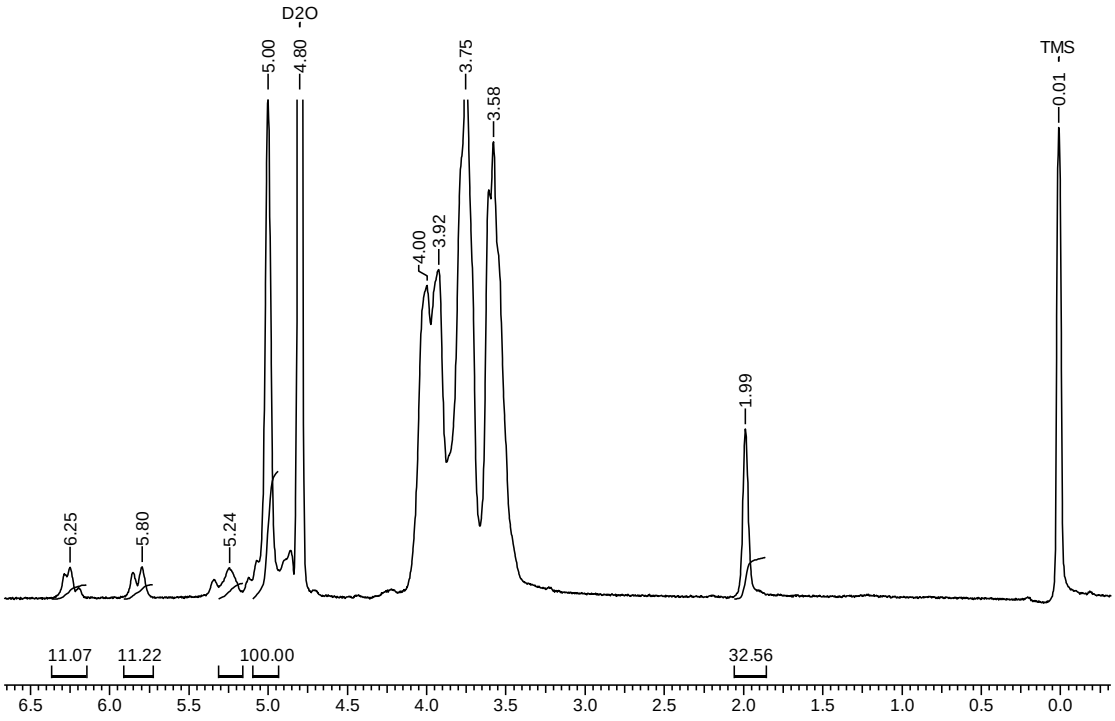

Figure S1: ^{1}H NMR spectra of Dextran Methacrylate (DS = 10%).

