Accurate Quantification of Disease Markers in Human Serum Using Iron Oxide Nanoparticle-linked Immunosorbent Assay

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Supplementary Figures

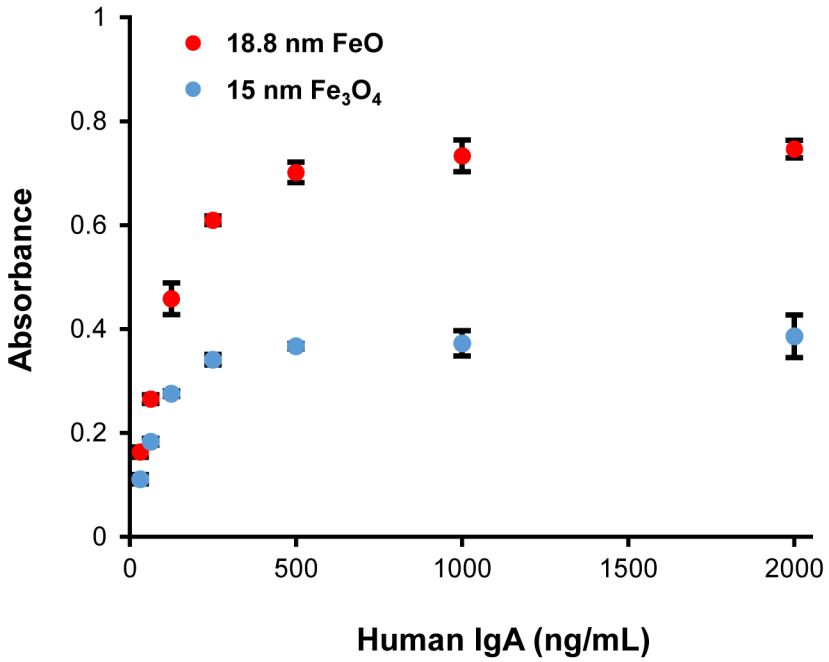

Figure S1. Size-dependent detection sensitivity. The detection sensitivity of 18.8 nm FeO and 15 nm Fe_3O_4 conjugated probes was compared in a sandwich ILISA of purified human IgA. Data represent means ± SD of three measurements.

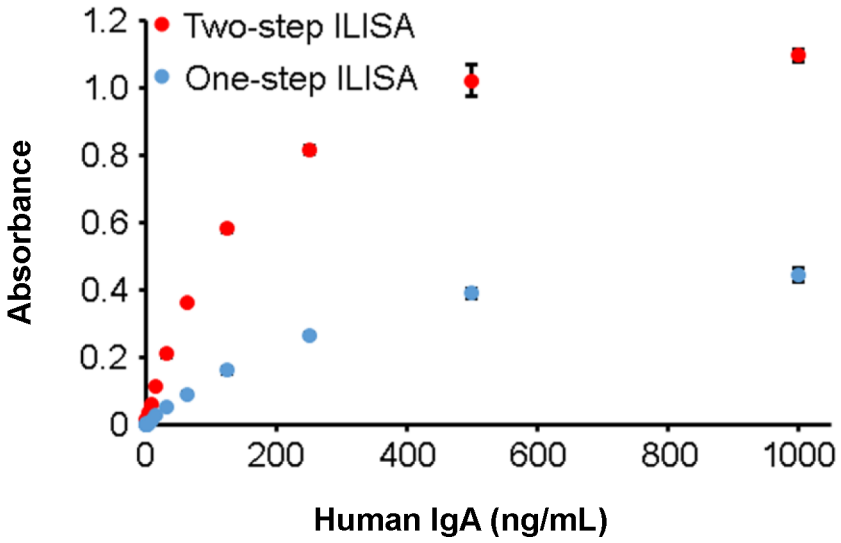

Figure S2. Increase in sensitivity with two-step sandwich ILISA. The measured absorbance as a function of IgA concentration is shown with two-step and one-step ILISA assays, respectively. The increase in absorbance (and thus sensitivity) ranges from 2.5 to 4.0. Data represent means ± SD of three measurements.

