

## Supporting Information

### Photocrosslinkable Polysaccharide Hydrogel Composites Based on Dextran or Pullulan-Amylose Blends for a Human Co-Culture Model of Human Osteoblasts and Endothelial Cells

Ulrike Ritz<sup>a</sup>, Peter Kögler<sup>b</sup>, Isabel Höfer<sup>b,c</sup>, Petra Frank<sup>b</sup>, Sven Klees<sup>b</sup>, Sören Gebhard<sup>b</sup>, Christian Brendel<sup>d</sup>, Kerstin Kaufmann<sup>e</sup>, Alexander Hofmann<sup>a</sup>, Pol Maria Rommens<sup>a</sup>, Ulrich Jonas<sup>b</sup>

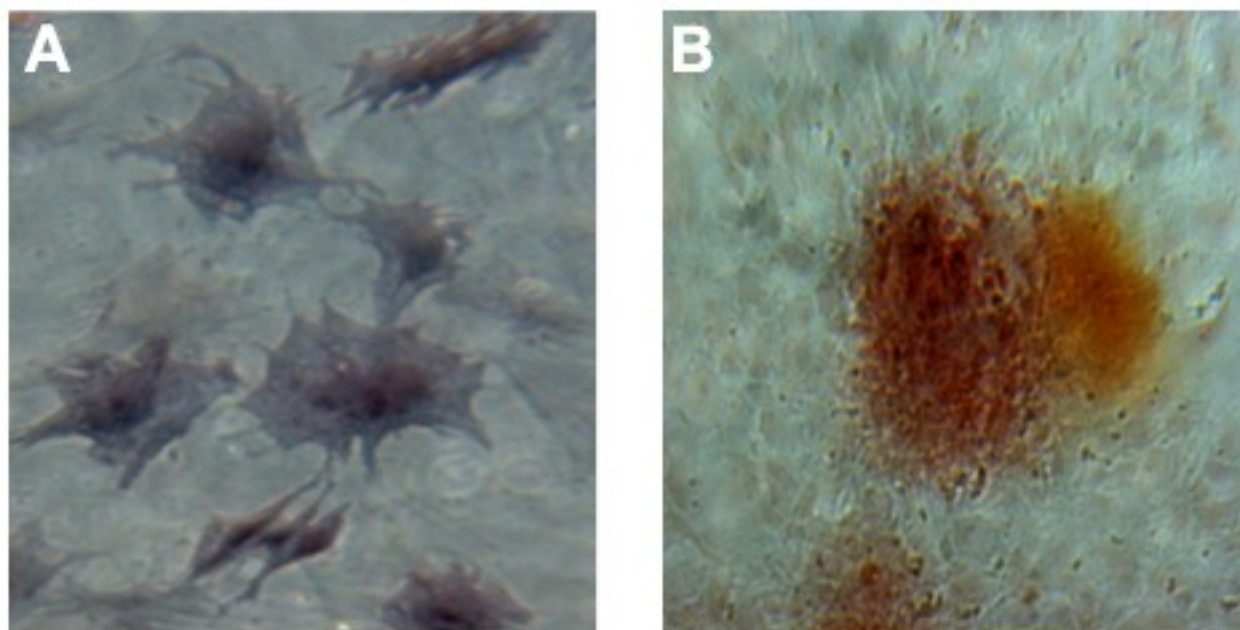
<sup>a</sup> University Medical Center of the Johannes Gutenberg University Mainz, Center for Orthopaedic and Trauma Surgery, Biomatics Group Mainz, Germany \*Email - ritz@uni-mainz.de

<sup>b</sup> Macromolecular Chemistry, University of Siegen, Germany

<sup>c</sup> TU Hamburg-Harburg, Umwelttechnik und Energiewirtschaft, Hamburg, Germany

