

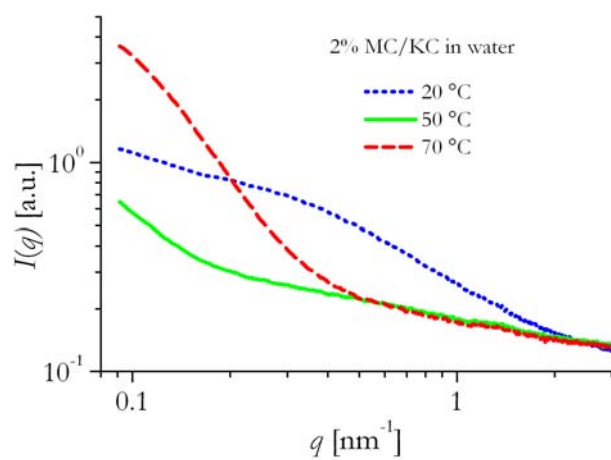


Figure SI1. “Log-log” representation of Figure 2b – experimental SAXS results for 2 % MC/KC (1:1) in water.

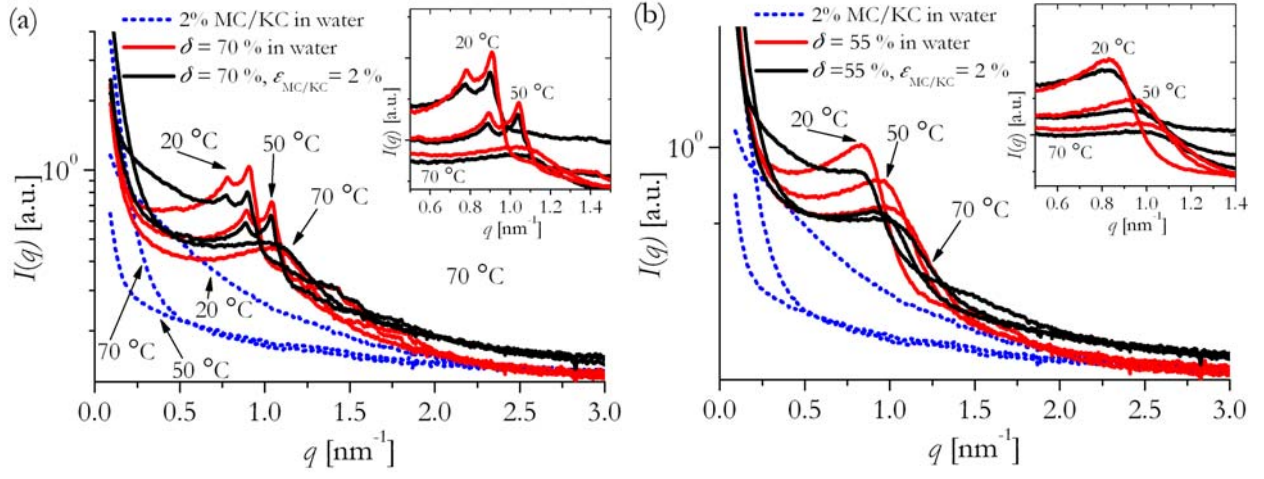


Figure SI2. Experimental SAXS results for DU/tetradecane/F127/MC-KC(1:1)/water thermo-gelling ISAsome systems with $\beta = 8.1\%$, $\varepsilon = 2\%$, approximately 5 % of the dispersed phase, and (a) $\delta = 70\%$ – discontinuous cubic FD3Ms, and (b) $\delta = 55\%$ – EMEs. Insets: Zoom-in of the experimental SAXS intensities – ISAsome-loaded SAXS curves are corrected for the background scattering of 2 % MC-KC (1:1) in water. These systems are soft hydrogels at 20 °C, sols at around 50 °C, and soft hydrogels at 70 °C again.

