Electronic Supplementary Material (ESI) for Analyst.

S1. Size Distribution Analysis

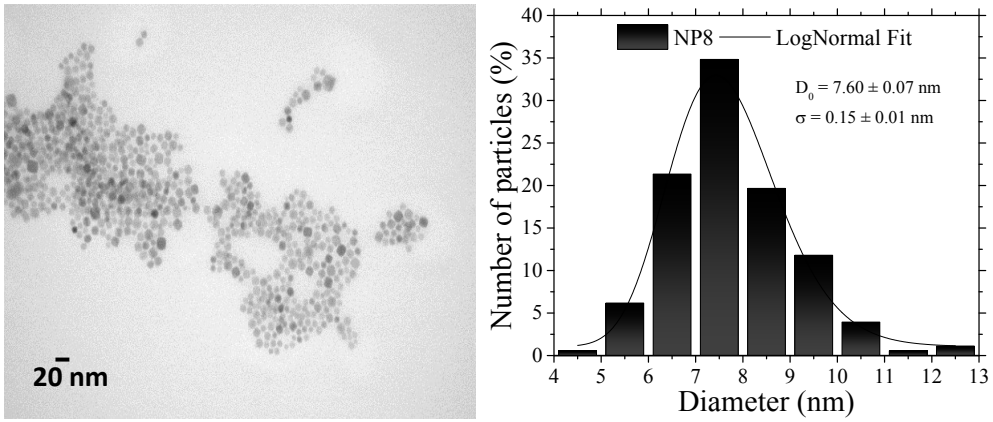

Figure S1. TEM image and size distribution histogram of sample NP8.

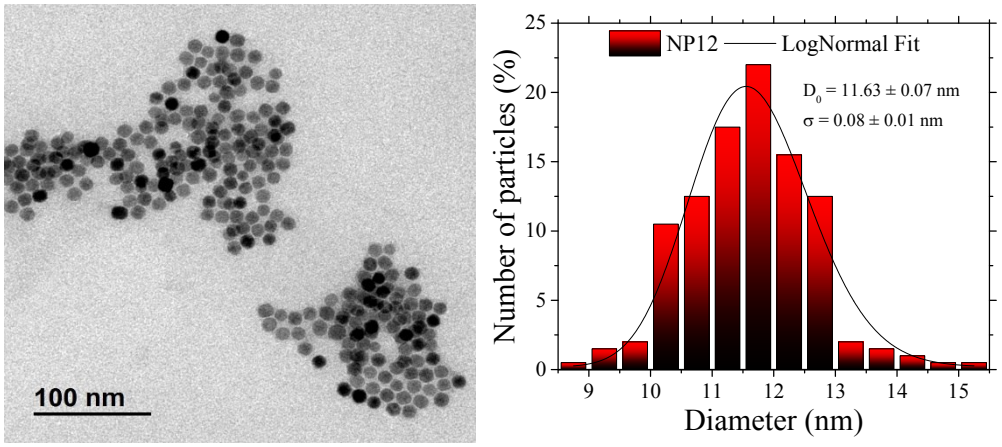

Figure S2. TEM image and size distribution histogram of sample NP12.

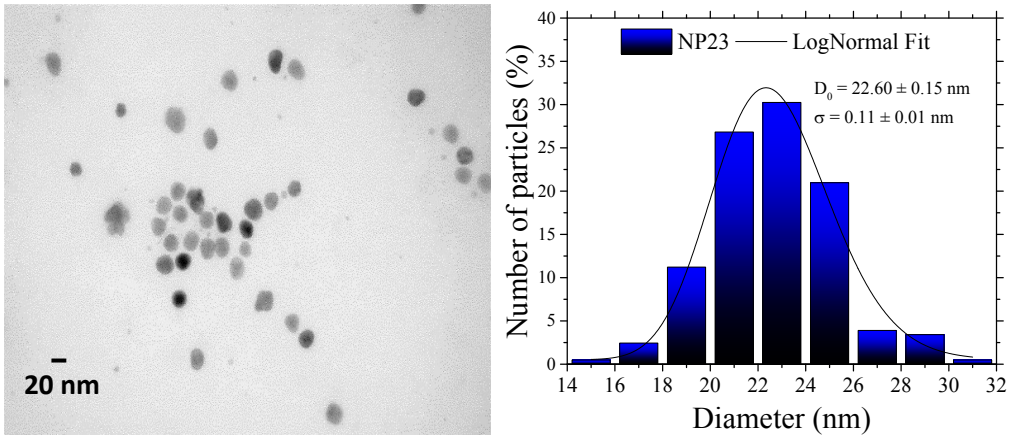

Figure S3. TEM image and size distribution histogram of sample NP23.

S2. Surface chemistry and nature of the iron oxide nanoparticles

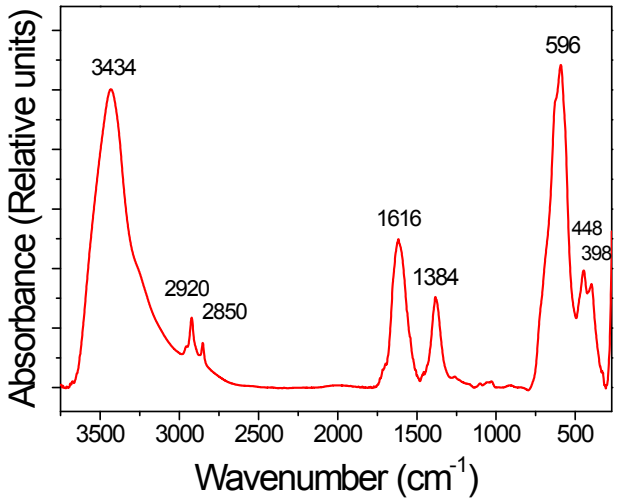

Figure S4. Infrared spectrum of sample NP8.

Figure S4 shows, as an example, the IR spectrum of sample NP8, which confirms the presence of the DMSA coating. It also shows a certain degree of oxidation from magnetite to maghemite. The infrared band at 3434 cm^{-1} is due to the stretching band vibration of H_2O molecules. The absorption band at 1616 cm^{-1} is due to the C=O bond vibration from the DMSA. Furthermore, the IR band at 1384 cm^{-1} is attributed to the C-H bending vibration. In the low frequency region, bands at 596, 448 and 398 cm^{-1} are attributable to iron oxide. The former is attributed to magnetite, and 448 and 398 cm^{-1} bands suggest a partial oxidation of the particles, since they are typical from maghemite.