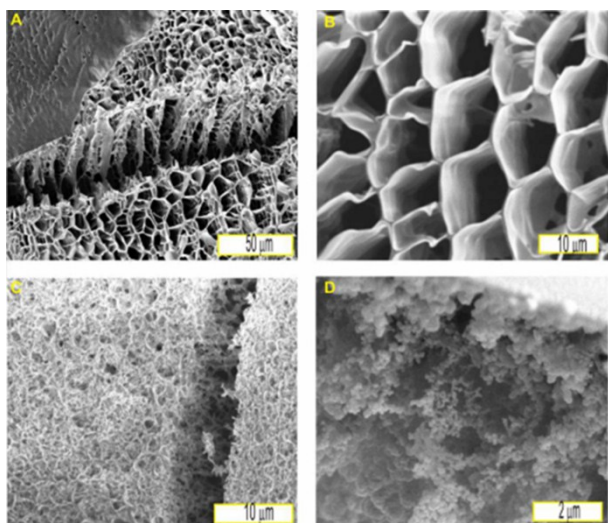
<sup>d</sup> Children's Hospital, Harvard Medical School, Boston, USA

<sup>e</sup> University Health Network, Toronto, Canada

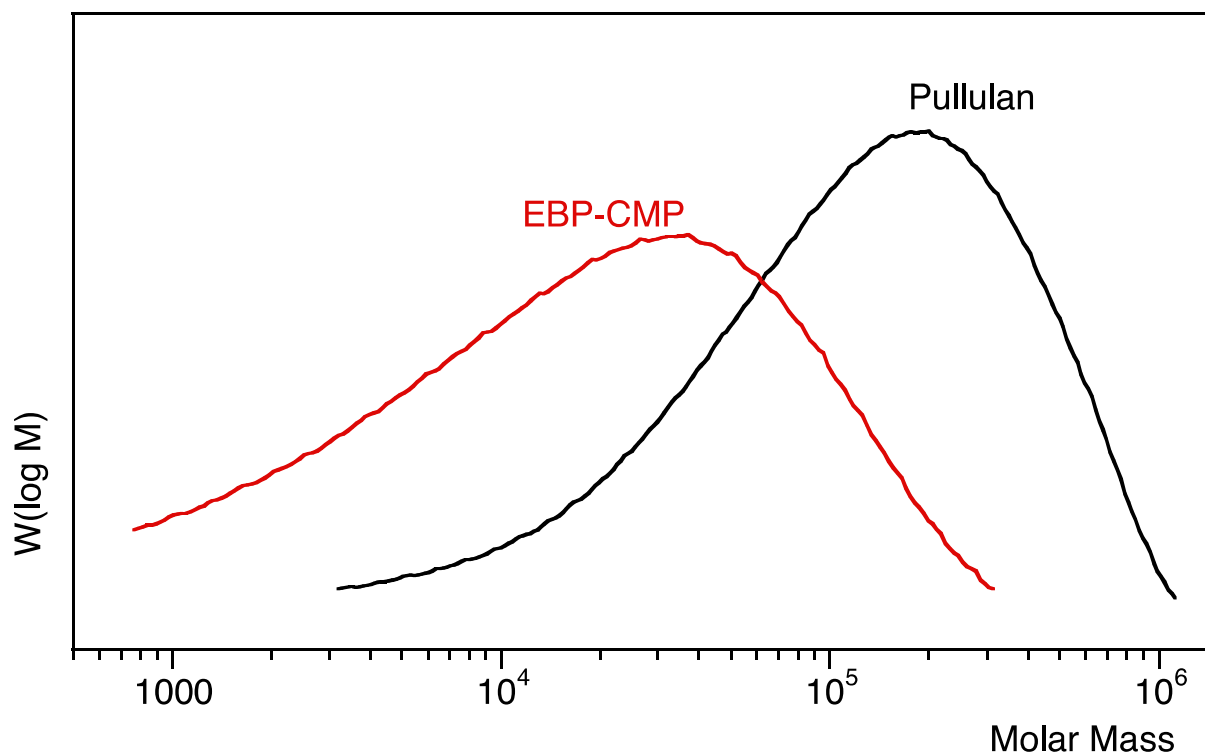


**Figure S1:** Confirmation of osteoblast cell type of isolated cells. The expression of alkaline phosphatase (ALP) was visualized using 