Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B

Supporting Information

Enhanced Electrostatic Discrimination of Proteins on Nanoparticle-coated Surfaces

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Dynamic light scattering:

The distribution of apparent diameters D_h was obtained from the distribution of mean apparent translational diffusion coefficients (D_T) via

(1) $$D_h = 2kT/(6\pi\eta D_T)$$

where k is the Boltzmann constant, and η is the solvent viscosity which was assumed to be that of water.

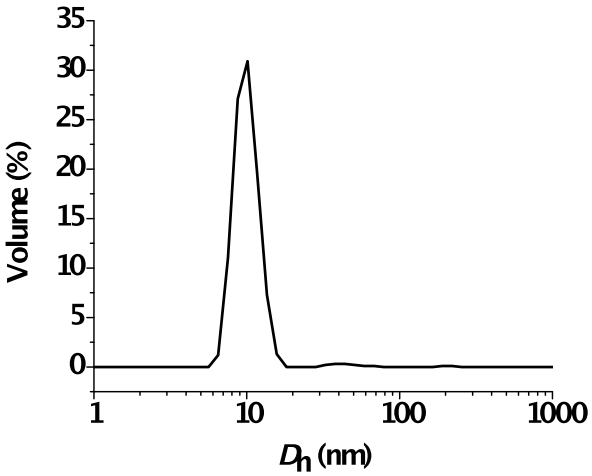

Figure S1. Dynamic light scattering (DLS) results for TTMA NP in pH 5.5, 5 mM phosphate buffer.

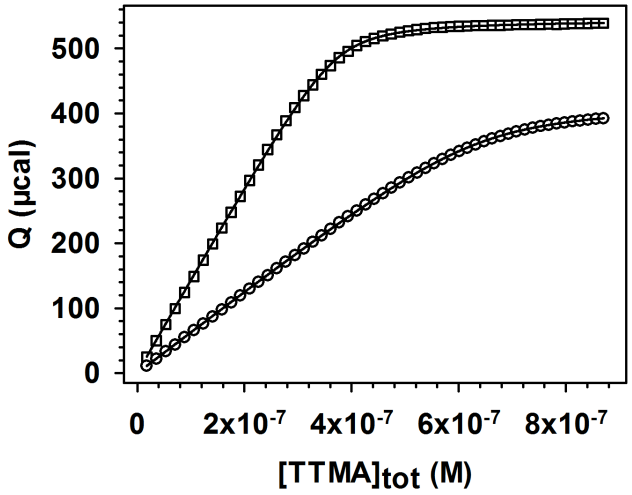

Figure S2. Binding isotherms for (□) BLGA−TTMA and (○) BLGB−TTMA from integration of the curves from raw ITC titration results. These values have been corrected for the heat change from protein dilution (see **Error! Reference source not found.** in Ref 1). Solid lines are fitting via a single independent site binding model.[1]

ITC experiments were performed by titrating TTMA into protein solution. The isotherms were obtained by integrating each exothermic peak and the results were given in Figure S2. By fitting with a single independent site binding model, the parameters were summarized in Table S1.

Table S1. Thermodynamic parameters obtained from equivalent, independent site-binding model for BLGA/B−TTMA.[1]

	n	K_b/ M^{-1}	ΔG/ kcal mol^{-1}
TTMA−BLGA	54	3.8×10^6	-9.1
TTMA−BLGB	31	2.1×10^6	-8.7

Reference:

1. K. Chen, Y. Xu, S. Rana, O. R. Miranda, P. L. Dubin, V. M. Rotello, L. Sun and X. Guo, *Biomacromolecules*, 2011, **12**, 2552-2561.