Supporting Information

Modulating the Solubility of Zwitterionic Poly(3-methacrylamidopropyl)-ammonioalkane sulfonate)s in Water and Aqueous Salt Solutions via the Spacer Group Separating the Cationic and the Anionic Moieties

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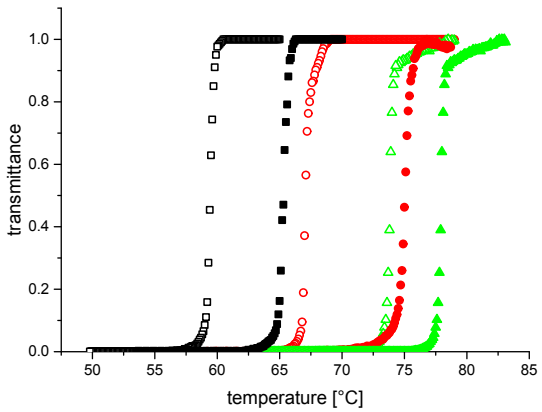

Figure S1. Temperature dependent turbidity of 5 wt% aqueous solutions of **polySBP$_n$** in H_2O (cooling cycles): (□) = **polySBP$_{40}$**, (○) = **polySBP$_{50}$**, (❐) = **polySBP$_{80}$**; and in D_2O: (■) = **polySBP$_{40}$**, (●) = **polySBP$_{50}$**, (▲) = **polySBP$_{80}$**.

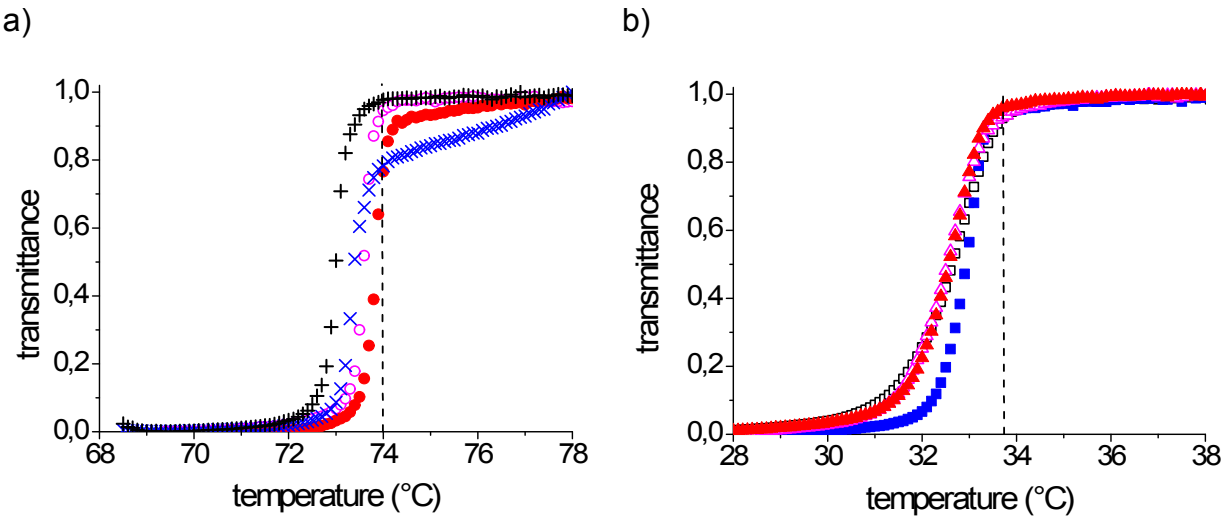

Figure S2. Reproducibility of turbidimetric studies. (a) **polySBP$_{80}$** in 5 wt% aqueous solutions (H_2O): (✚) = 1st heating, (**x**) = 1st cooling, (ᔓ) = 2nd heating, (ᔕ) = 2nd cooling. (b) **polySHPP$_{505}$** in 5 wt% aqueous solutions (H_2O): (●) = 1st heating, (○) = 1st cooling, (❒) = 2nd heating, (❒) = 2nd cooling.