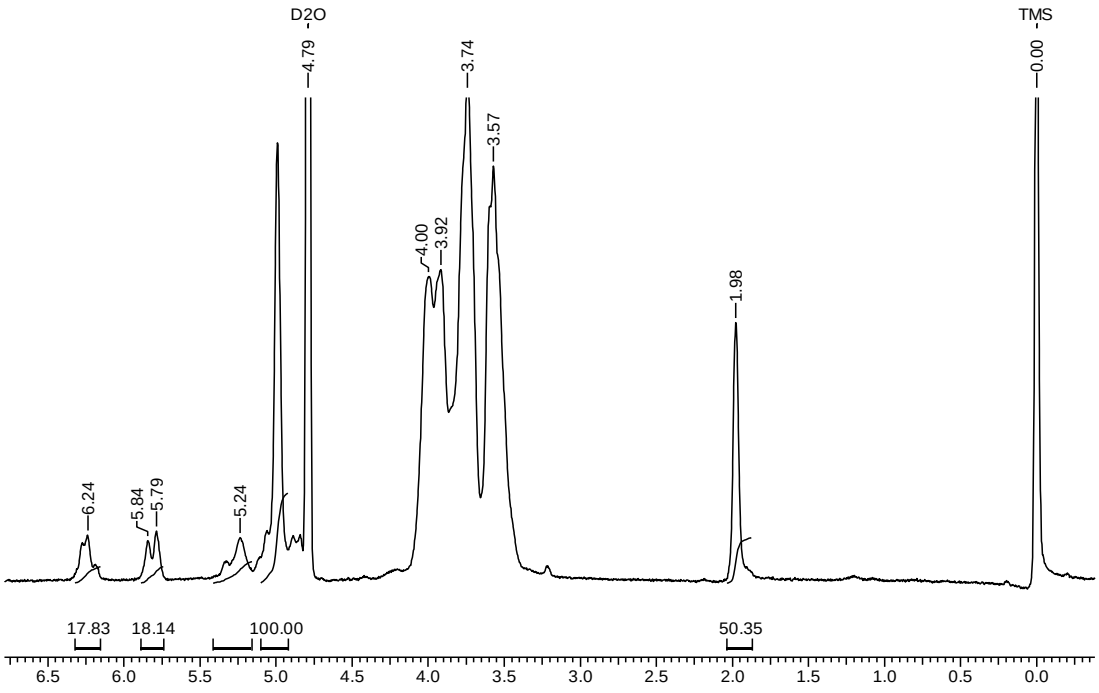

Figure S2: ^{1}H NMR spectra of Dextran Methacrylate (DS = 20%).

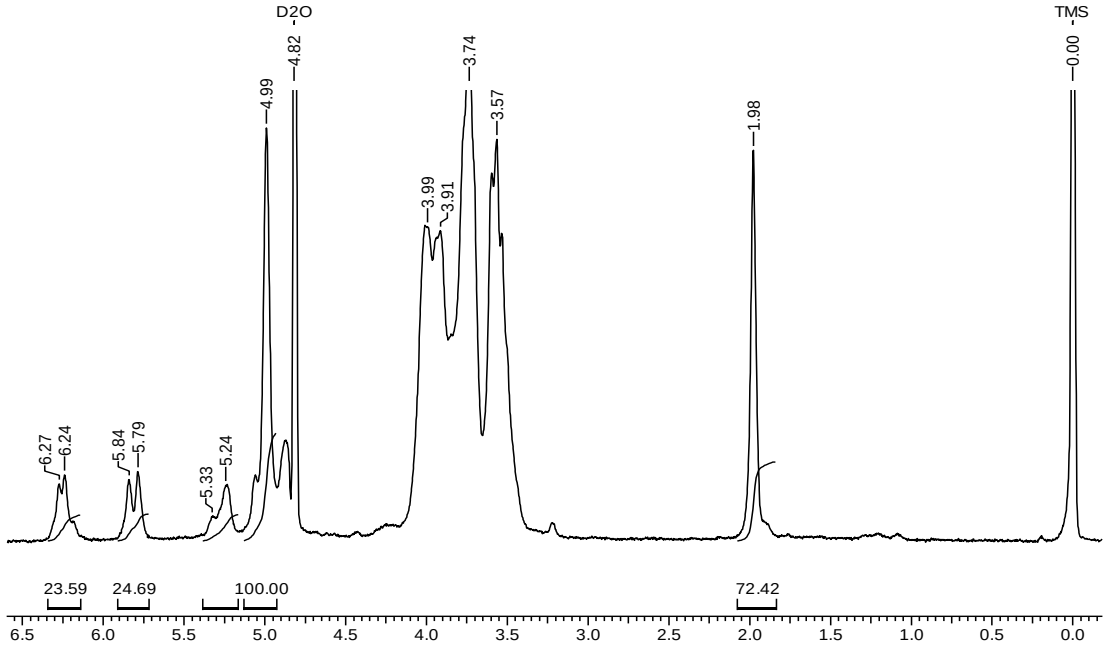

Figure S3: ^{1}H NMR spectra of Dextran Methacrylate (DS = 25%).

