Supporting Information

Photocurable Albumin Methacryloyl Hydrogels as a Versatile Platform for Tissue Engineering

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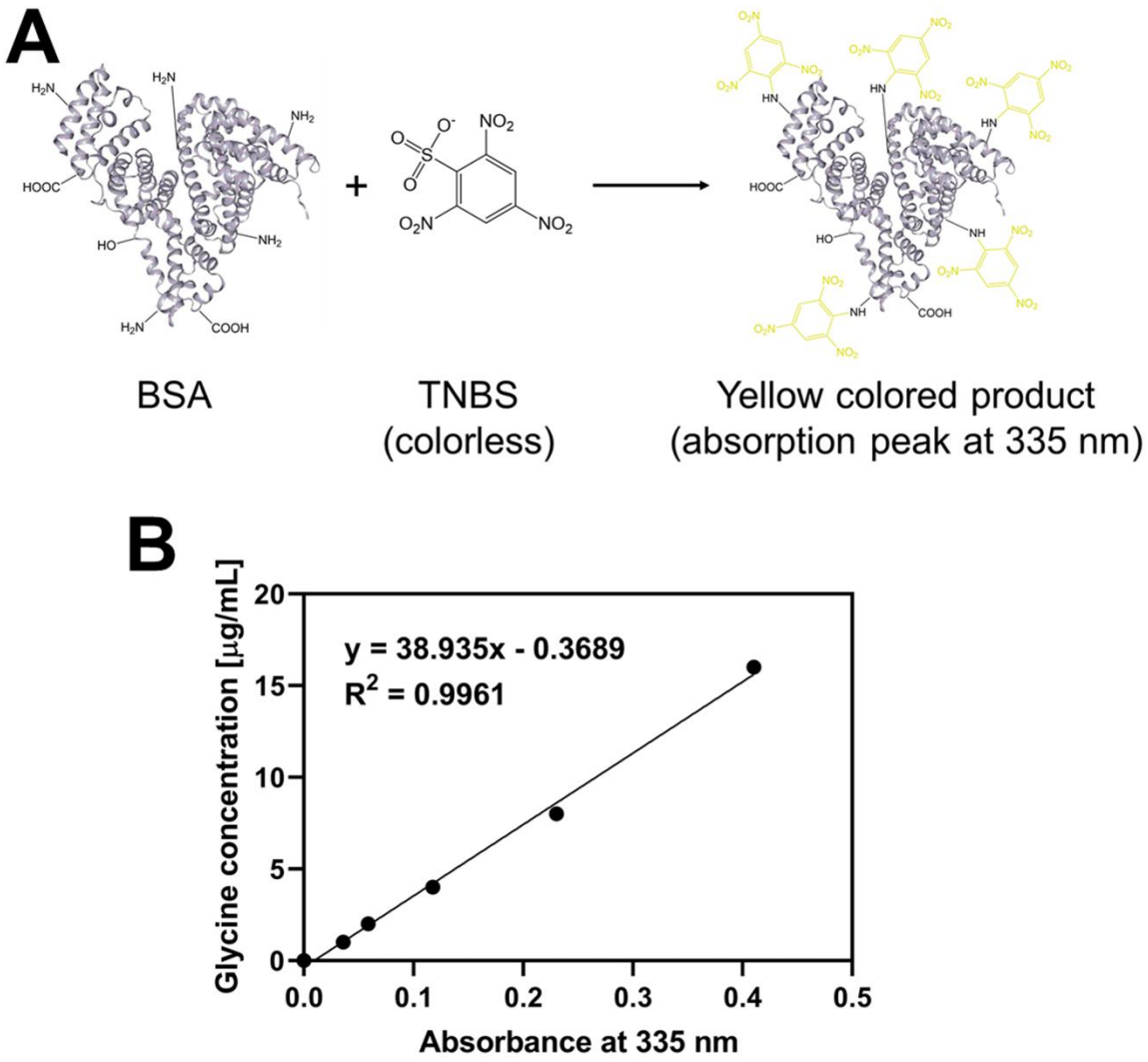

Figure S1. Evaluation of the degree of methacryloylation of BSA using TNBS assay. (A) Scheme of the reaction. TNBS reacts stoichiometrically with the free available primary amino groups of BSA, yielding a soluble yellow-colored product whose absorbance at 335 nm can be measured using a spectrophotometer. (B) The standard curve used to determine the molar concentration of the free primary amino groups. The curve was obtained using glycine solutions at 0, 1, 2, 4, 8 and 16 µg mL^{-1} prepared by serial dilutions.

