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Characterization of polyelectrolyte behavior of the polysaccharides chitosan, heparin, and hyaluronan, by light scattering and viscometry. SOHEIL BODDOHI, SUSAN YONEMURA, MATT KIPPER, Colorado State University — This study on the polyelectrolyte behavior of polysaccharides in solution is motivated by our recent work in development of nanostructured polysaccharide-based surface coatings. Chitosan behaves as a weak polycation, and hyaluronan behaves as a weak polyanion, while heparin behaves as a strong polyanion. The ability to control the conformation of these polysaccharides in solution, by changing the solution ionic strength and pH may offer the opportunity to further tune the nanoscale features of polysaccharide-based surface coatings assembled from solution. In the work reported here, the solution conformation of these polymers is determined from gel permeation chromatography coupled to differential refractive index, light scattering, and viscometry detection. These results are related to the nanostructure of chitosan-heparin and chitosan-hyaluronan surface coatings based on polyelectrolyte multilayers.

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