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Stimuli-responsive polypeptide-based triblock copolymers JACOB RAY, SANDEEP NAIK, DANIEL SAVIN, School of Polymers and High Performance Materials, University of Southern Mississippi — Stimuli-responsive copolymers demonstrate diverse aggregation behavior in aqueous solution, where the molecular architecture and hydrophilic/hydrophobic content influences morphology. The solution morphology of poly(lysine)-b-poly(propylene oxide)-b-poly(lysine) (KPK) triblock copolymers with high lysine content ($>$ 75 wt.%) will be compared with complementary KP diblock copolymers in the same phase range. Light scattering and TEM were used to determine aggregate size and morphology as a function of pH and temperature; furthermore, circular dichroism was used to measure helix-to-coil transitions of the K blocks. PK diblocks in this composition range yield spherical micelles over the entire pH range whereas KPK systems appear to exhibit morphological transitions with changing pH.

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