5-bromo-4-chloro-3-indolyl-phosphate/nitro-blue-tetrazolium as the substrate (Sigma-Aldrich Co.). Mineralization of the extracellular matrix was detected using Alizarin Red-S (Sigma-Aldrich) after culturing the cells for four weeks.

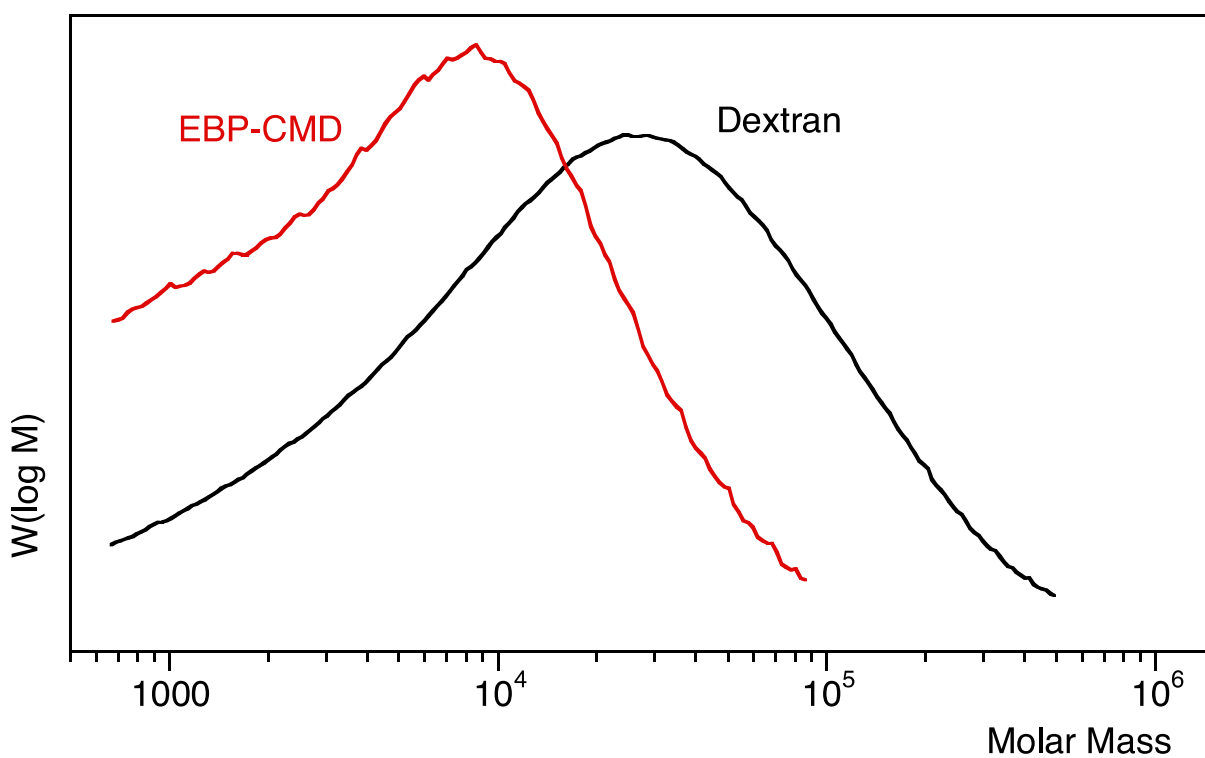
A: Staining of alkaline phosphatase. B: Mineralization / bone nodule staining with alizarin red.



