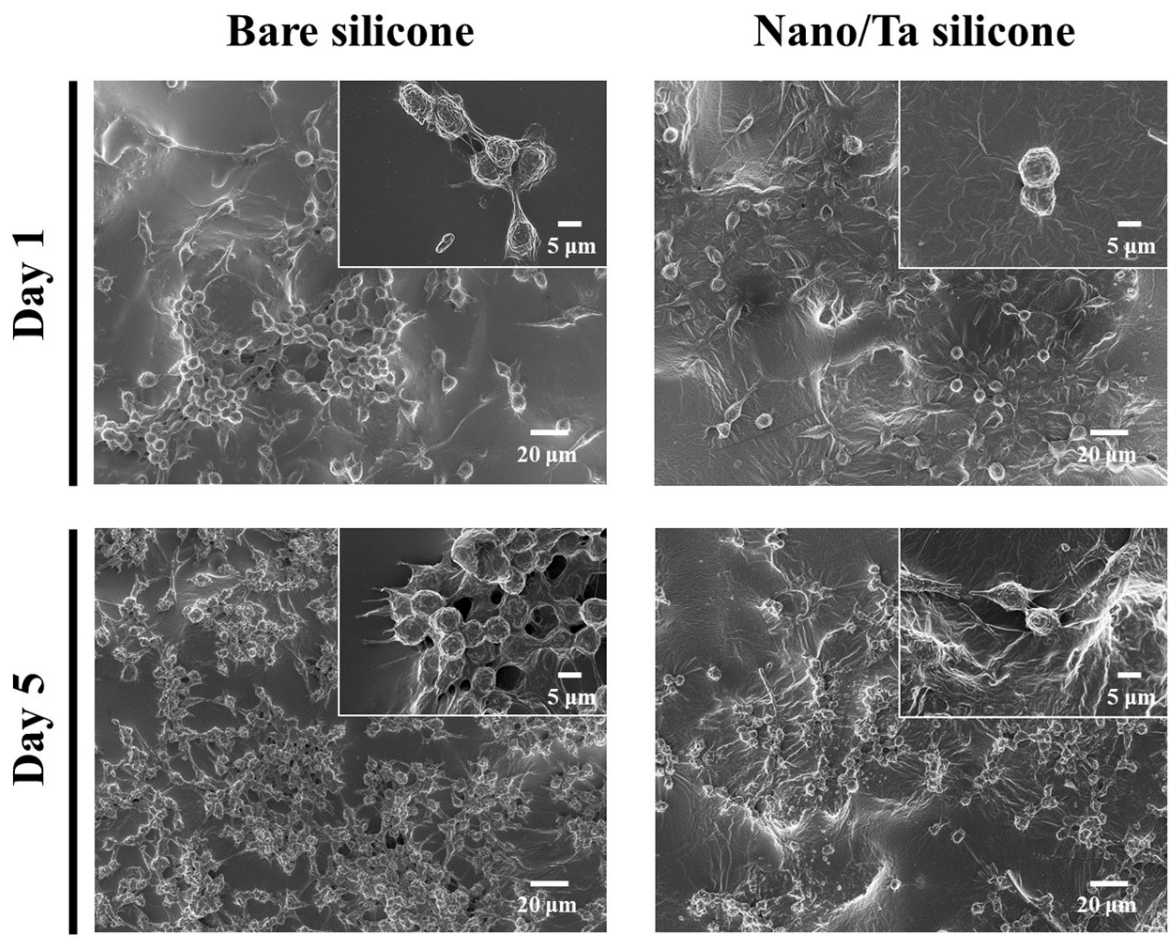

Fig. S3. FE-SEM images of adhered macrophages on the surfaces of bare and Nano/Ta silicone implants after 1 and 5 days of culturing. Insets are magnified views of the macrophages.