Electronic Supplementary Material (ESI) for ChemComm.
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# A simple assay for probing transformations of superparamagnetic iron oxide nanoparticles in human serum†

## Electronic supporting material

### Size characrerization of SPIONs

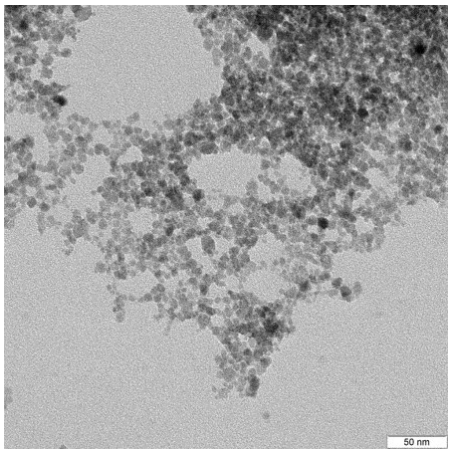


**Fig. S1** An TEM image of SPIONs, revealing a 5.8±1.8 core size (transmission electron microscope Zeiss Libra 120).

### Analytical measurements

**Table S1** Parameters of ICP-based methods

| Parameter | MS | AES[a] |
|---|---|---|
| Plasma gas flow | 16.5 L $min^{-1}$ | 12.0 L $min^{-1}$ |
| Auxiliary gas flow | 0.6 L $min^{-1}$ | 0.5 L $min^{-1}$ |
| Nebulizer Ar flow | 0.9 L $min^{-1}$ | 0.5 L $min^{-1}$ |
| Analyzed sample flow | 0.9 mL $min^{-1}$ | 1.8 mL $min^{-1}$ |
| RF power | 1250 W | 1250 W |
| Dwell time | 1 ms | - |
| Isotopes monitored / spectral lines | $^{32}S$, $^{57}Fe$ | 182.034 nm (S), 259.940 nm (Fe) |
| Spectral resolution mode | medium | - |

[a] An iCAP-6500 Duo spectrometer (Thermo Scientific, USA).

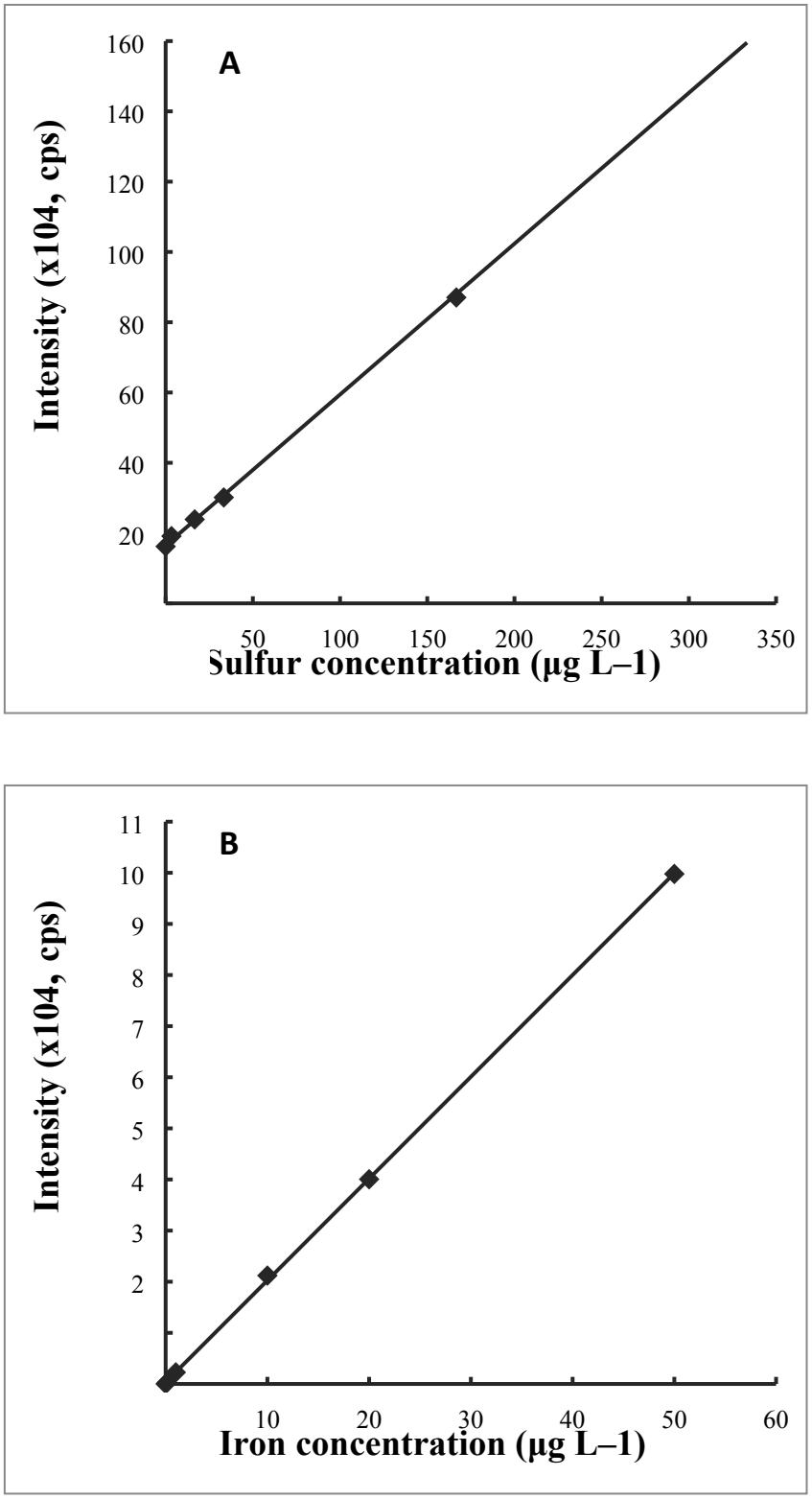


**Fig. S2** Calibration lines for sulfur (A) and iron (B)

**Binding to histidine**

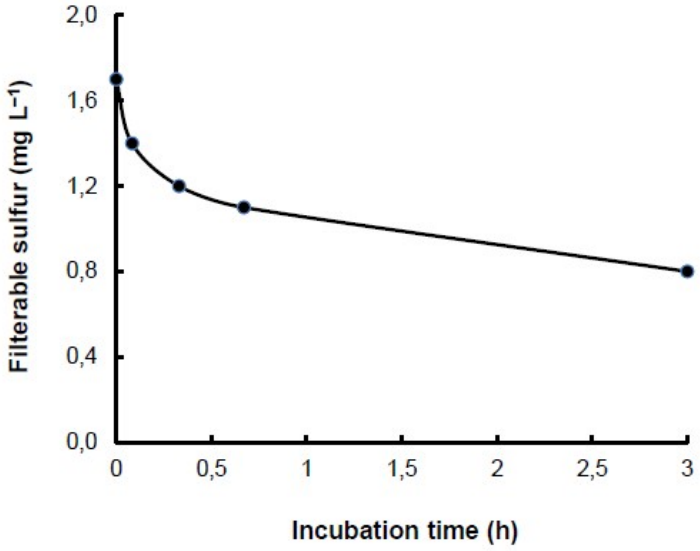


**Fig. S3** Dependence of histidine concentration on the time spent on coating of SPIONs. Initial concentration of histidine, $3.7\times10^{-6}$ M; for other conditions, see the main text.