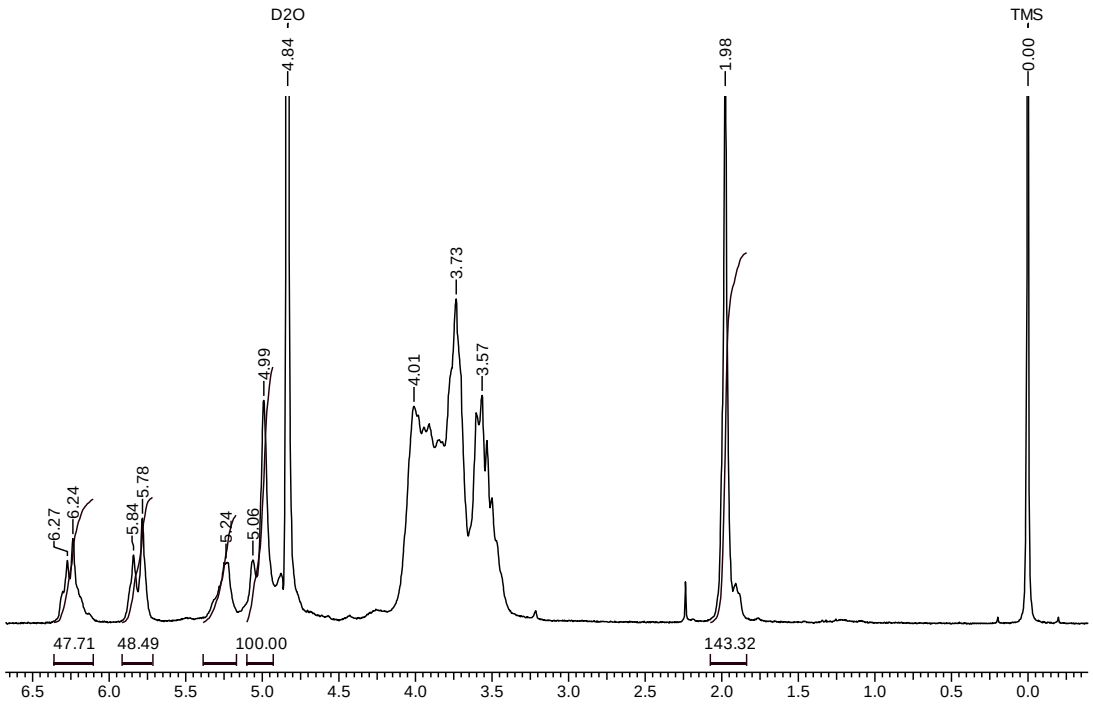

Figure S4: ^{1}H NMR spectra of Dextran Methacrylate (DS = 50%).

$$DS\ (\%) = \frac{I_{vinyl}}{I_{anomeric}} \times 100$$

where, I_{vinyl} is the integration of the proton peak assigned to acrylate vinyl proton (δ = 6.24 ppm) and $I_{anomeric}$ is the integration of –CH (δ = 5.00 ppm) anomeric proton peak of the dextran repeating unit.