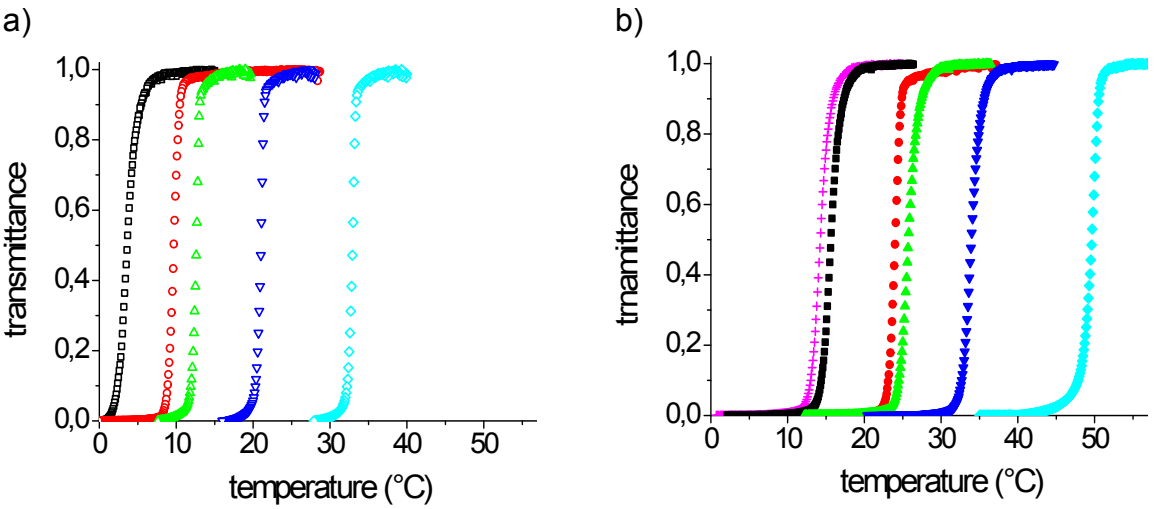

Figure S3. Temperature dependent turbidity (cooling cycles) of 5 wt% aqueous solutions of **polySHPP$_m$**. (a) in H_2O: (□) = **polySHPP$_{80}$**, (○) = **polySHPP$_{115}$**, (❒) = **polySHPP$_{235}$**, (♦) = **polySHPP$_{460}$**, (◊) = **polySHPP$_{505}$**; and (b) in D_2O: (+) = **polySHPP$_{70}$**, (■) = **polySHPP$_{80}$**, (●) = **polySHPP$_{115}$**, (▲) = **polySHPP$_{235}$**, (▼) = **polySHPP$_{460}$**, (♦) = **polySHPP$_{505}$**. The cloud point of **polySHPP$_{70}$** in H_2O is below 0 °C.

