Supplementary Materials

The Effect of pH and Buffer on Oligonucleotide Affinity for Iron Oxide Nanoparticles

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Magnetic nanoparticles (MNPs) were characterized using dynamic light scattering (DLS) on a Malvern Zetasizer Nano device (Malvern Instruments, Great Britain). For DLS studies, nanoparticles were diluted in deionized water to a concentration of 300 μg/mL.

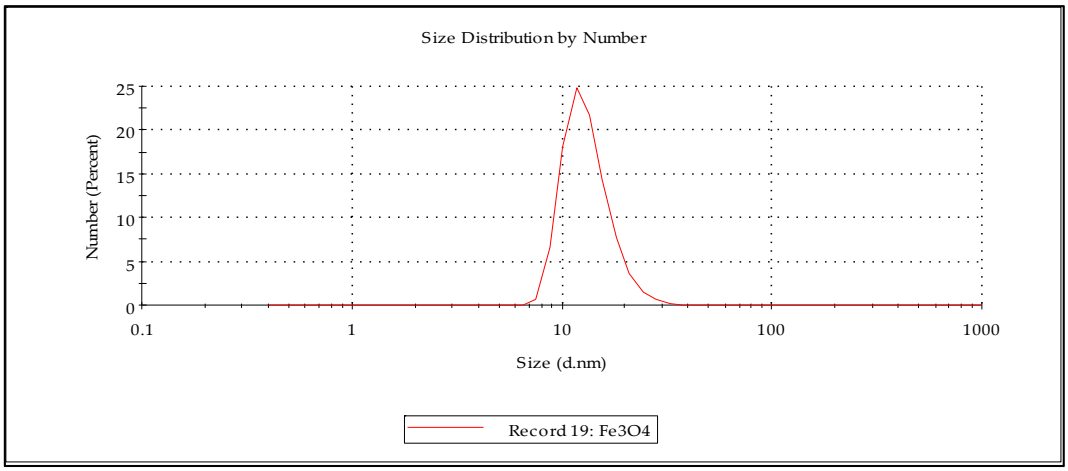

Figure S1. DLS size distribution of magnetic nanoparticles. The particle size was determined by the DLS method to be 15.57 ± 2.18 nm, with a polydispersity index (PDI) of 0.296 ± 0.03 and a ζ-potential of 36 ± 1 mV.

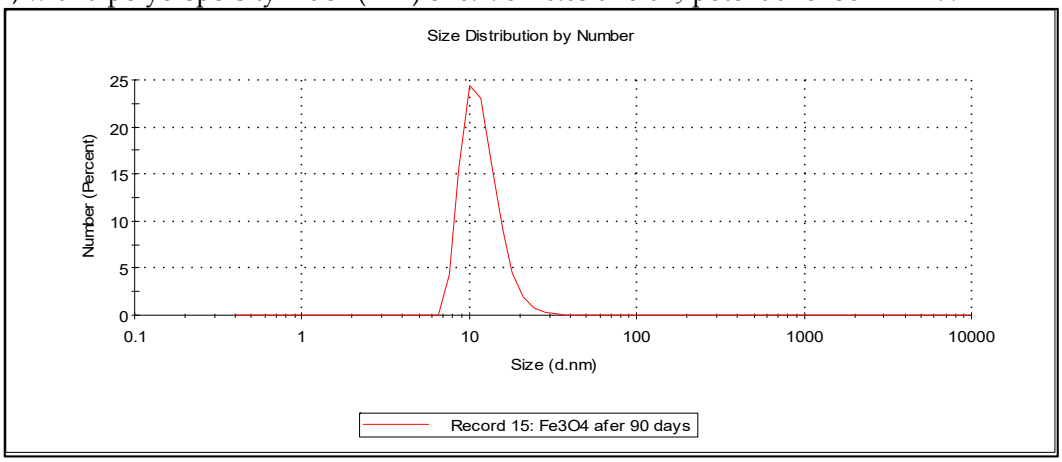

Figure S2. DLS size distribution of magnetic nanoparticles after 90 days of storage. The particle size was determined by the DLS method to be 14.35 ± 1.29 nm, with a PDI of 0.307 ± 0.04 and a ζ-potential of 36 ± 1 mV.