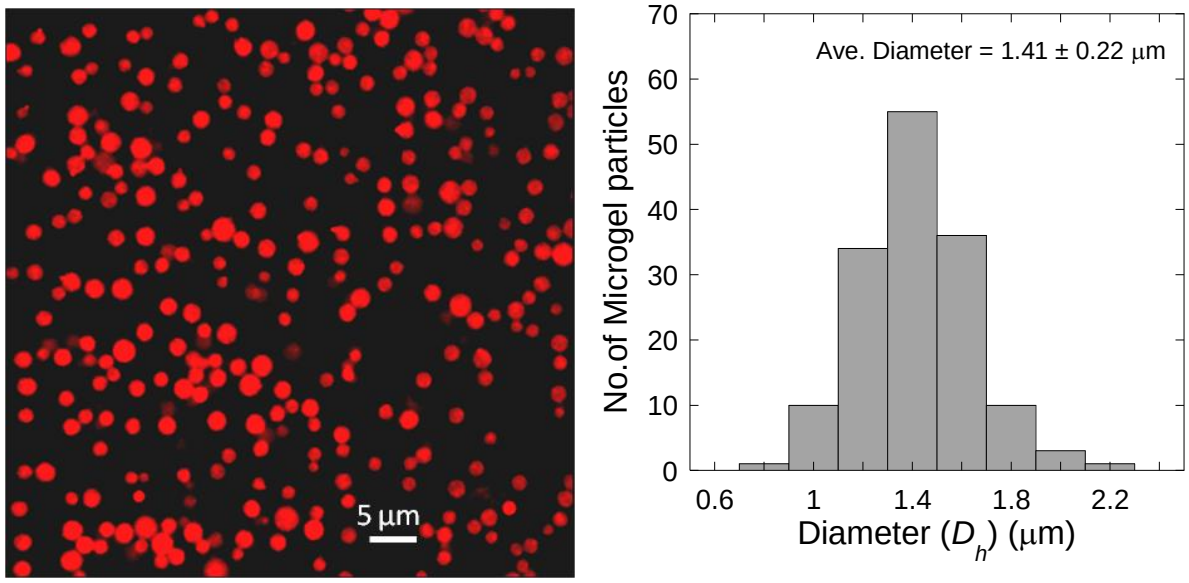

Figure S5: CLSM image and size distribution of DexM20 (DS 18%).

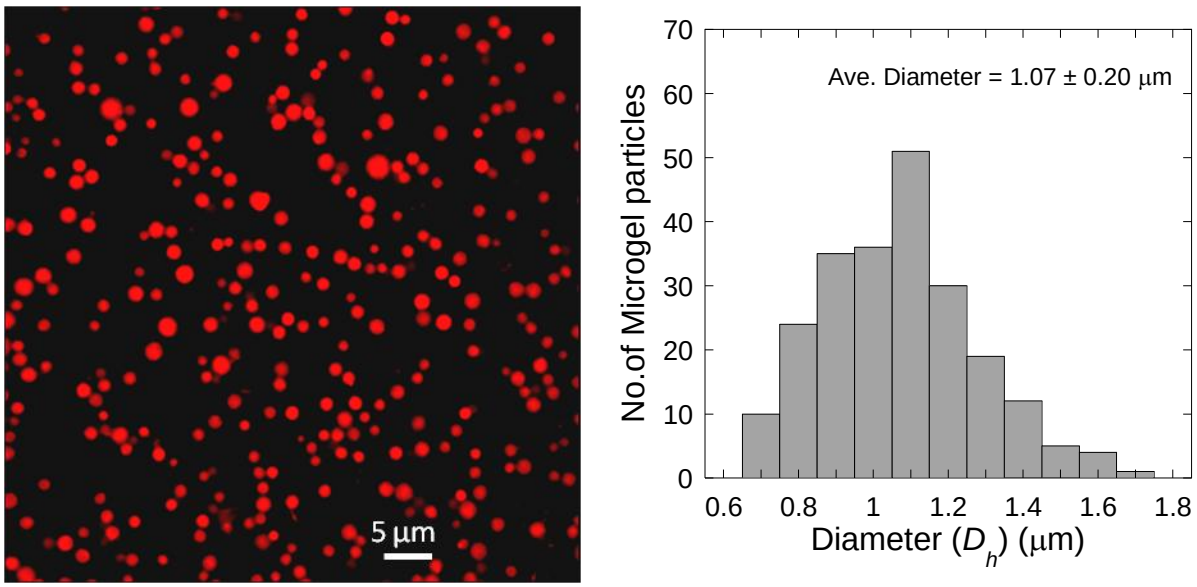

Figure S6: CLSM image and size distribution of DexM25 (DS 25%).