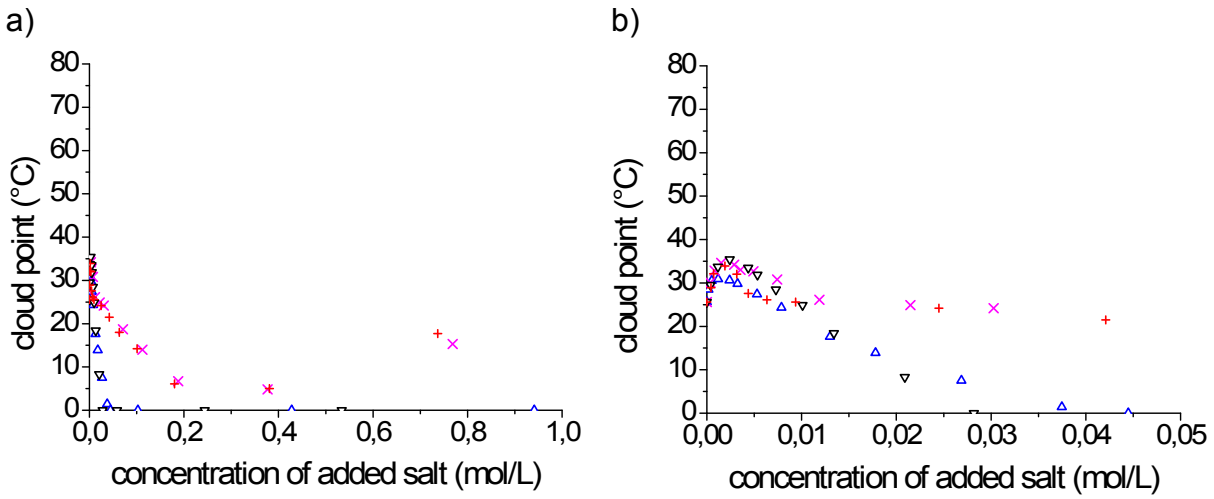

Figure S4. (a) Evolution of the cloud points of **polySPP$_{500}$** in 5 wt% aqueous solutions (H_2O) containing inorganic salts: (❐) = NaCl, (♦) = NaBr, (+) = Na_2SO_4, (×) = $(NH_4)_2SO_4$. (b) Zoom-in showing the maxima of the cloud points with increasing amounts of salts added.

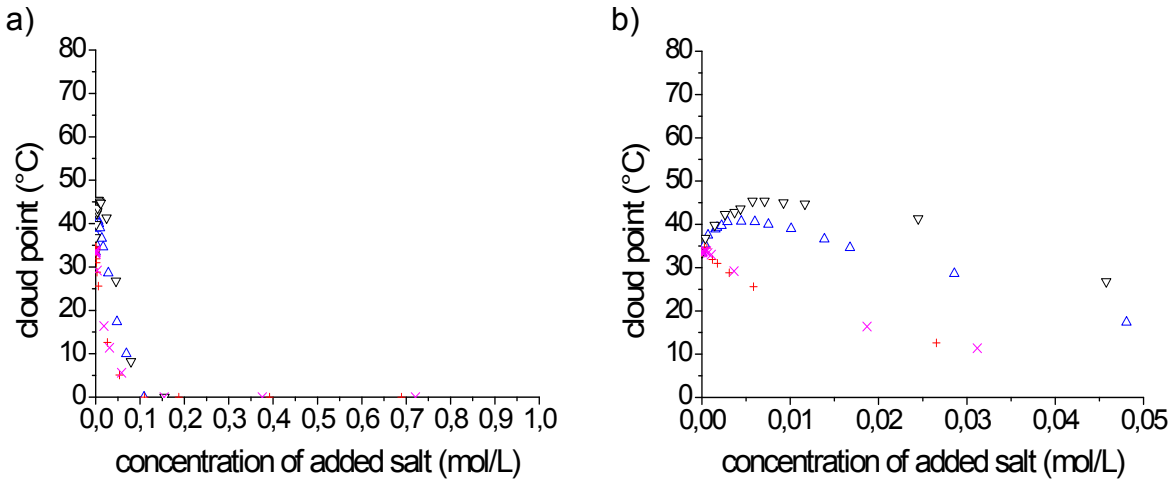

Figure S5. (a) Evolution of the cloud points of **polySHPP$_{505}$** in 5 wt% aqueous solutions (H_2O) containing inorganic salts: (❐) = NaCl, (♦) = NaBr, (+) = Na_2SO_4, (×) = $(NH_4)_2SO_4$. (b) Zoom-in showing the maxima of the cloud points with increasing amounts of salts added.

