

## Supporting Information

### **pH-sensitive oligopeptide magnetic mesoporous silica beads for deoxyribonucleic acid extraction**

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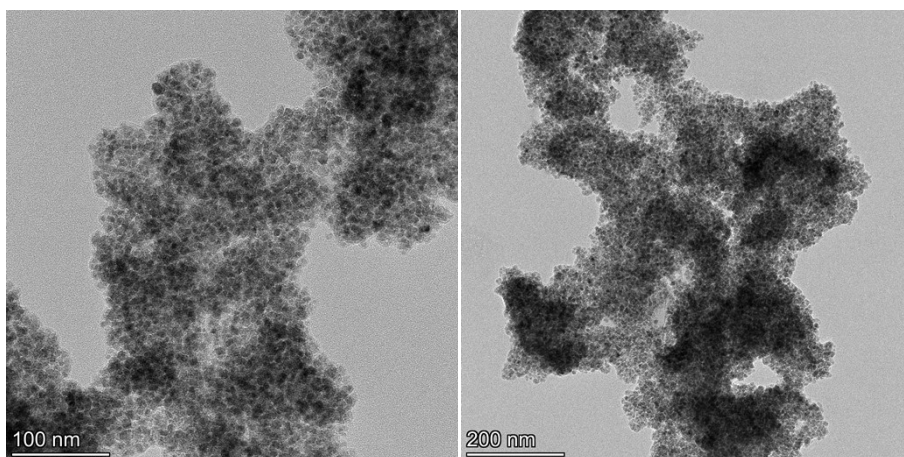
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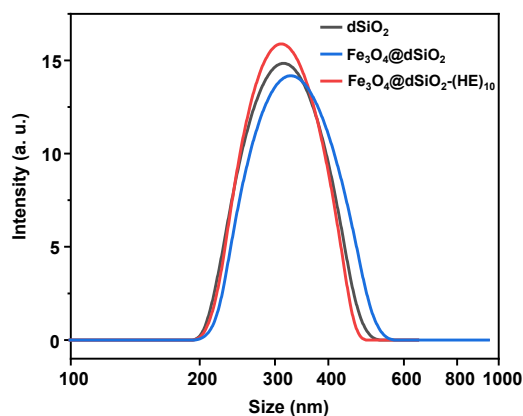
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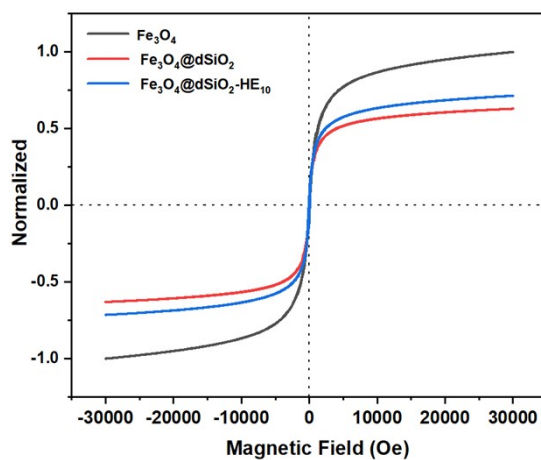
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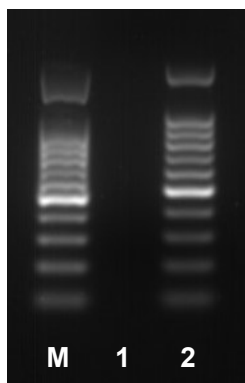
**Fig. S1** TEM images of  $\text{Fe}_3\text{O}_4$  nanoparticles; their average diameter was 5~10 nm; the scale bar corresponds to 100 nm (left) and 200 nm (right).



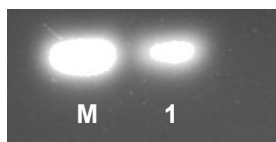
**Fig. S2** Hydrodynamic diameters of  $\text{dSiO}_2$ ,  $\text{Fe}_3\text{O}_4@\text{dSiO}_2$  and  $\text{Fe}_3\text{O}_4@\text{dSiO}_2\text{-(HE)}_{10}$  determined by DLS measurements.



**Fig. S3** The normalized magnetic hysteresis curves of  $\text{Fe}_3\text{O}_4$ ,  $\text{Fe}_3\text{O}_4@\text{dSiO}_2$  and  $\text{Fe}_3\text{O}_4@\text{dSiO}_2\text{-(HE)}_{10}$  at 300 K.



**Fig. S4** 1% Agarose gel electrophoresis of DNA marker. Lane M: 100 bp DNA marker; lane 1: Supernatant of Dynabeads MyOne Silane; lane 2: Elution of Dynabeads MyOne Silane.



**Fig. S5** Extraction of PCR amplification products from human genomic DNA. Lane M: Marker; Lane 1: Elution of  $\text{Fe}_3\text{O}_4@\text{dSiO}_2\text{-(HE)}_{10}$ .