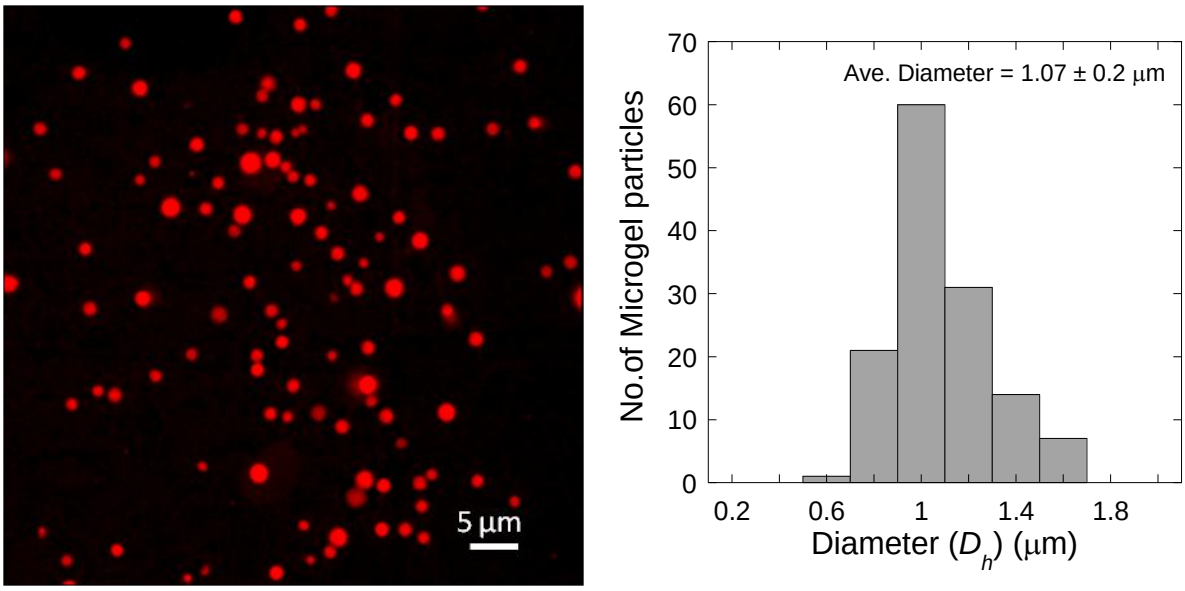

Figure S7: CLSM image and size distribution of DexM50 (DS 48%).