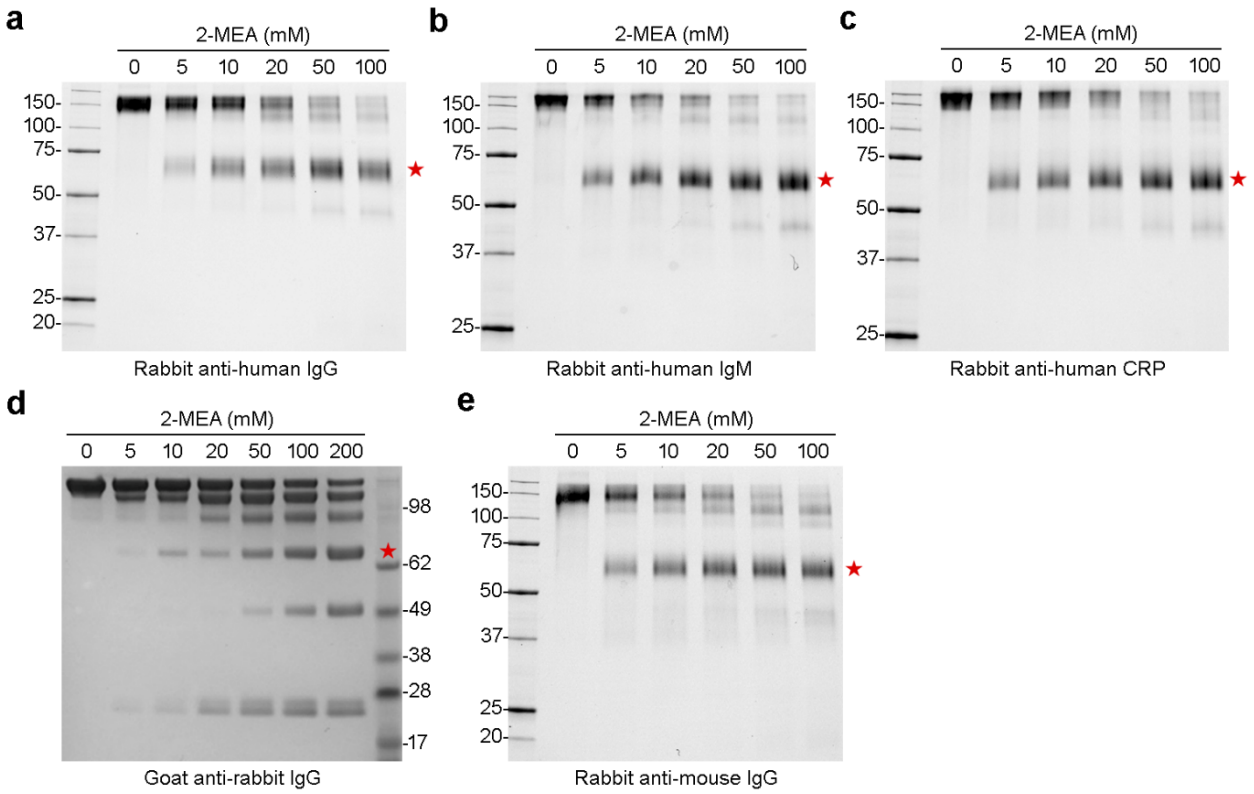

Figure S3. Antibody reduction. Antibodies were reduced with 2-MEA at the indicated concentrations. **(a)** Rabbit anti-human IgG antibody. **(b)** Rabbit anti-human IgM antibody. **(c)** Rabbit anti-human CRP antibody. **(d)** Goat anti-rabbit IgG antibody. **(e)** Rabbit anti-mouse IgG antibody. Red stars indicate the protein bands of half-IgG.

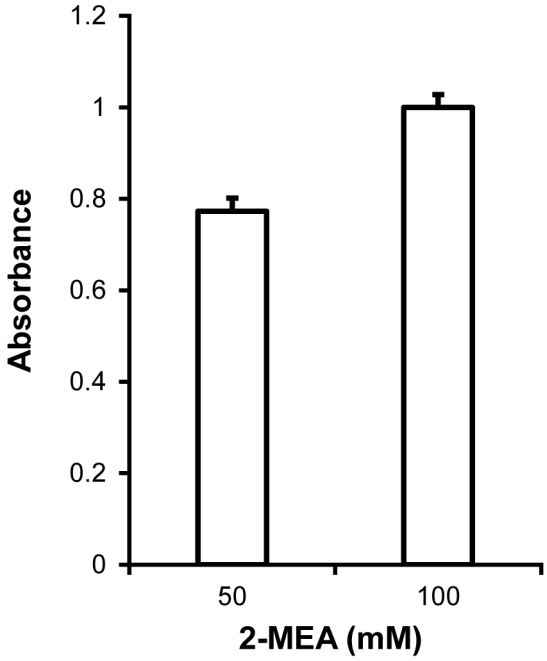

Figure S4. Comparison of signal intensity from the IONP probes at different 2-MEA concentrations. IONP probes constructed with antibody fragments generated at 2-MEA concentrations of 50 mM and 100 mM respectively were used and resulting signal (absorbance) was compared, indicating that the use of 2-MEA concentration of 100 mM gives better results. Data represent means ± SD of three measurements.

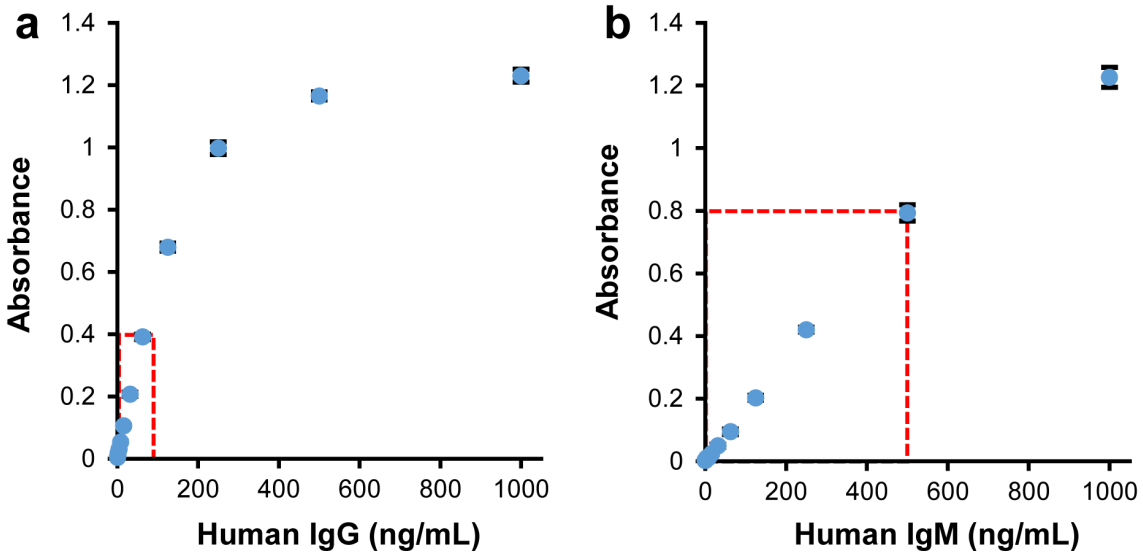

Figure S5. Standard curves of purified IgG (a) and IgM (b). The red-dotted rectangle indicates the linear portion of the curve. Data represent means ± SD of three measurements.