**Figure S2:** Cryo SEM images after freeze drying in liquid nitrogen and water evaporation in high vacuum. **(A, B, C)** show cross sections of a crosslinked bulk hydrogel ( $ds(\text{benzophenone})=0.04$ ;  $ds(\text{carboxymethyl})=0.16$ ) in HEPES (10mM). **(C)** was recorded at another sample position than **(B)**. A hydrogel film on a silicon substrate after freeze drying and coated with gold is shown in **(D)**. The images were recorded with an acceleration voltage of 2 kV at a working distance of 5.2 mm.



**Figure S3:** GPC data were collected using a Suprema 3000 (300 x 8 mm) column in PBS (injection volume / flow rate, 20  $\mu$ L / 1 mL/min) with RI detector. GPC chromatogram of pullulan and EBP-CMP.



**Figure S4:** GPC chromatogram of dextran and EBP-CMD.

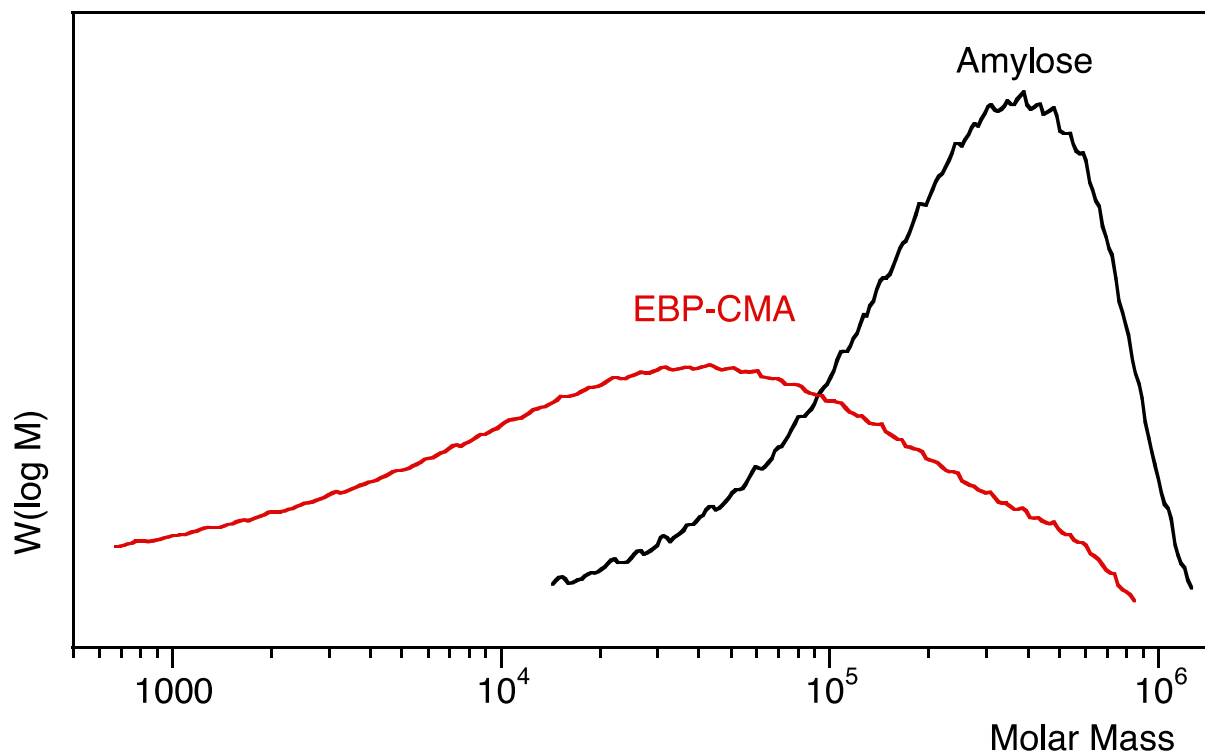


Figure S5: GPC chromatogram of amylose and EBP-CMA.