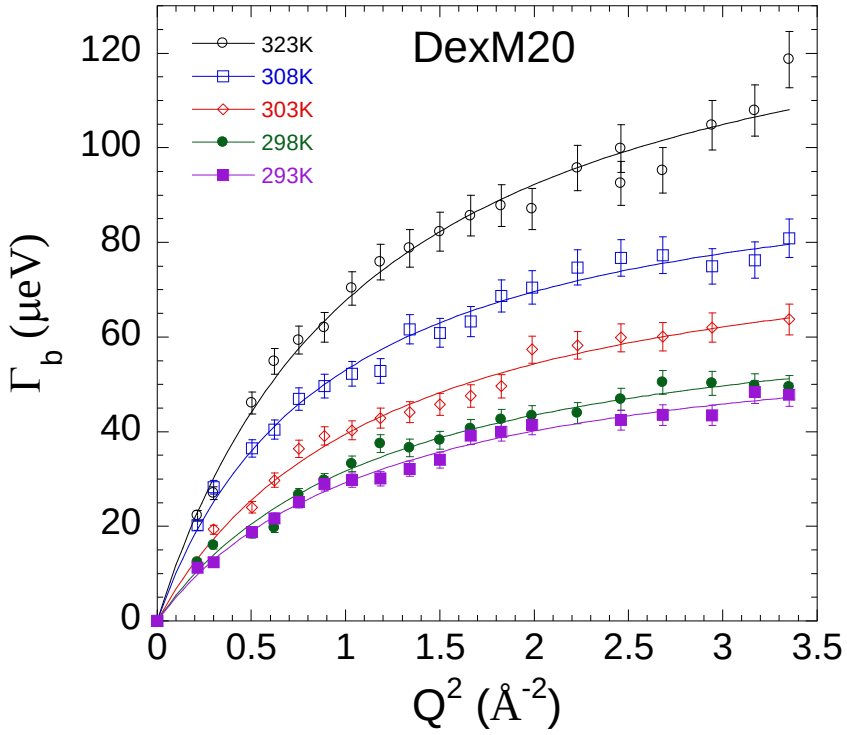

Figure S8: Q-dependence of the line broadening Γ_b of the Lorentzian, L_b, describing the diffusion of "slow" water molecules in the dextran based microgels DexM20 from 293 to 323 K.

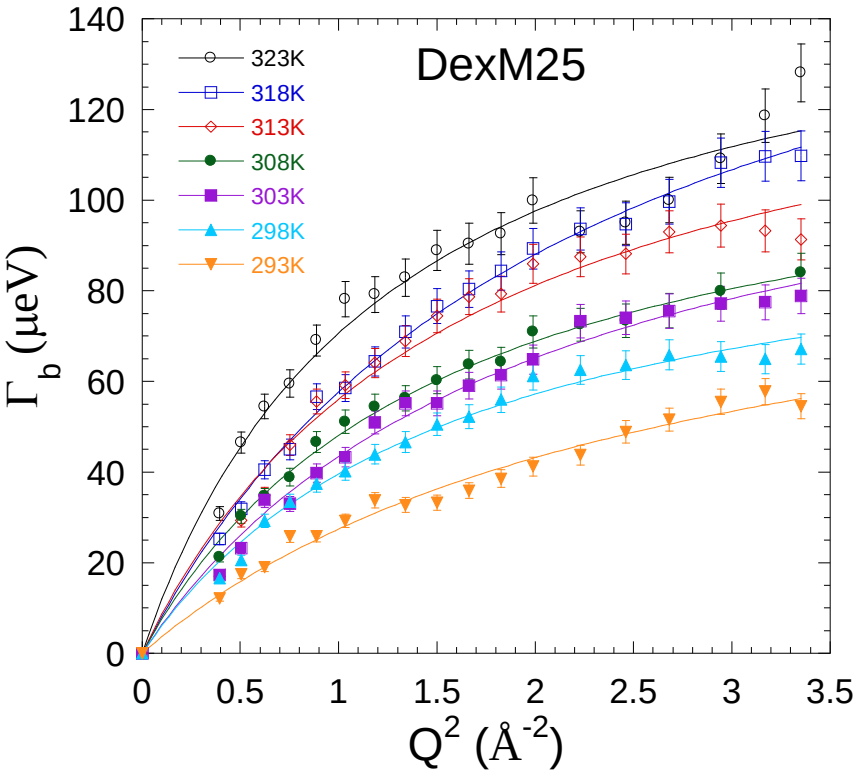

Figure S9: Q-dependence of the line broadening Γ_b of the Lorentzian, L_b, describing the diffusion of "slow" water molecules in the dextran based microgels DexM25 from 293 to 323 K.