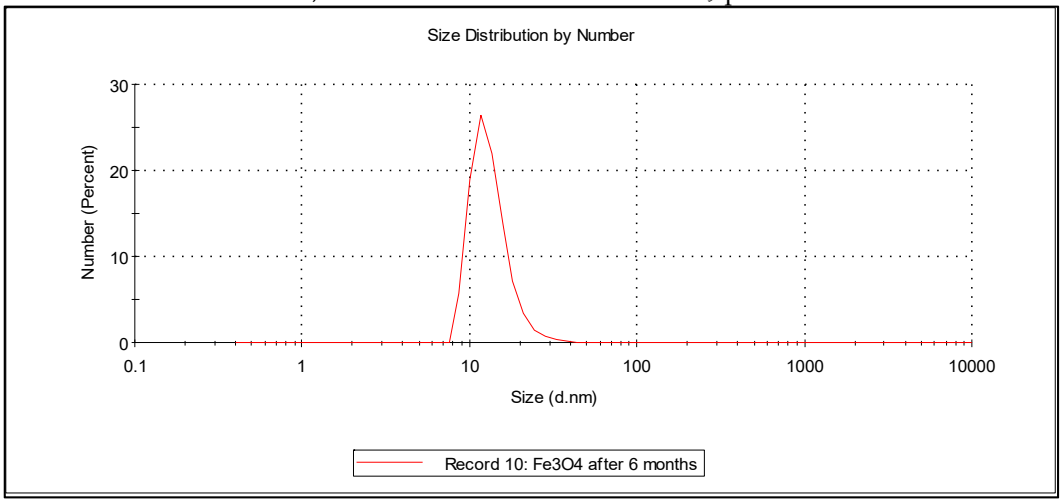

Figure S3. DLS size distribution of magnetic nanoparticles after six months of storage. The particle size was determined by the DLS method to be 14.75 ± 1.47 nm, with a PDI of 0.297 ± 0.02 and a ζ-potential of 36 ± 1 mV.