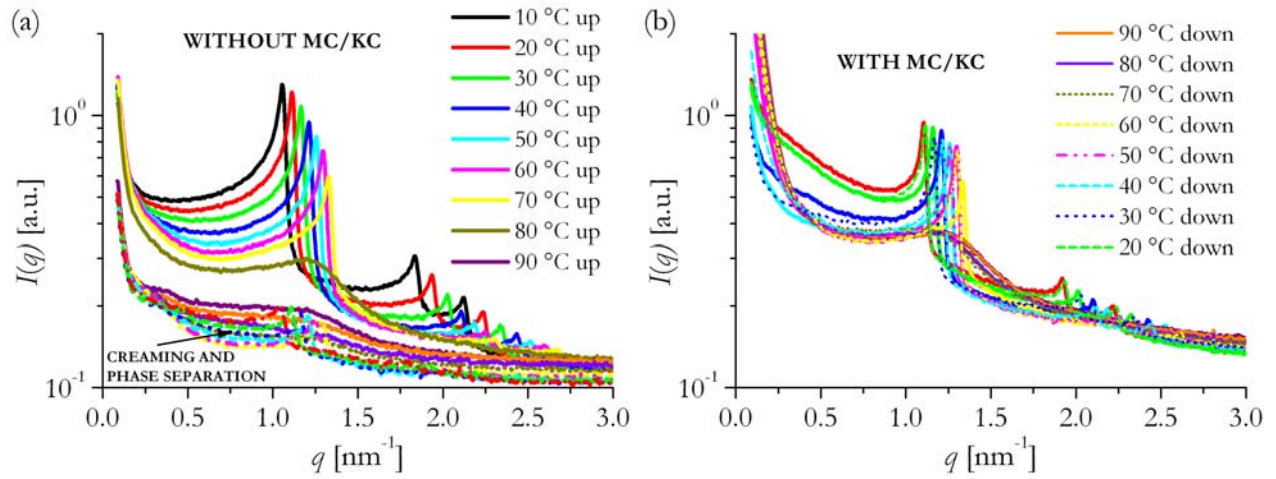


Figure SI3. Experimental SAXS results for (a) DU/tetradecane/F127/water system (step-wise 10-90-10 °C temperature scan) and (b) DU/tetradecane/F127/MC-KC(1:1)/water thermo-gelling hexosome systems (step-wise 20-90-20 °C temperature scan) with $\beta = 8.1\%$, approximately 5 % of the dispersed phase, $\delta = 85\%$ – hexosomes, and $\varepsilon = 2\%$. The two legends are common to the whole figure and indicate the steps of the upward and downward scans. Plain ISAsomes samples show the phase separation due to creaming at higher temperatures (lower set of curves in Figure SI2a representing a downward scan). High temperature stabilizing effect of the MC-KC (1:1) polymer mixture on the ISAsomes is clearly evidenced from the downward scan in Figure SI2b.

