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

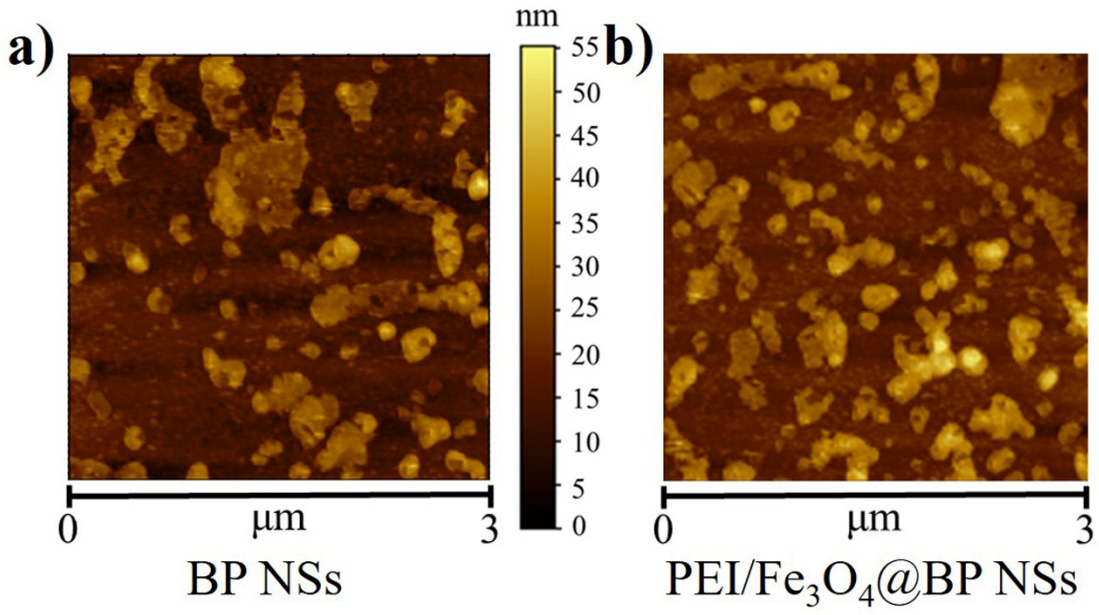

Figure ESI-1. The AFM picture of BP NSs and PEI/Fe_3O_4@BP NSs.

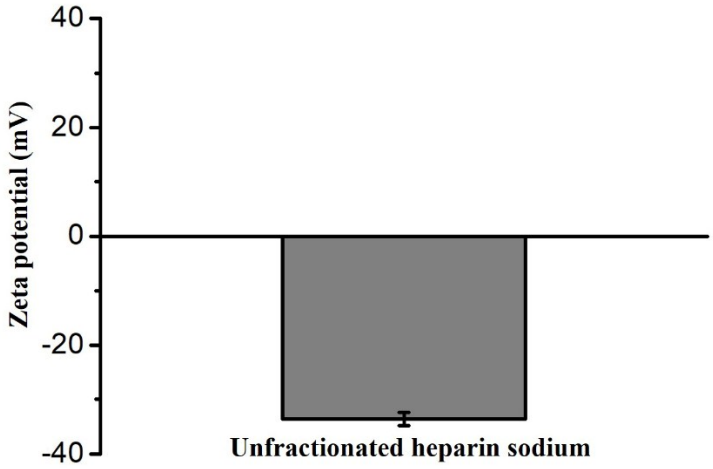

Figure ESI-2. The Zeta potential of unfractionated heparin sodium (-33.6 ± 1.22 mV).