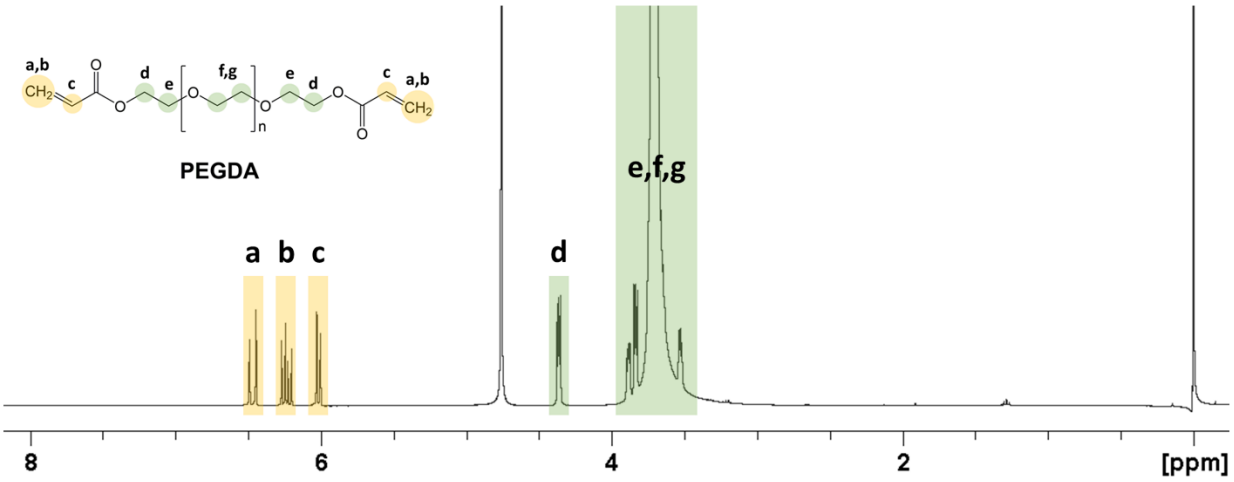

Figure S2. ^{1}H-NMR spectra of poly(ethylene glycol)diacrylate (PEGDA) in D_2O. Vinyl protons of the acrylate grafts (a, b, and c peaks between 5.9 and 6.5 ppm) and methylene protons of the PEG backbone (d, e, f, and g peaks between 3.5 and 4.3 ppm). The peak at 0 ppm corresponds to the internal standard TMSP. ^{1}H-NMR confirmed PEGDA formation. The degree of acryloylation of PEGDA (74.08%) was calculated from the integrals of the vinyl peaks and the PEG backbone peaks, according to the literature[1].

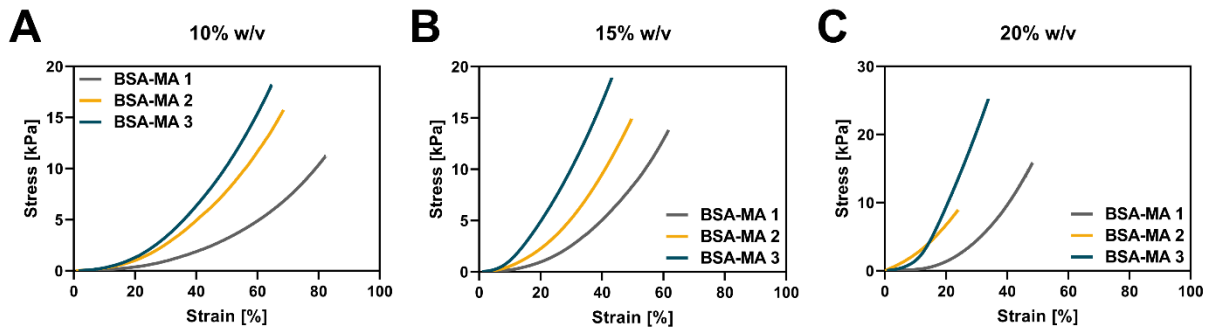

Figure S3. Representative stress-strain curves of BSA-MA 1, BSA-MA 2, and BSA-MA 3 hydrogels. (A) BSA-MA hydrogels at 10% w/v. **(B)** BSA-MA hydrogels at 15% w/v. **(C)** BSA-MA hydrogels at 20% w/v. The stress-strain curves slope is dependent on BSA-MA DM and mass concentration. A strain stiffening behavior, typical of crosslinked natural-polymer based hydrogels, is observable in all the BSA-MA hydrogels.

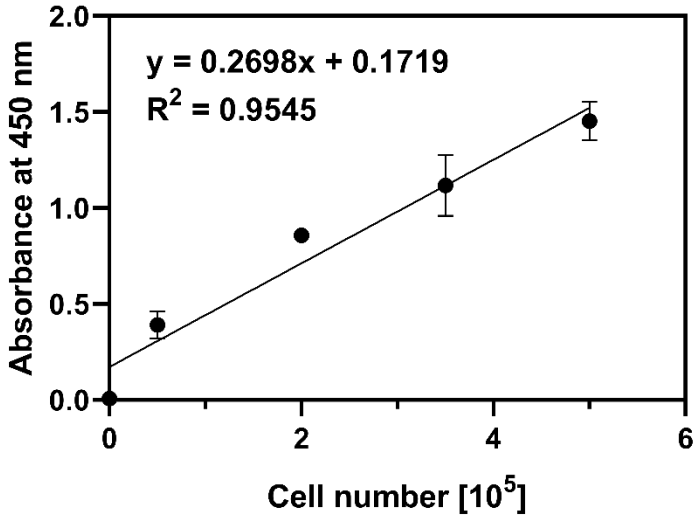

Figure S4. Calibration curve for CCK-8 assay measurements of cells cultured in 3D hydrogels. The cell number was plotted against the absorbance values read at 450 nm. Calibration curve was prepared for 3D cell culture in BSA-MA 3 hydrogels at 15% w/v. Data are reported as mean ± SD (n = 2).

REFERENCES

1. Lim, W. S.; Chen, K.; Chong, T. W.; Xiong, G. M.; Birch, W. R.; Pan, J.; Lee, B. H.; Er, P. S.; Salvekar, A. V.; Venkatraman, S. S., A bilayer swellable drug-eluting ureteric stent: Localized drug delivery to treat urothelial diseases. *Biomaterials* **2018,** 165, 25-38.