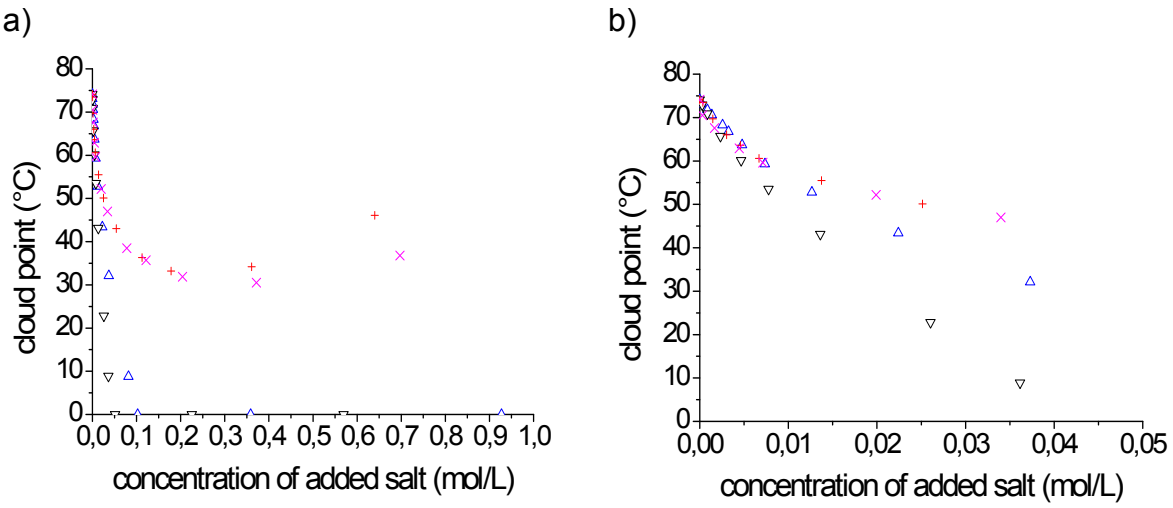

Figure S6. (a) Evolution of the cloud points of **polySBP$_{80}$** in 5 wt% aqueous solutions (H_2O) containing inorganic salts: (❒) = NaCl, (♦) = NaBr, (🔥) = Na_2SO_4, (×) = $(NH_4)_2SO_4$. (b) Zoom-in showing low concentration of added salts.

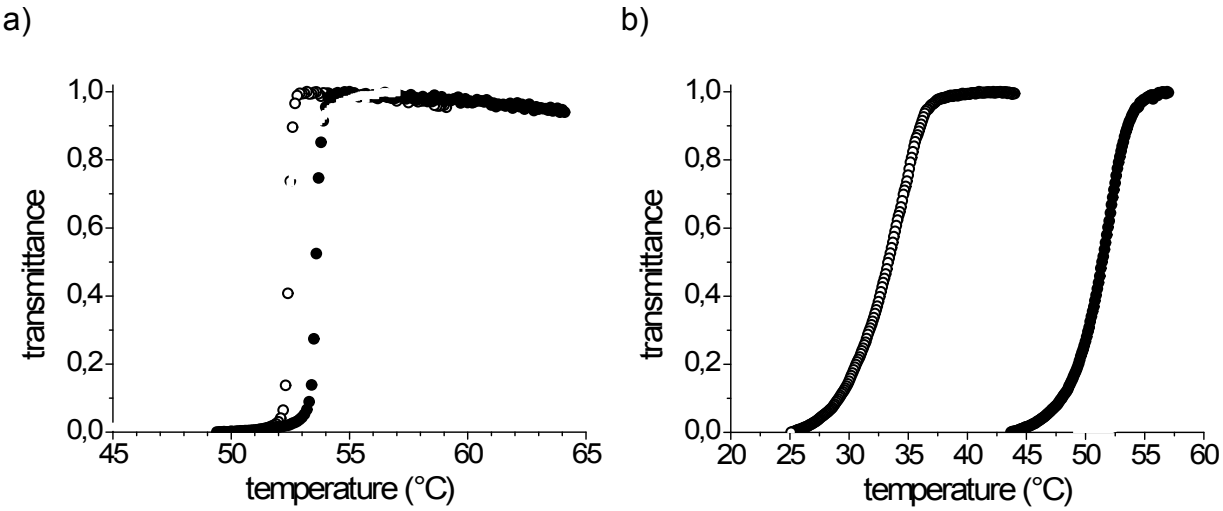

Figure S7. H-D isotope effects in the temperature dependent turbidity (cooling cycles) of 5 wt% aqueous solutions of (a) **polySBP$_{80}$** with 0.012 mol·L^{-1} NaCl, and of (b) **polySHPP$_{505}$** with 0.014 mol·L^{-1} NaCl: (☒) = H_2O, (☒) = D_2O.