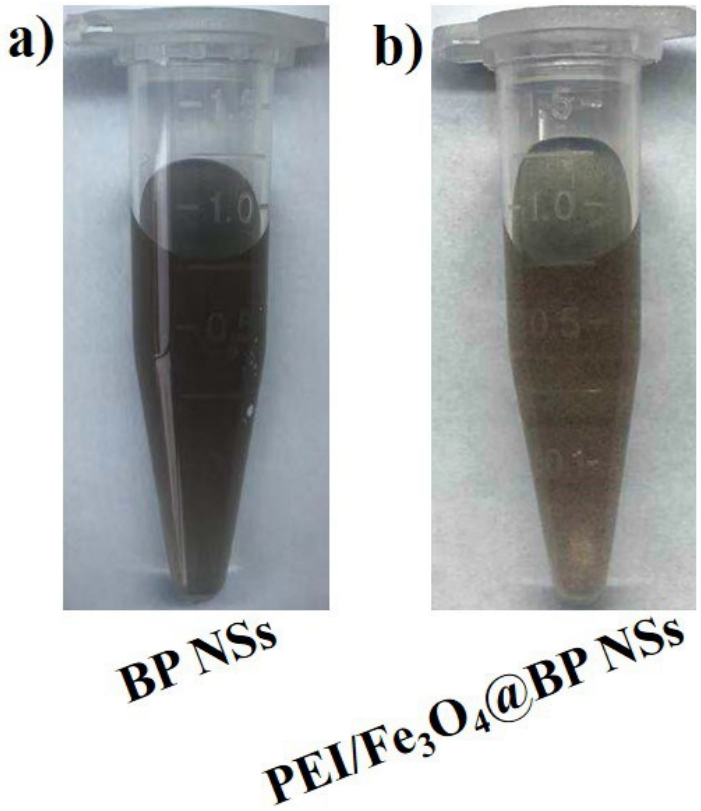

Figure ESI-3. Digital photos of BP NSs before and after modification with PEI and Fe_3O_4-PEG-NH_2 molecules.

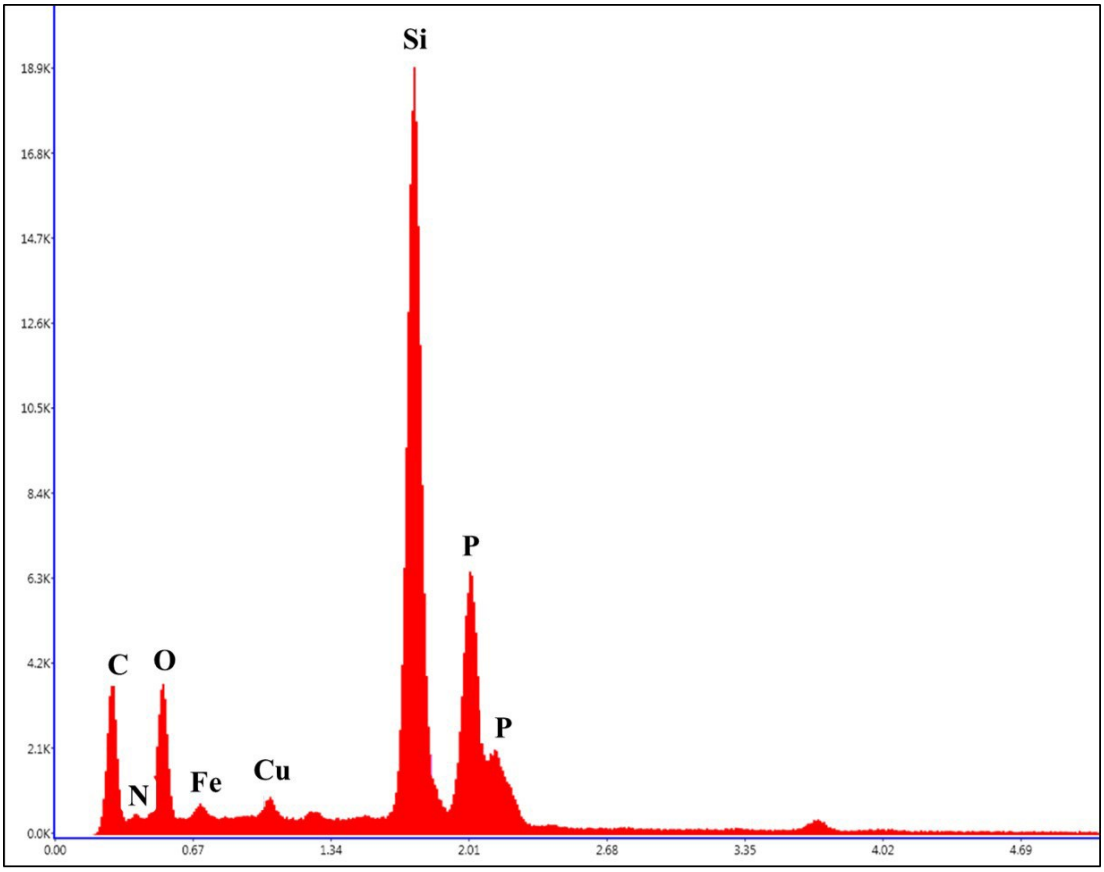

Figure ESI-4. The elemental mapping images of PEI/Fe_3O_4@BP NSs.

