

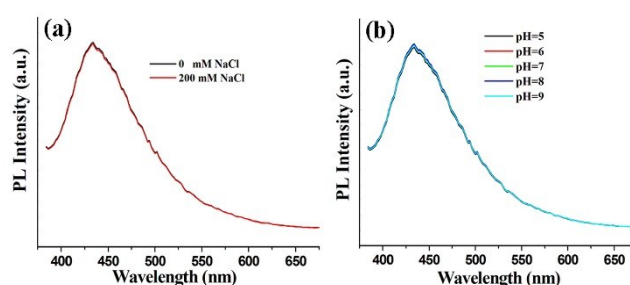
## Dual-emitting quantum dots/carbon nanodots-based nanoprobe for selective and sensitive detection of $\text{Fe}^{3+}$ in cells

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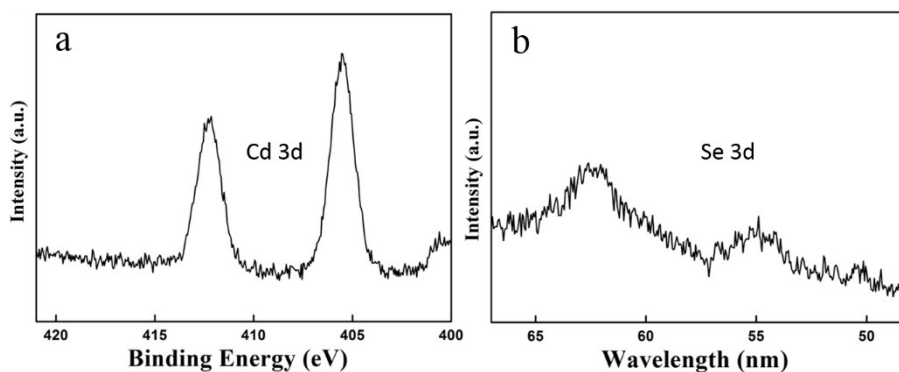
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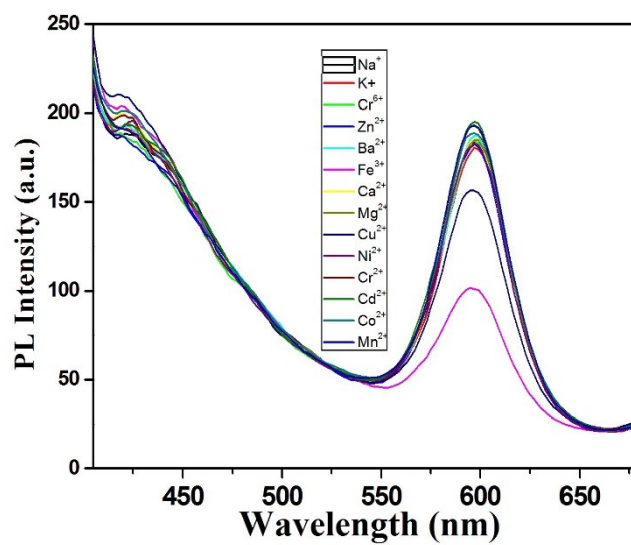
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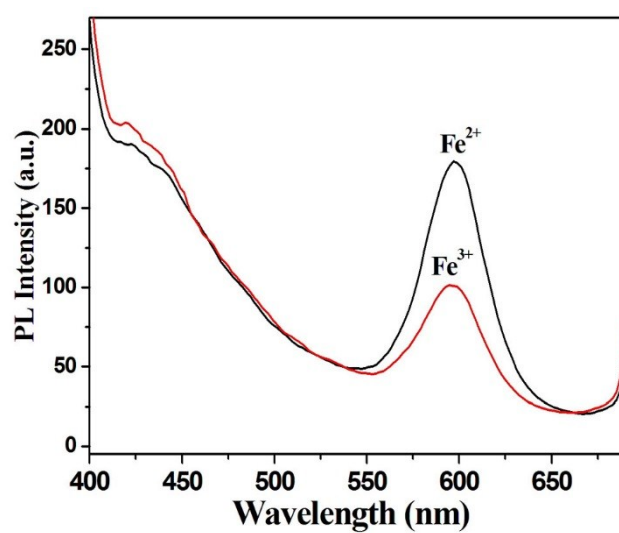
**Fig S1.** The fluorescence spectra of CNDs-doped  $\text{TiO}_2$  microspheres in the physiological ionic strength (NaCl, 200 mM) and physiological pH (pH=5~9).



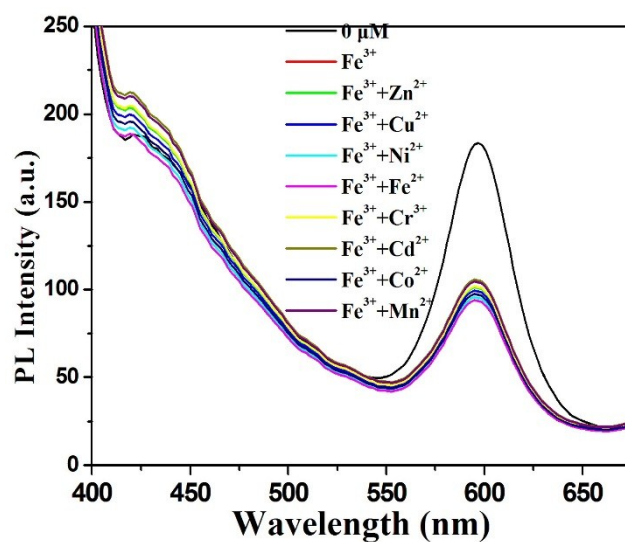
**Fig S2.** X-ray photoelectron spectroscopy (XPS) spectra of Cd 3d (a) and Se 3d (b) of dual-emission nanosensor.



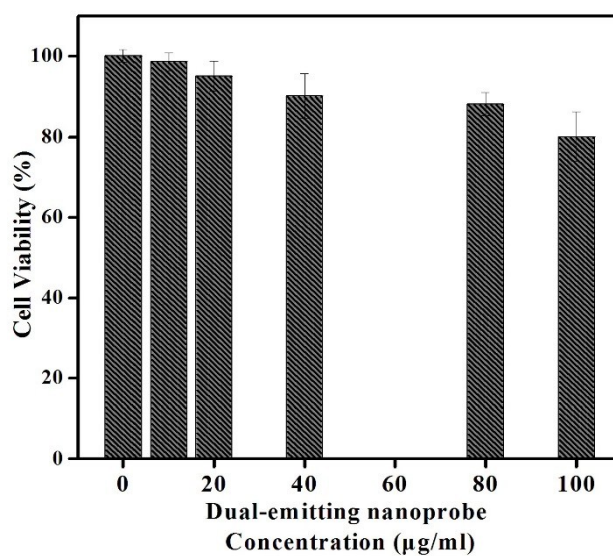
**Fig S3.** Fluorescence spectra of dual-emission nanoparticles upon addition of representative metallic ions.



**Fig S4.** Fluorescence spectra of dual-emission nanoparticles upon addition of  $\text{Fe}^{3+}$  and  $\text{Fe}^{2+}$  with same concentration ( $10^{-4}$  M).



**Fig S5.** The anti-interference ability study of dual-emission nanoprobe upon addition of  $\text{Fe}^{3+}$  (100  $\mu\text{M}$ ) and other metal ions (100  $\mu\text{M}$ ).



**Fig S6.** Viability of 293T cells in cell medium for 24 h after incubation with different concentrations of fluorescent microsphere.