

**Supporting Information**

**Tuning the Properties of Injectable Poly(Oligoethylene Glycol Methacrylate) Hydrogels by Controlling Precursor Polymer Molecular Weight**

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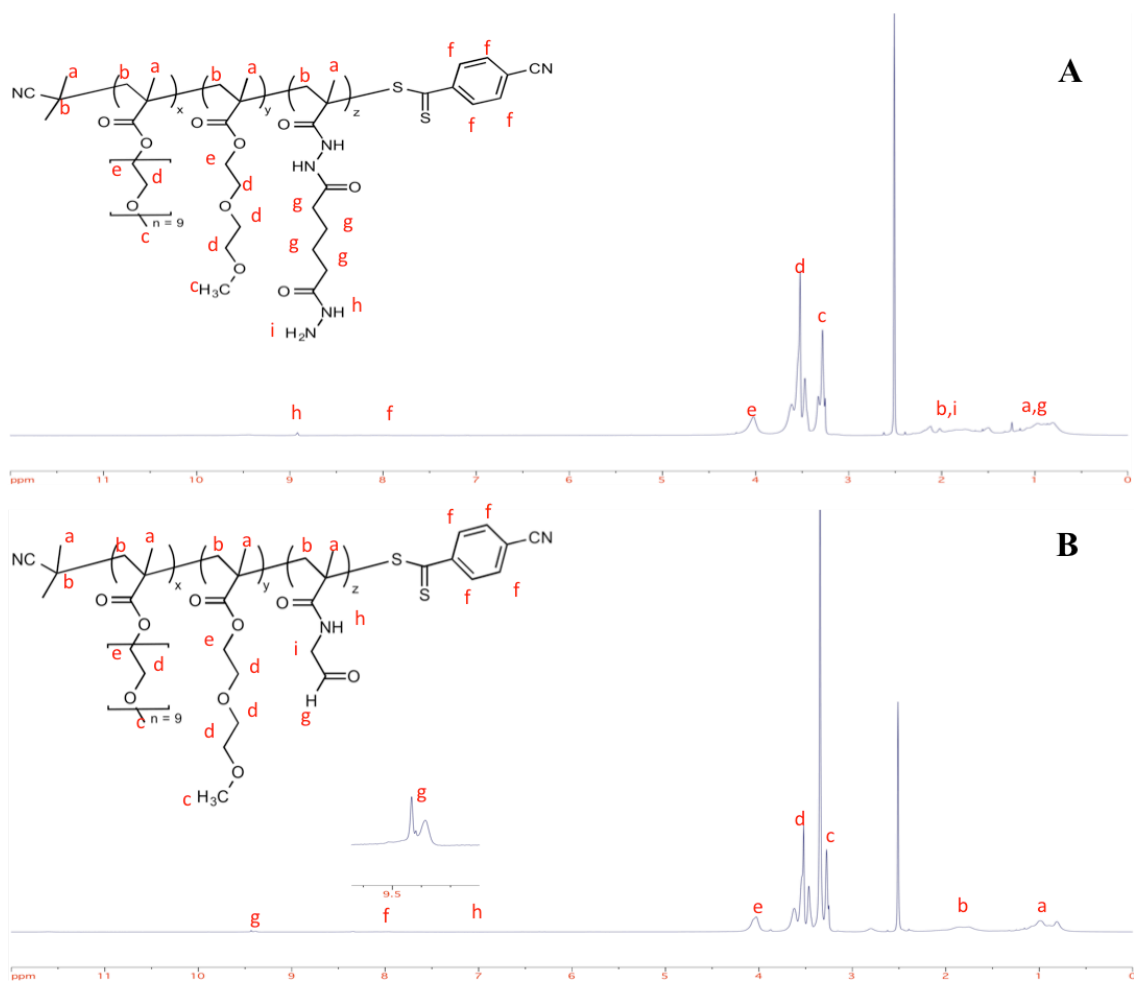
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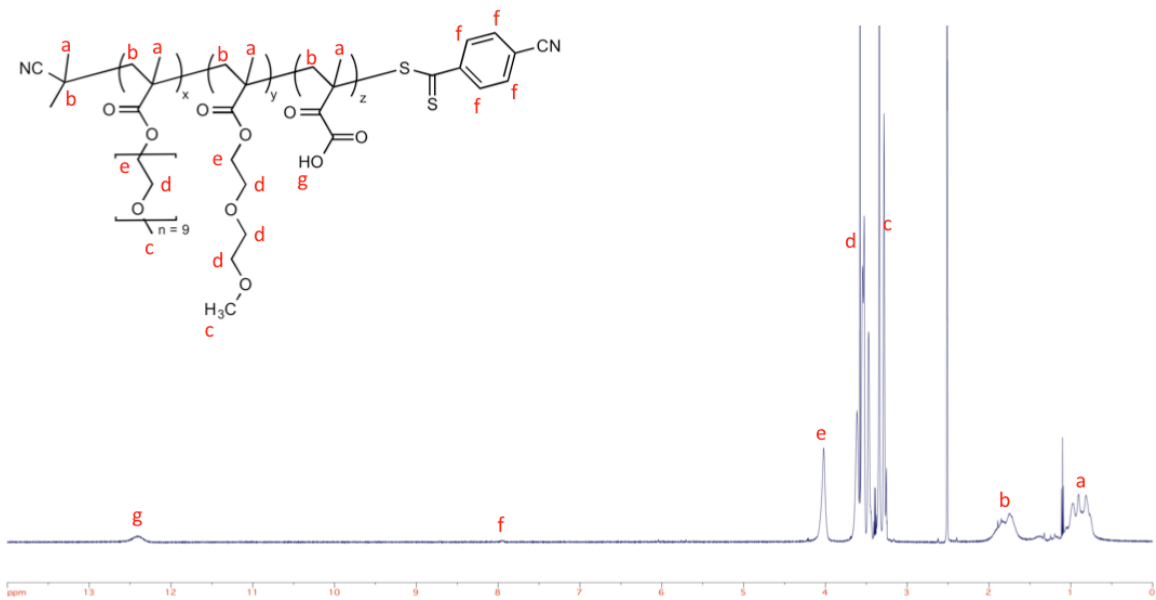
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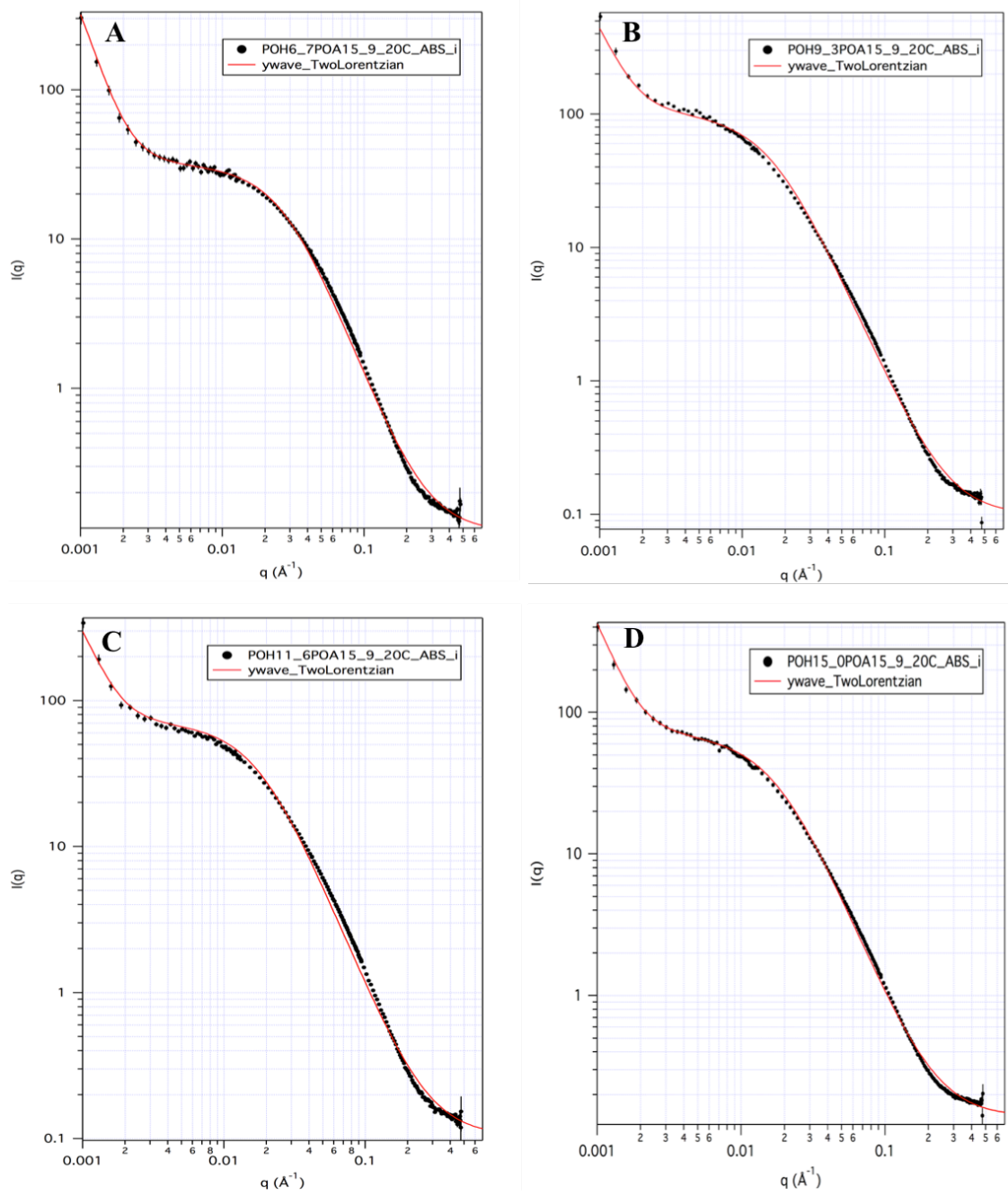
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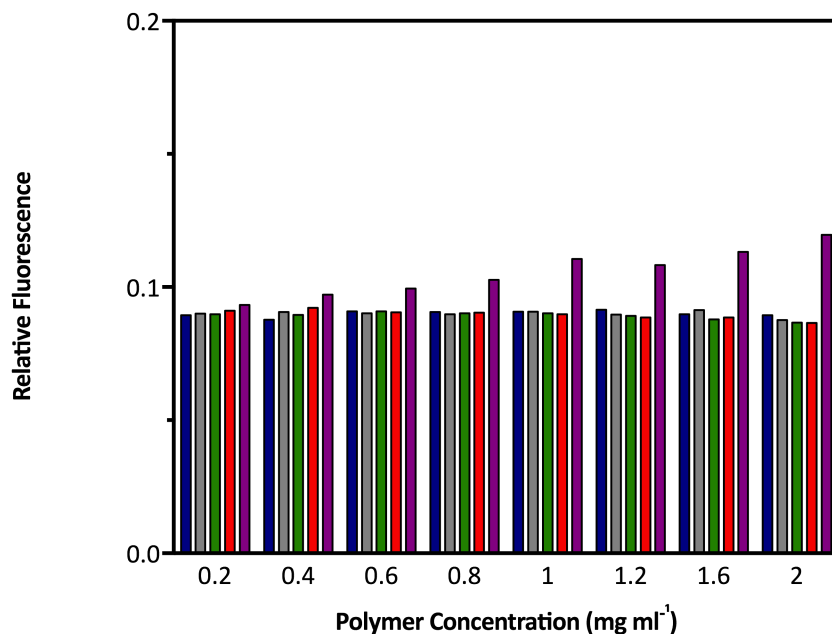