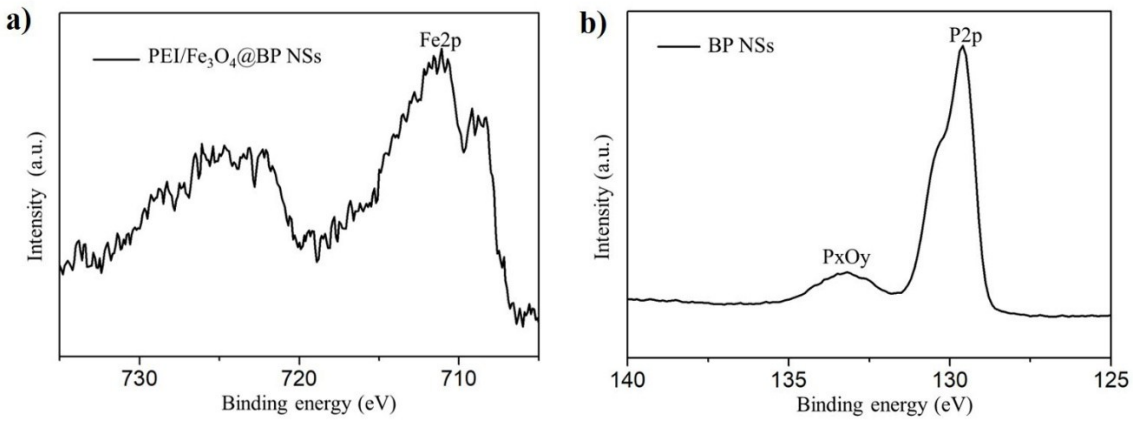

Figure ESI-5. a) Fe2p in the XPS spectrum of PEI/Fe_3O_4@BP NSs; b) P2p in the XPS spectrum of pure BP NSs.

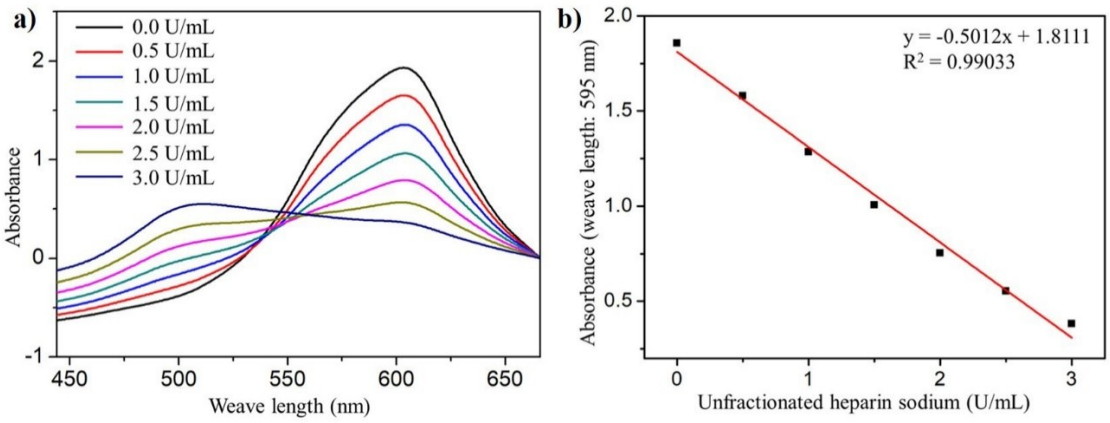

Figure ESI-6. a) Absorption spectra of azure A solution (0.2%, w/v) after addition of different concentrations of UH; b) Calibration curve of the concentration of UH and the value of absorbance.

