

Supporting Information for

Dynamically bonded layer-by-layer films for self-regulated insulin release

Xi Zhang, Ying Guan, and Yongjun Zhang*

Key Laboratory of Functional Polymer Materials and State Key Laboratory of Medicinal
Chemical Biology, Institute of Polymer Chemistry, College of Chemistry, Nankai University,
Tianjin 300071, China

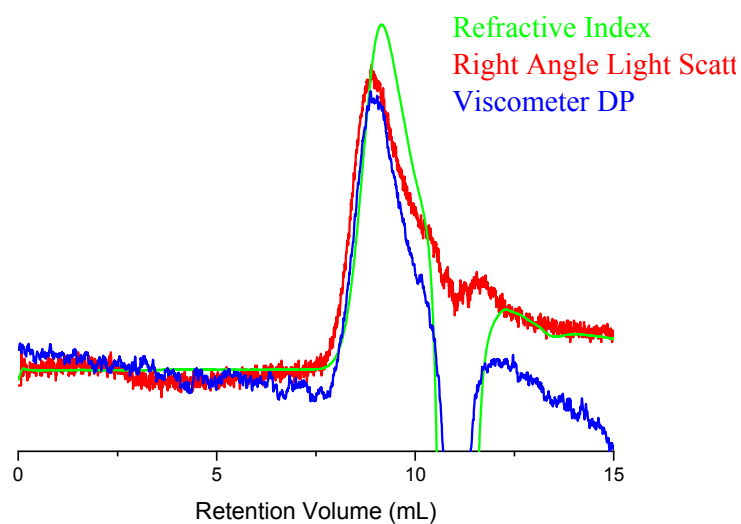


Figure 1S. GPC traces of P(PAAm-AAPBA).

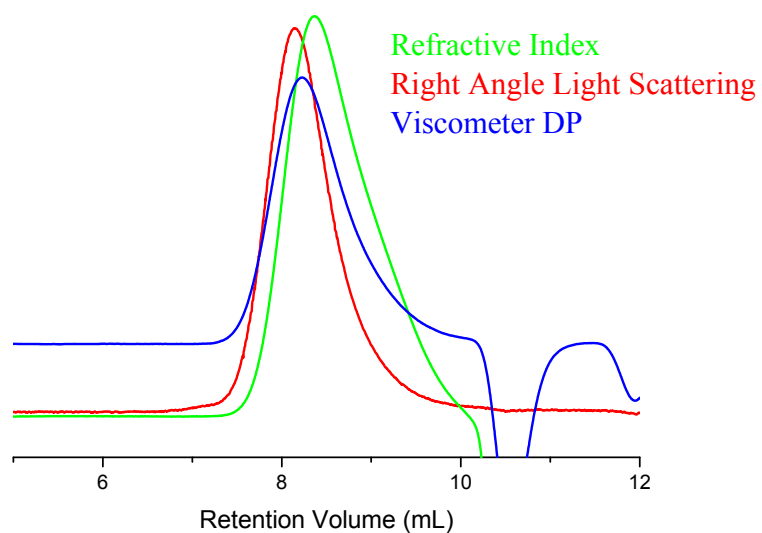


Figure 2S. GPC traces of PVA.

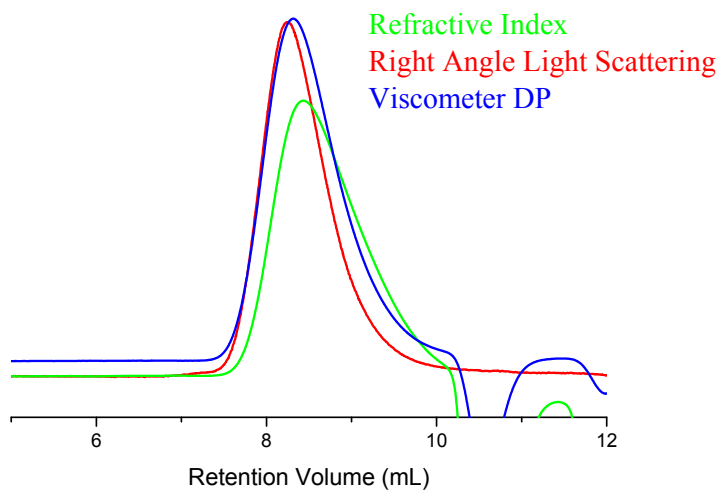


Figure 3S. GPC traces of insulin-PVA conjugate.

