ADVANCED HEALTHCARE MATERIALS

Supporting Information

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Directed Differentiation of Size-Controlled Embryoid Bodies Towards Endothelial and Cardiac Lineages in RGD-Modified Poly(Ethylene Glycol) Hydrogels graphy

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Supporting Information

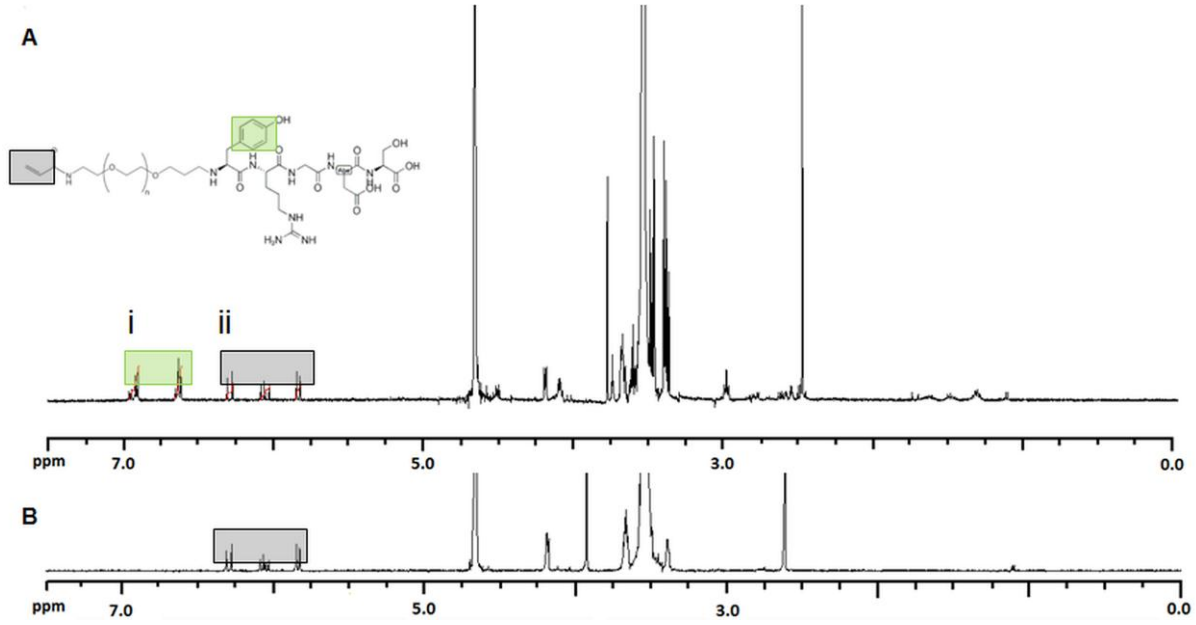

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Figure S1: ^{1}H-NMR spectra of (A) Acryl-PEG-YRGDS and (B) Acryl-PEG-NHS. Peak (i) corresponds to the acryl group of PEG and (ii) corresponds to the aromatic group of YRGDS.