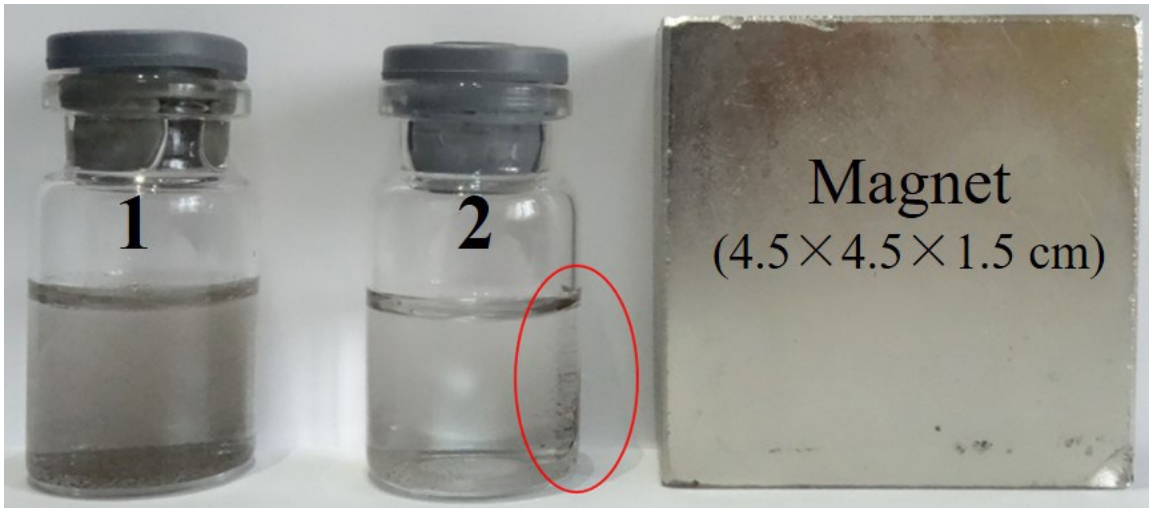

Figure ESI-7. The magnetic enriching ability of PEI/Fe_3O_4@BP NSs in vitro. 10 mL of PEI/Fe_3O_4@BP NSs solution were equally placed in two bottles.

