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End Group Effects on the Hydrogel Formation of PEO-PPO-PEO Triblock Copolymers AARON COHEN, CHANG Y. RYU, Rensselaer Polytechnic Institute, GYOO Y. JUNG, HEE SUNG HWANG, Postech — Pluronic F108, a triblock copolymer consisting of outer polyethylene oxide (PEO) chains and an inner polypropylene oxide (PPO) chains, has been shown to be an effective hydrogel matrix for DNA separation by capillary electrophoresis using single-stranded conformation polymorphism. This presentation will discuss a new pathway to potentially enhance the separation abilities of F108 by altering the chain end groups of the block copolymers. F108 is believed to form a micelle in aqueous solutions with the hydrophobic group in the interior, thus we expect considerable interaction between the DNA sample and the end groups found at the hydrophilic brush layers of the micelle. The rheological properties of end group derivatives of F108, in combination of small angle x-ray scattering, can reveal structural differences in the micelles. In particular, gelation temperature of the end group derivatives can be linked to differences in the micelle structure. Dynamic light scattering can also be used to determine the effects of chain end groups on the hydrodynamic size of the block copolymer micelles in dilute solution.

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