**Figure S1.**  $^1\text{H}$  NMR of POH<sub>15.9</sub> (A) and POA<sub>15.0</sub> (B) in DMSO at 600 MHz.



**Figure S2.**  $^1\text{H}$  NMR of unfunctionalized POEGMA-co-MAA in DMSO at 600 MHz.



**Figure S3.** Scattering intensities as a function of  $q$  for POH<sub>6.7</sub>/POA<sub>15.9</sub> (A), POH<sub>9.3</sub>/POA<sub>15.9</sub> (B), POH<sub>11.6</sub>/POA<sub>15.9</sub> (C), and POH<sub>15.0</sub>/POA<sub>15.9</sub> (D) at 20 °C. The Ornstein-Zernike (OZ) – squared Lorentzian (SL) fits of the scattering intensities are shown as red solid lines, while the raw SANS data is shown as black points.



**Figure S4.** Fluorescence readings of wells containing resazurin (10  $\mu\text{g/ml}$ ) + DMEM + one of: POH<sub>6.7</sub> (blue), POH<sub>9.3</sub> (grey), POH<sub>11.6</sub> (green), POH<sub>15.9</sub> (red) and POA<sub>15.0</sub> (purple) at concentrations ranging from 0.2 – 2  $\text{mg ml}^{-1}$  as a proportion of the fluorescence readings from control wells containing only cells, DMEM, and resazurin.