## **Supporting information**

Efficient reduction of fibrous capsule formation around silicone breast implants densely grafted with 2-methacryloyloxyethyl phosphorylcholine (MPC) polymers by heat-induced polymerization

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**Fig. S1** Water contact angles on non-grafted and MPC-grafted non-transparent PE plates. The contact angles on upper and bottom sides are compared: A) advancing contact angles and B) receding contact angles, respectively. Data are shown as means  $\pm$  SEM (*n*=4). The marker (\*\*\*) indicates 0.0001  $\leq p < 0.001$  and "No SD" indicates no significant difference.



**Fig. S2** Comparison of *in vitro* protein adsorption. Adsorbed amount of A) BSA and B) BPF on non-grafted, UV-induced MPC-grafted and heat-induced MPC-grafted PDMS surfaces. Data are shown as mean  $\pm$  SEM (*n*=4). The marker (\*\*\*) indicates 0.0001  $\leq p < 0.001$  and "No SD" indicates no significant difference.



**Fig. S3** Adhered NIH-3T3 fibroblast cells on non-grafted and heat-induced MPC-grafted PDMS surfaces. A) CLSM images of NIH-3T3 cells adhered on non-grafted and heat-induced MPC-grafted PDMS surfaces after live/dead staining (Invitrogen, D. Jaiswal et al., *J. Biomed. Nanotech.* 2015, **11**, 2067-2080). Scale bars: 50  $\mu$ m. B) Relative mean fluorescence intensity of green signals from the CLSM images. Data are shown as mean  $\pm$  SEM (*n*=10). The marker (\*\*\*\*) means *p* < 0.0001. The cells showing red fluorescence were less than 0.5% of all cells in both samples.



**Fig. S4** Evaluation of the inflammation score and vascularity in tissues surrounding the nongrafted (white) and heat-induced MPC-grafted implants (grey) at week 8 and 24. Comparison of A) inflammation score and B) vascularity. Data are shown as means  $\pm$  SEM (*n*=24). "No SD" indicates no significant difference.



Fig. S5 Representative images of antibody-stained capsular tissues around the implants for evaluation of the MPO expression at week 8 and 24. Scale bars:  $100 \mu m$ .



Fig. S6 Representative images of antibody-stained capsular tissues around the implants for evaluation of the TGF- $\beta$  expression at week 8 and 24. Scale bars: 100  $\mu$ m.



Fig. S7 Representative images of antibody-stained capsular tissues around the implants for evaluation of the  $\alpha$ -SMA expression at week 8 and 24. Scale bars: 100  $\mu$ m.



Fig. S8 Representative images of anti-CD34-antibody-stained capsular tissues around the implants for evaluation of the numbers of blood vessels at week 8 and 24. Scale bars:  $100 \mu m$ .



Fig. S9 Mechanical properties of non-grafted and heat-induced MPC-grafted silicone implants were compared with universal testing machine (Galdabini Quasar 5). Each implant was located on the lower plate and the upper moving part was placed at the central position of the implant. The implant was gradually compressed by a load cell (5 kN) connected to the moving part at a speed of 5 mm/min. The force on the load was measured according to the stroke. Data were presented with average values (n=3) due to highly stacked data for visibility.