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

Nickel chelating functionalization of graphene composite for metal affinity membrane isolation of lysozyme

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Electronic Supplementary Information (ESI)

Fig. S1. Variations of zeta potentials of GO-PBA-IDA-Ni composite with the pH of solution media.

Fig. S2. The variations of Lys adsorption efficiencies with the ionic strength. Sample volume and flow rate: 500 μl, 5 μl s^{-1}; the pH and concentration of protein sample solution: 7.0 in PBS buffer and 25 μg ml^{-1}.

Fig. S3. Effect of ionic strength (A) and imidazole concentration (B) in stripping reagent on the recovery of Lys from GO-PBA-IDA-Ni composite film. Sample loading: 500 μl of 25 μg ml^{-1} Lys solution (pH 7.0 PBS) at the flow rate of 5 μl s^{-1}; elution: 0.02 mol l^{-1} borate buffer containing 20 mmol l^{-1} imidazole (A) or 1.0 mol l^{-1} NaCl (B) with various concentration of NaCl (A) or imidazole (B) at the flow rate and volume of eluent were 5 μl s^{-1} and 500 μl, respectively.

Fig. S4. The effect of the flow rate on the adsorption (A) and desorption (B) processes. Sample loading: 500 μl of 25 μg ml^{-1} Lys solution (pH 7.0 PBS); elution: 0.02 mol l^{-1} borate buffer containing 1 mol l^{-1} NaCl and 20 mmol l^{-1} imidazole with the volume of eluent: 500 μl.

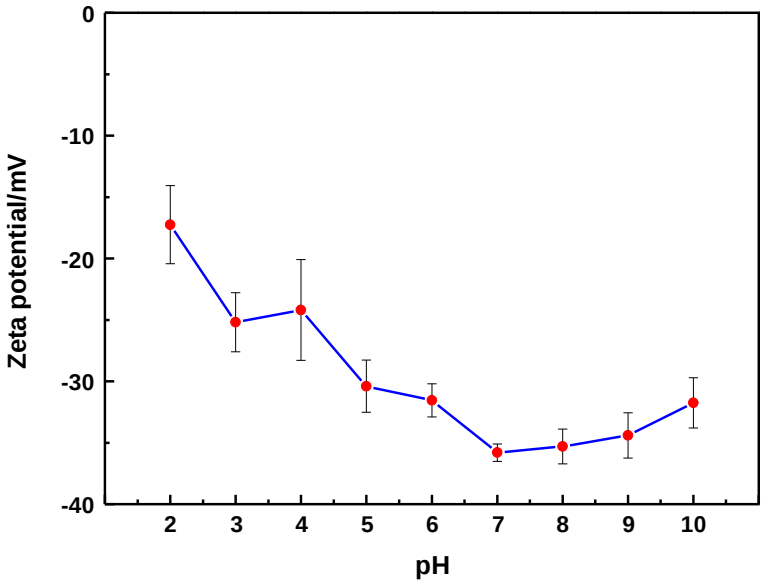

Figure S1

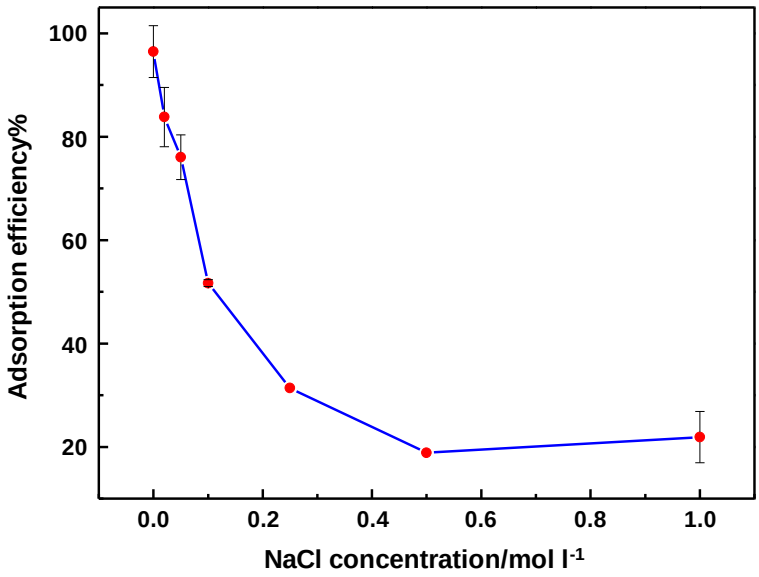

Figure S2

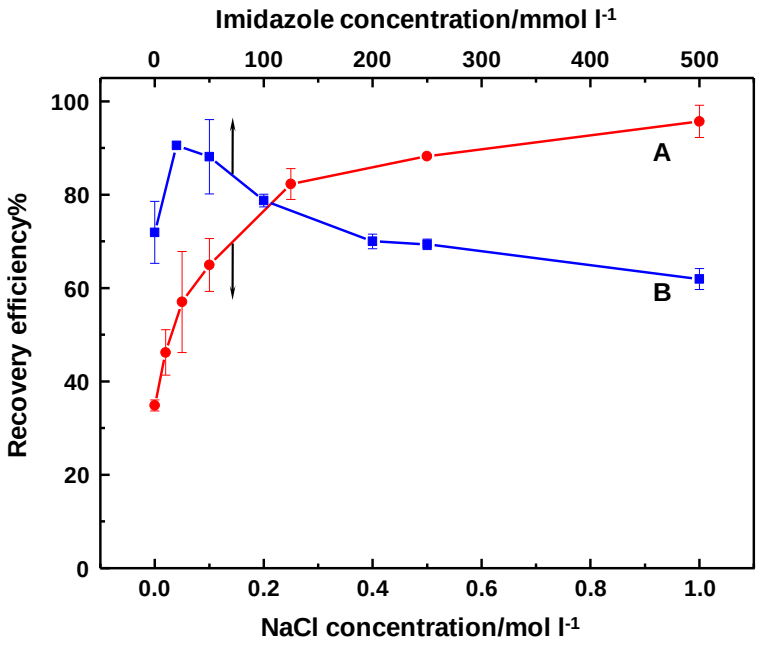

Figure S3

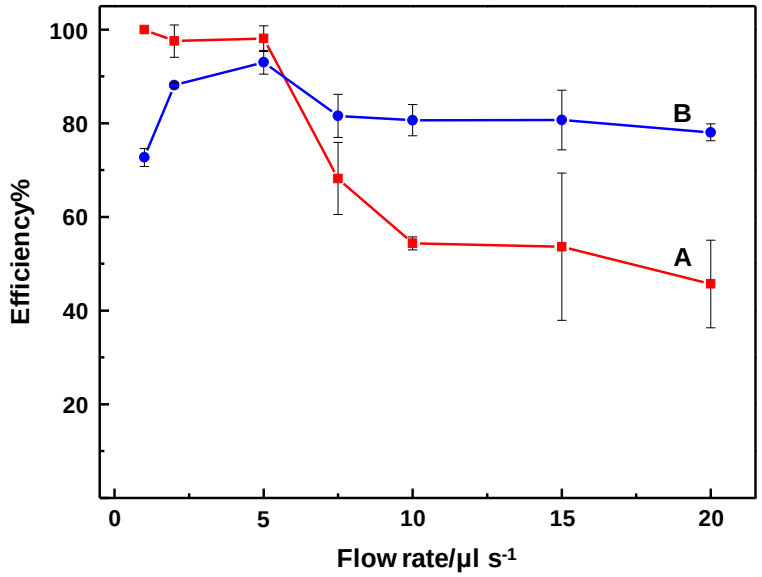

Figure S4