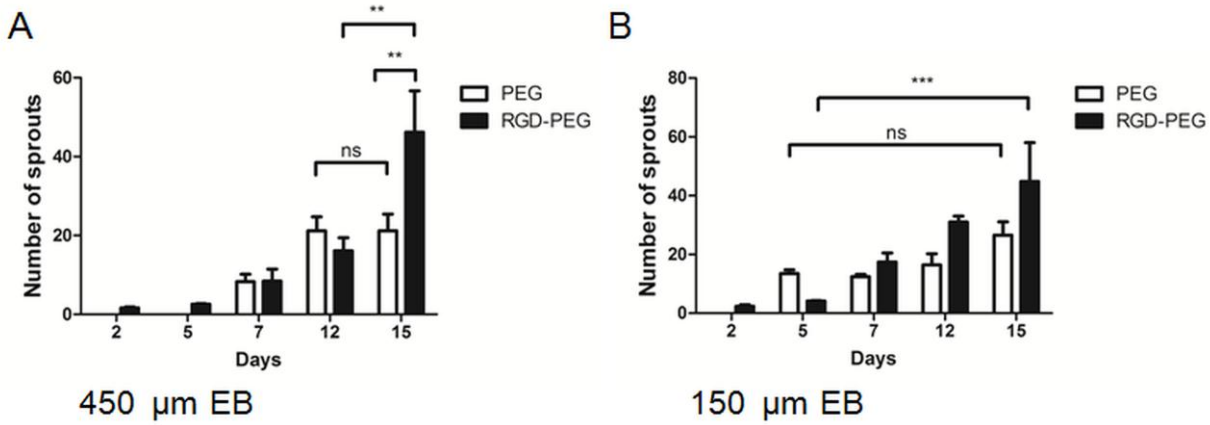

Figure S2: Number of endothelial sprouts. The number of sprouts, derived from one EB or originating of pre-existing vessel sprouts was counted over 15 days in 450 µm-EBs (A) and 150 µm-EBs (B). Data compare EBs inside PEG and RGD-PEG hydrogels. Mean values refer to one EB and were generated from 3 different samples. (n = 3, * indicates $P \leq 0.05$). Error bars without * do not represent statistical significance.

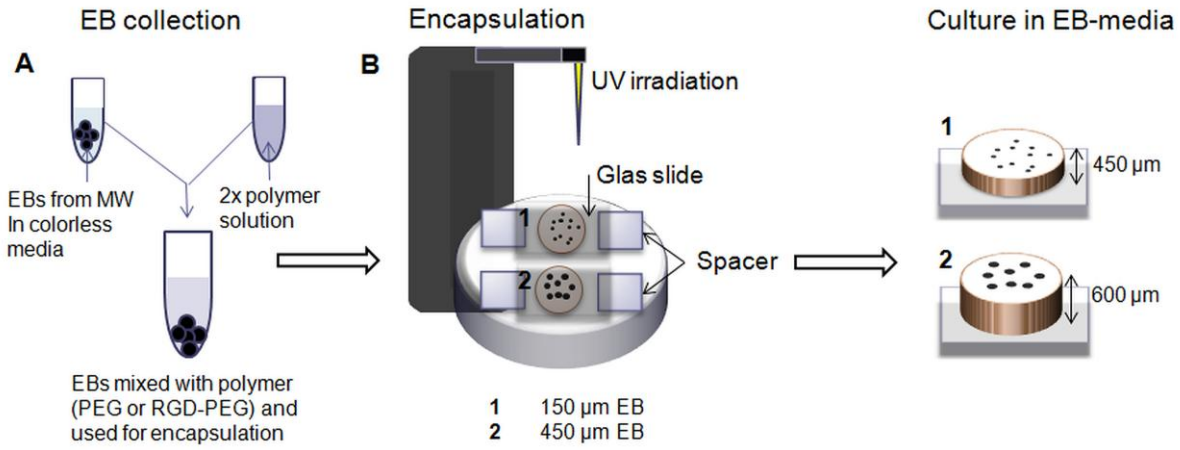

Figure S3: Encapsulation procedure. (A) Different sized EBs (150 µm and 450 µm in diameter) were collected from PEG-microwell arrays after 5 days of culture in EB media and (B) encapsulated in 4-arm PEG with or without RGD-conjugation. A double concentrated polymer solution (PEG or RGD-PEG polymer) was prepared and mixed in 1:1 ratio with colorless DMEM, which contained collected EBs. The polymerization reaction was performed under UV exposure. The use of spacers enabled the control over sample thickness. Encapsulated EBs were cultured in EB media for 15 days. The numbers 1 and 2 refer to the EB-size (1: 150 µm-EBs; 2: 450 µm-EBs). The height of the gel sample containing 150 µm-EBs was 450 µm, while the height of the gel sample containing 450 µm-EBs was 600 µm.