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**Probing the Interaction of Amphiphilic Triblock
Copolymers with a Biomimetic Membrane***

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In the last several years, there has been growing interest in the use of synthetic surfactants to augment cellular repair. Amphiphilic triblock copolymers such as PEO-PPO-PEO have been demonstrated to aid in the repair of a variety of cells. In spite of the reported success of these compounds in clinical trials, the mechanism of their interaction with cell membranes remains poorly understood. In this work, we describe our efforts to examine the effect of the mode of incorporation of triblock polyalkyleneoxide copolymers on membrane structure and stability. For this work, we have employed a model biomembrane whose structure and physical properties have been previously determined. Several modes of polymer incorporation are examined: introduction via a membrane spanning triblock copolymer, grafting onto a phospholipid headgroup, or introduction via a partially inserted triblock copolymer. The polymer-membrane interactions are probed by small angle X-ray scattering and thermal analysis.

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