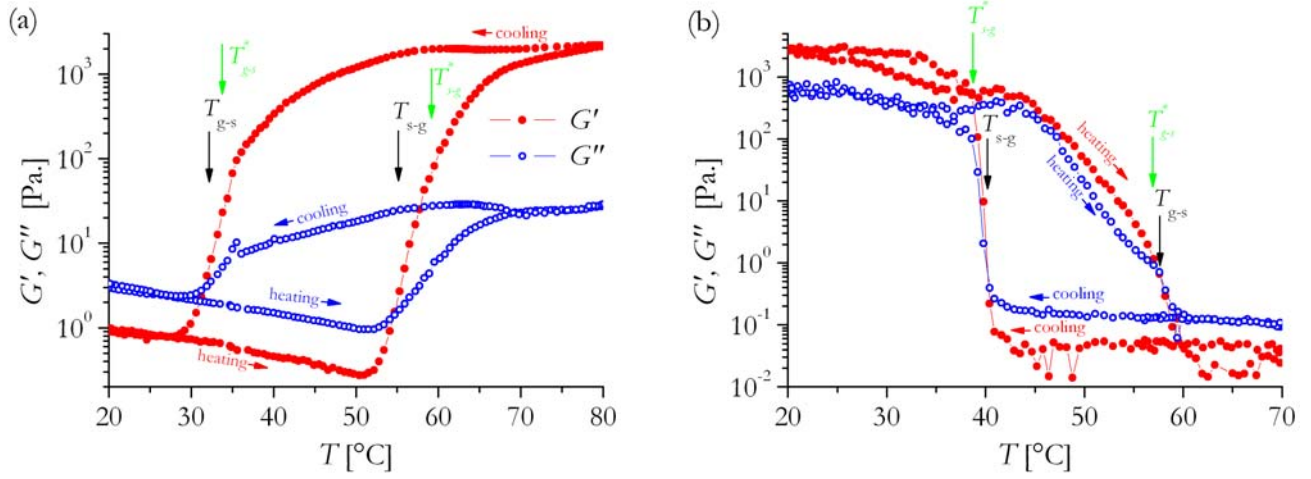


Figure SI4. The heating/cooling cycle results of an oscillatory rheological experiment with hexosome-loaded MC and KC samples (hexosomes from Figure 1a) with (a) $\varepsilon_{MC} = 2 \%$, and (b) $\varepsilon_{KC} = 2 \%$. Storage modulus (full red symbols) and loss modulus (open blue symbols). Vertical arrows indicate the transition temperatures of loaded (black) and corresponding non-loaded samples (green).

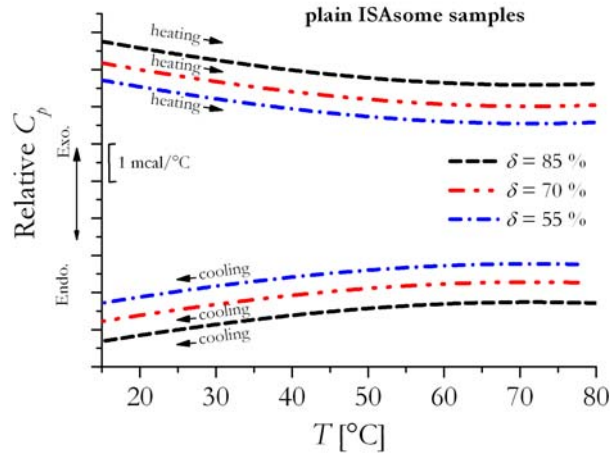


Figure SI5. Calorimetric thermograms of plain ISAsome samples with $\delta = 85, 70$, and 55% . The curves are shifted in y direction for the sake of clarity.

Table SI1. Gel-sol T_{g-s} and sol-gel T_{s-g} transition temperatures according to the rheological results for ISAsome-loaded KC, MC and MC/KC (1:1) water solutions. The two gel-sol-gel transition

temperatures T_{g-s-g} are marked with * and ** in the heating and cooling direction, respectively. The values in parentheses represent the error on the last given decimal place.

RHEOLOGY	T_{g-s} [°C]	T_{s-g} [°C]
1 % KC	46.1(5)	30.8(5)
2 % KC	57.7(5)	40.2(5)
1 % MC	33.8(5)	58.3(5)
2 % MC	32.2(5)	55.2(5)
2 % MC/KC (1:1)	48.8(5) - 54.9(5)*	33.1(5)**

Table SI2. Gel–sol T_{g-s} and sol–gel T_{s-g} transition temperatures according to the DSC results for ISAsome-loaded KC, MC and MC/KC (1:1) water solutions. The two gel-sol-gel transition temperatures T_{g-s-g} are marked with * and ** in the heating and cooling direction, respectively. The values in parentheses represent the error on the last given decimal place.

DSC	T_{g-s} [°C]	T_{s-g} [°C]
1 % KC	42.4(3)	28.5(3)
1 % MC	-	63.7(3)
2 % MC/KC (1:1)	49.7(3)*	30.4(3)**