

## Supplemental Information

### **Magnetic beads-based electrochemiluminescence immunosensor for determination of cancer markers using quantum dots functionalized PtRu alloy as labels**

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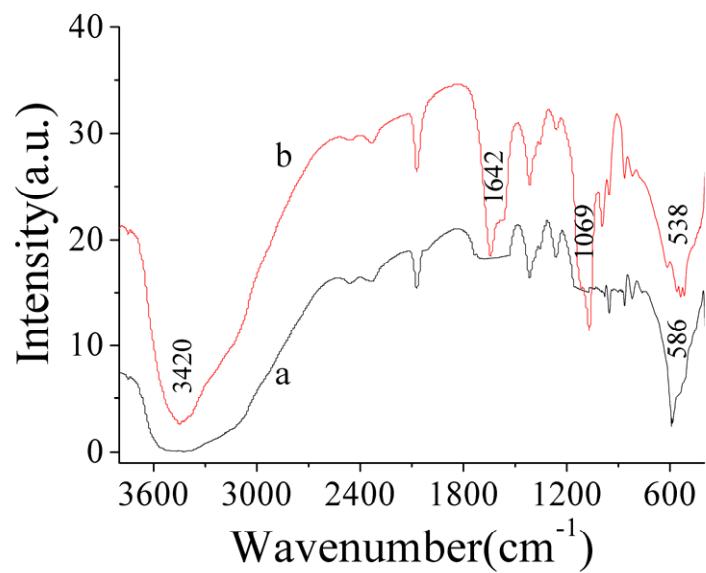


Fig. S1 FT-IR spectra of  $\text{Fe}_3\text{O}_4$  (a) and  $\text{Fe}_3\text{O}_4/\text{CS}$  (b)

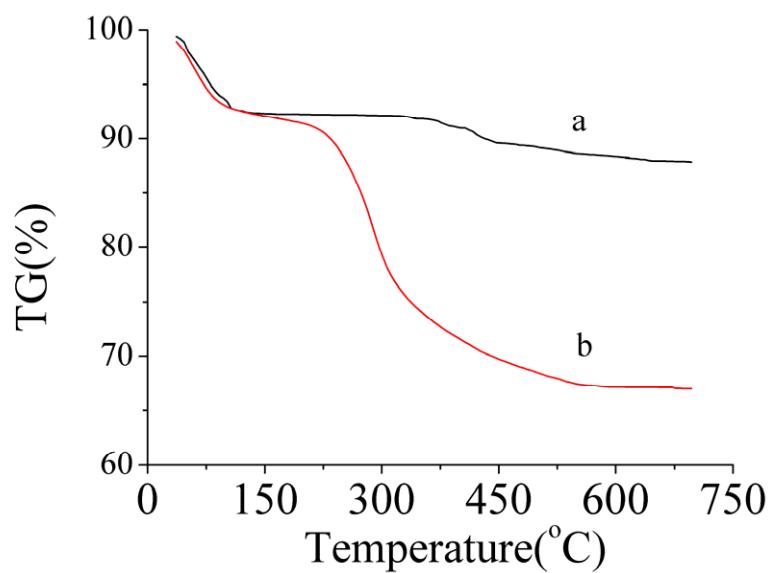


Fig. S2 TG curve of  $\text{Fe}_3\text{O}_4$  (a) and  $\text{Fe}_3\text{O}_4/\text{CS}$  (b) MNPs

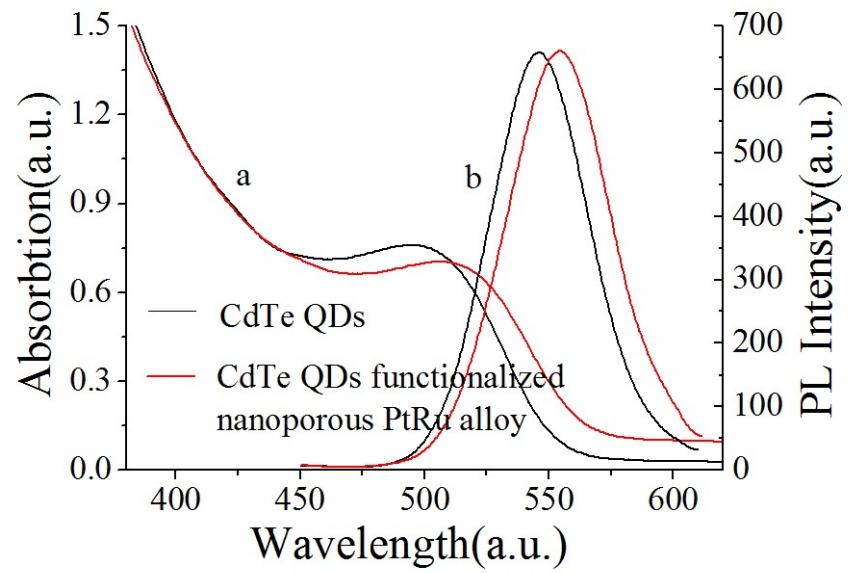


Fig. S3 Absorption (a) and PL (b) spectra of the CdTe QDs and QDs@PtRu