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Supplementary Information

for

Ureido-Cytosine and Cytosine Containing Acrylic Copolymers

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Figure S1. ¹H NMR and ¹³C NMR spectra of cytosine acrylate.



Chemical shift (ppm)



Figure S2. ¹H NMR and ¹³C NMR spectra of ureido cytosine acrylate.



Chemical Shift (ppm)

Figure S3. ¹H NMR spectrum of (A) poly(CyA-co-nBA) and (B) poly(UCyA-co-nBA) copolymers in a mixture of CDCl₃ and DMSO-d₆.

Specific viscosity of the reaction mixture during post-functionalization was measured on TA instrument Discovery AR-G2 rheometer, using a concentric cylinder geometry with a required liquid volume of 8 mL. The cup and spindle were enclosed with a metal cover to minimize solvent evaporation. Cytosine copolymer solution was mixed with diluted isocyanate and added to the cup, which was maintained at 25 °C. The solution was subjected to a steady shear at 10 Hz over 5 h.



Figure S4. *In situ* specific viscosity measurement of post-functionalization reaction for and 3 wt% solution of poly(CyA-*co-n*BA) in DCM with isocyanates.

Isothermal rheological analyses of cytosine copolymers were conducted on TA Instruments Discovery AR-G2 rheometer, using disposable aluminum parallel plates of 25 mm in diameter. All measurements were strain-controlled at constant nominal strain values within the linear viscoelastic region, as determined using strain sweep experiments. Dynamic oscillatory temperature sweep experiments were performed at temperature steps from -40 °C to 150 °C with a 3 °C interval at 1 Hz. Sample was equilibrated for 1 min at each temperature.



Figure S5. Isothermal rheological time sweep of poly(CyA-*co-n*BA) with 5 mol% CyA at 130 and 150 °C in air.



Figure S6. Isothermal rheological time sweep of poly(UCyA-*co-n*BA) with 9 mol% UCyA at 130 and 150 °C in air.



Figure S7. DSC thermograms of poly(CyA-*co*-*n*BA)s and poly(CyA).



Figure S8. DSC thermograms of poly(UCyA-*co-n*BA)s.





Figure S9. Variable temperature FT-IR spectra of (a) poly(CyA-*co-n*BA) and (b) poly(UCyA-*co-n*BA) with 5 mol% CyA and UCyA in the 1800-1400 cm⁻¹ region at varying temperatures. Spectra were shifted vertically for visual clarity.