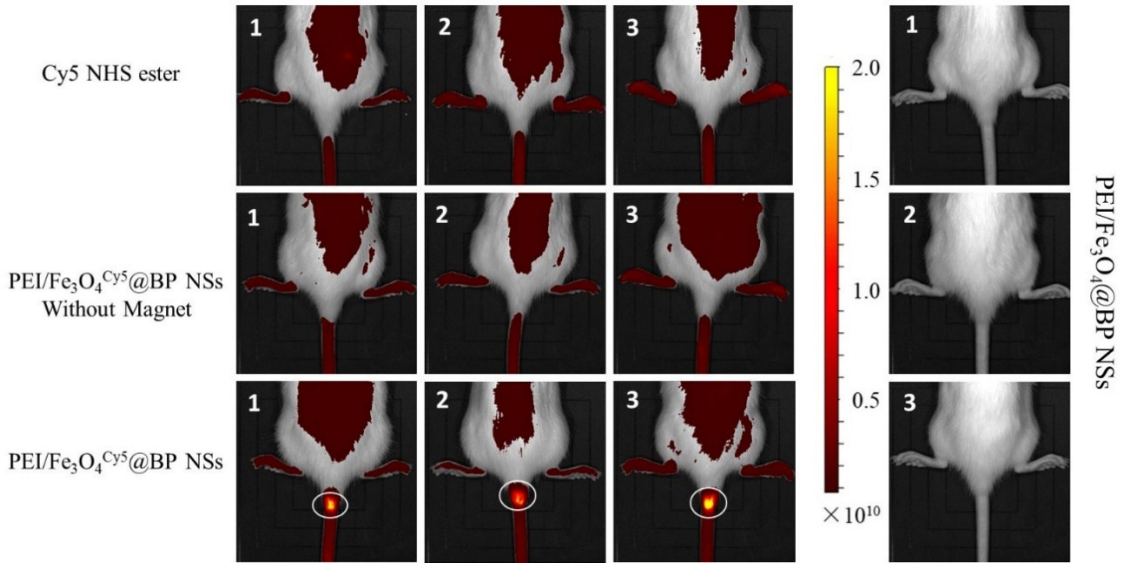

Figure ESI-8. The results of small animal living imaging study. Rats in this experiment were randomly assigned to four groups (Group Ⅰ, PEI/Fe_3O_4@BP NSs; Group Ⅱ, Cy5 NHS ester; Group Ⅲ, PEI/$Fe_3O_4^{Cy5}$@BP NSs without magnet; Group Ⅳ, PEI/$Fe_3O_4^{Cy5}$@BP NSs). All rats except that in the Group Ⅲ were tackled with a button-sized circular magnet fixed on their ventral tail root. Twenty minutes after the rail vein injection of different solutions, the rats were taken fluorescent examinations.

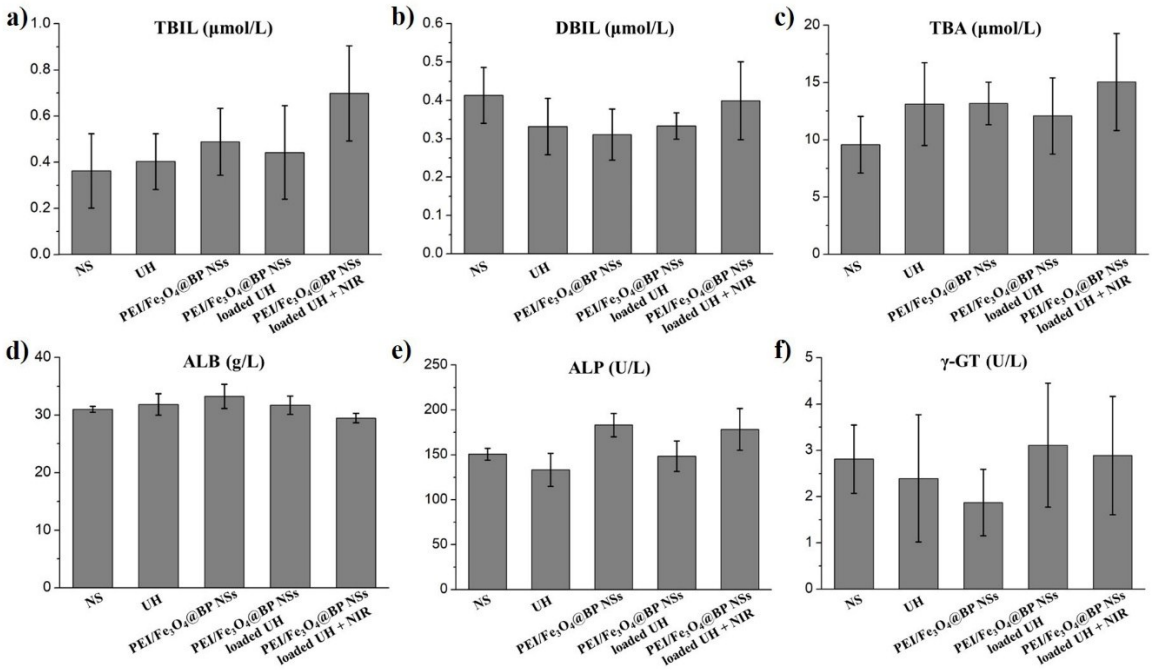

Figure ESI-9. The biochemical test results. a) TBIL; b) DBIL; c) TBA; d) ALP; e) ALB; f) γ-GT. These results in the treated group were not significantly different from the untreated group.

Formulation	UH Dose (mg/kg)	C_{max} (U/mL)	t_{max} (h)	$AUC_{0\rightarrow 6\ h}$ (U×h/mL)
UH (i.v.)	0.4	0.52 ± 0.02	-	3.92 ± 0.51
PEI/Fe_3O_4@BP-UH NSs	0.4	0.17 ± 0.02	1.61 ± 0.07	3.99 ± 0.42
PEI/Fe_3O_4@BP-UH NSs + NIR	0.4	0.35 ± 0.02	1.26 ± 0.08	6.91 ± 0.58

Table S1. Plasma concentration profile and pharmacokinetics of unfractionated heparin.