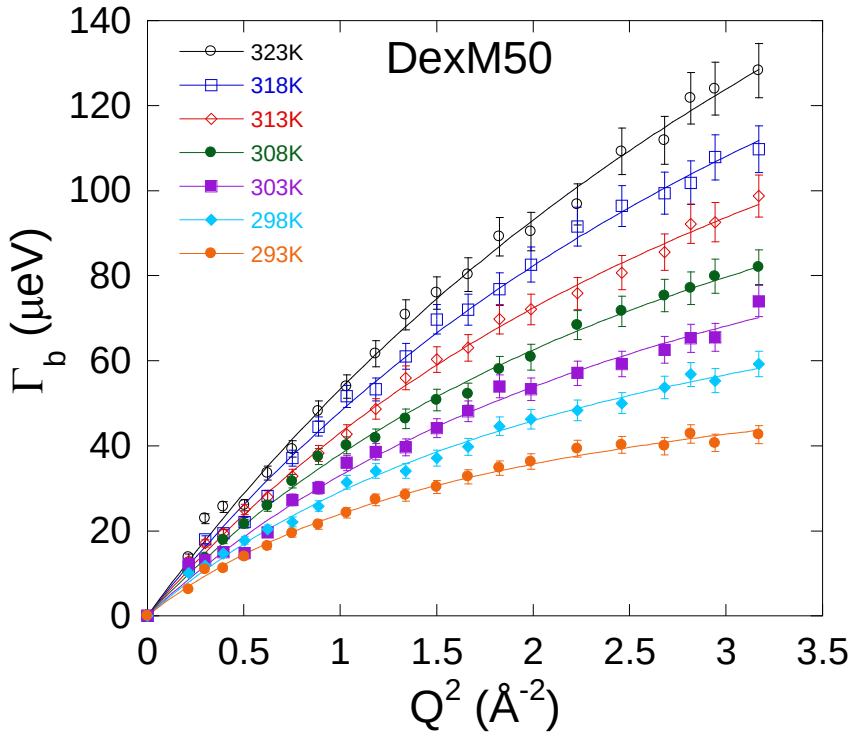

Figure S10: Q-dependence of the line broadening Γ_b of the Lorentzian, L_b, describing the diffusion of "slow" water molecules in the dextran based microgels DexM50 from 293 to 323 K.

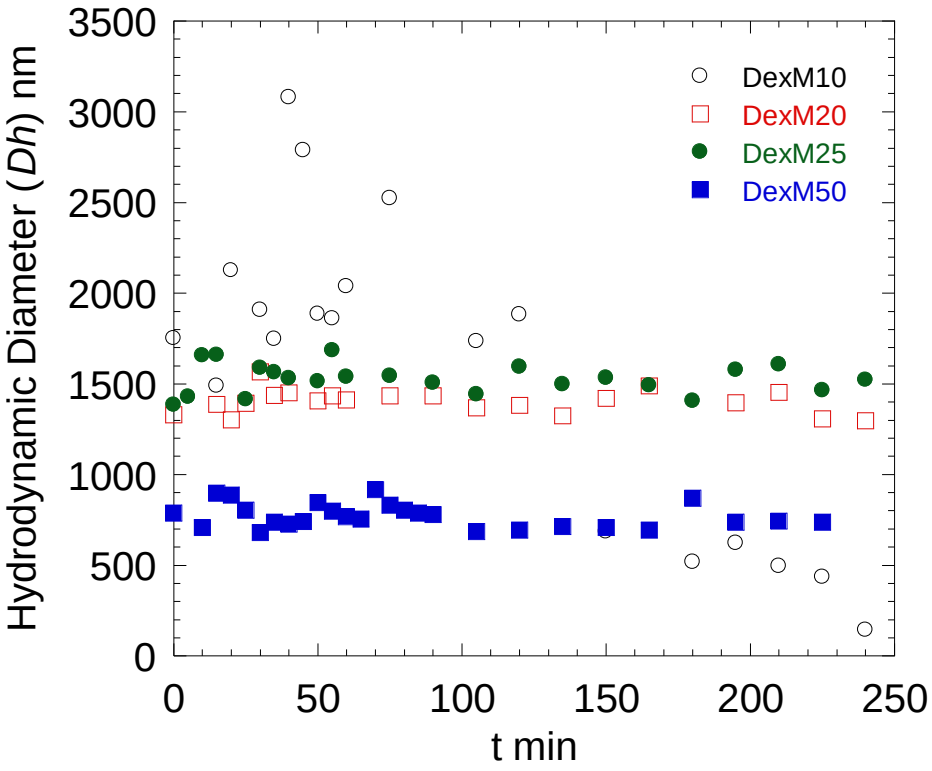

Figure S11: Microgel enzymatic degradation monitored by dynamic light scattering of DexM10 (○), DexM20 (□), DexM25 (●) and DexM50 (■).