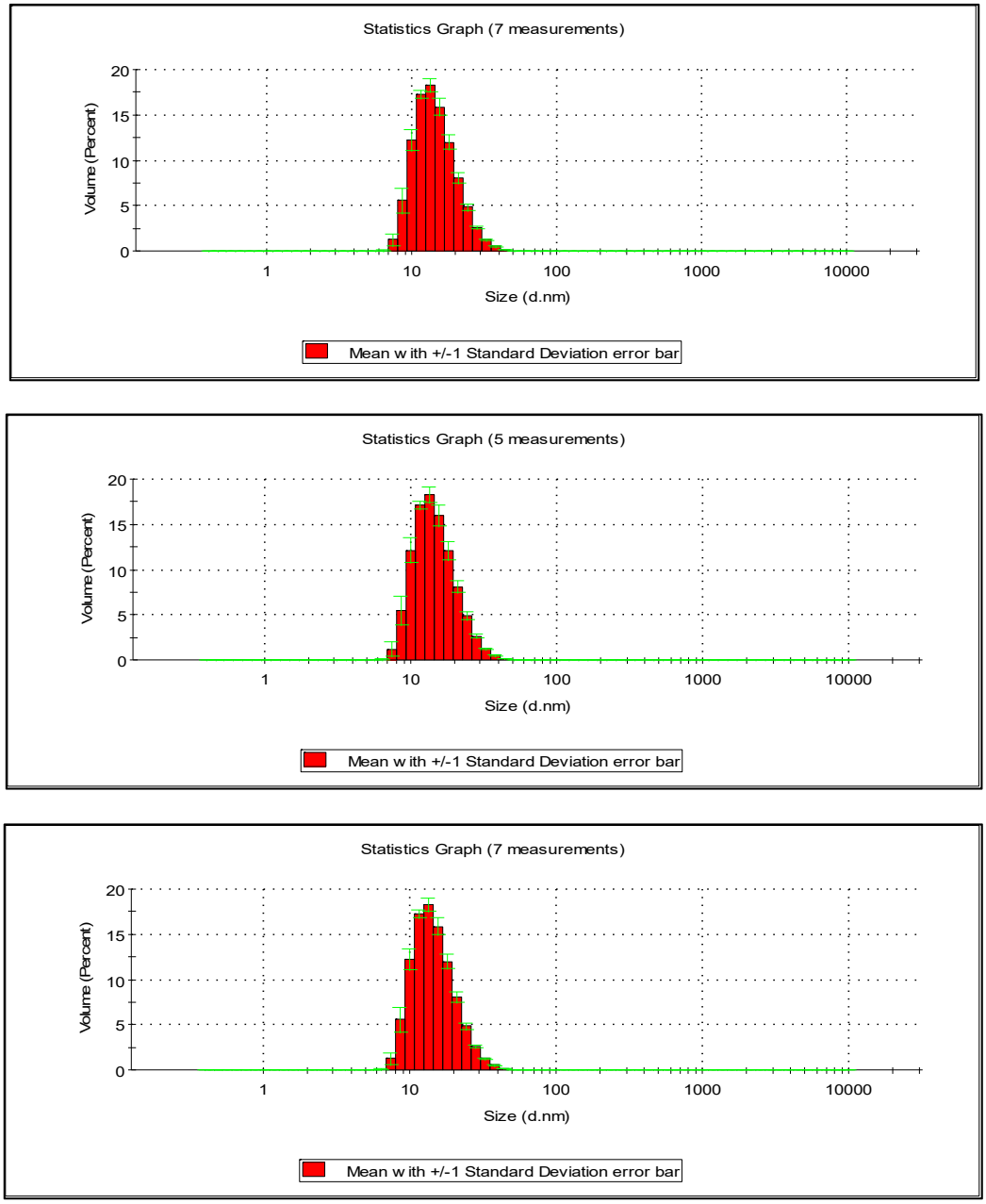

Figure S4. DLS volume distribution of fresh magnetic nanoparticles (up), after 90 days (in the middle), after six months (bottom).

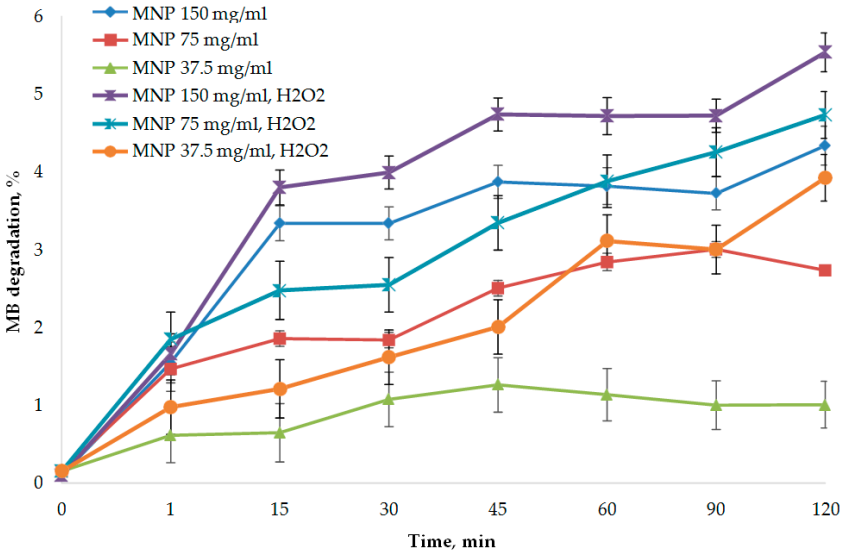

Figure S5. Methylene blue (MB) degradation assay in the presence and absence of H_2O_2 as an oxidizing agent. The MB degradation % was calculated from the absorbance decrease at 665 nm using a Clariostar plate reader (BMG Labtech, Germany). The reactions were carried out using 37.5 μg/ml, 75 μg/ml, and 150 μg/ml MNP.