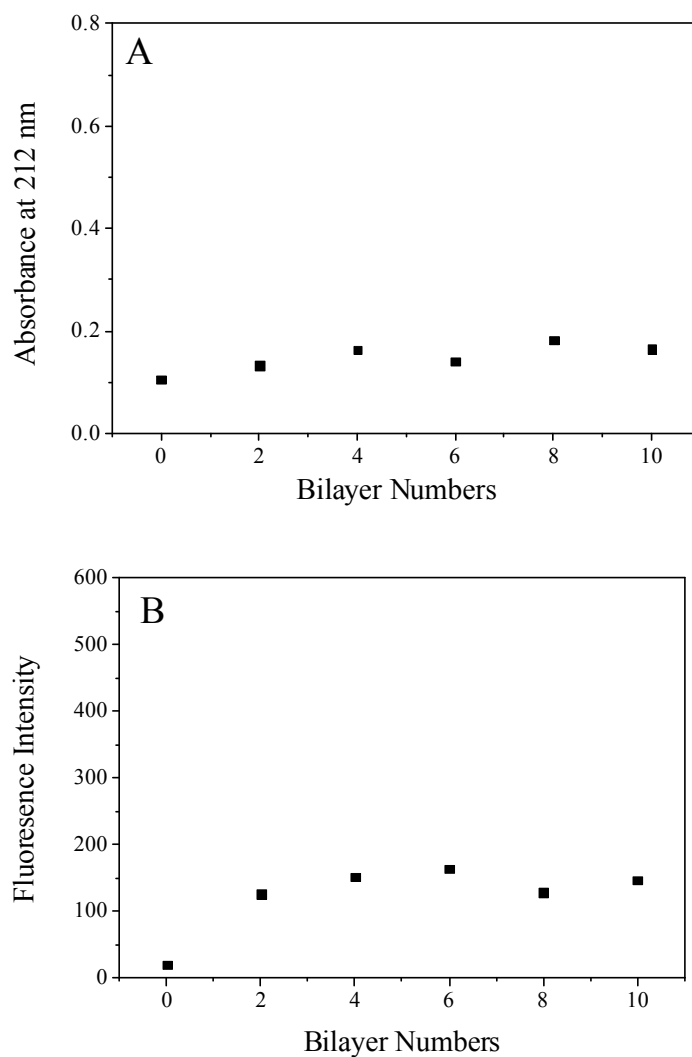


Figure 4S. Assembly of LbL film from P(AAm-AAPBA) and EDC-treated FITC-insulin. The “assembly” process was monitored by UV-vis (A) and fluorescence (B), respectively. FITC-insulin was treated with EDC using the same conditions for the conjugation of FITC-insulin and PVA, except that PVA was absent. Assembly conditions are the same for the assembly of insulin-PVA and P(AAm-AAPBA). The unsuccessful assembly of P(AAm-AAPBA) and EDC-treated FITC-insulin rules out the possibility that the fluorescence of the films assembled in the work may be attributed to insulin multimers, which may form during the EDC catalyzed reaction.

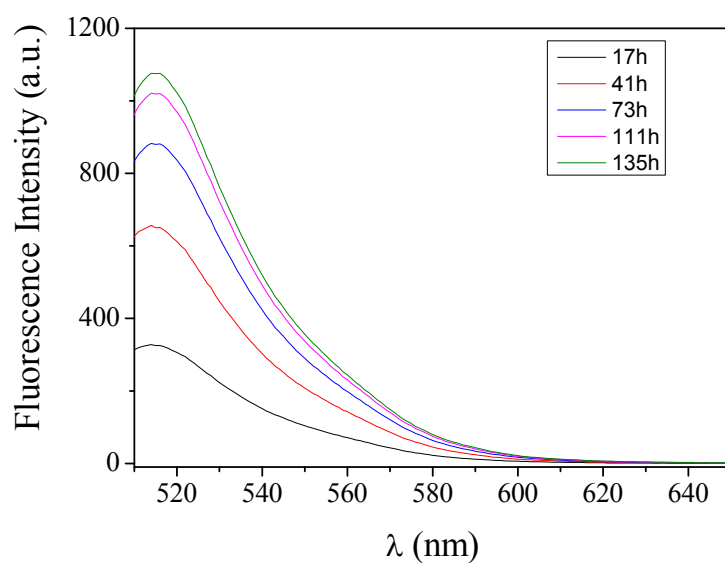


Figure S5. Fluorescence spectra of a phosphate buffer in which a insulin-PVA/P(AAm-AAPBA) film was soaked. The excitation wavelength is 490nm. The release time was 17, 41, 73, 111, and 135, respectively, from bottom to top. T=25°C.