Supplementary Materials

pH-responsible Doxorubicin-loaded Fe_3O_4@$CaCO_3$ Nanocomposites for Cancer Treatment

Victoriya Popova, Yuliya Poletaeva, Alexey Chubarov and Elena Dmitrienko

Institute of Chemical Biology and Fundamental Medicine (ICBFM), Siberian Branch of Russian Academy of Sciences, 8 Lavrentiev Avenue, 630090 Novosibirsk, Russia

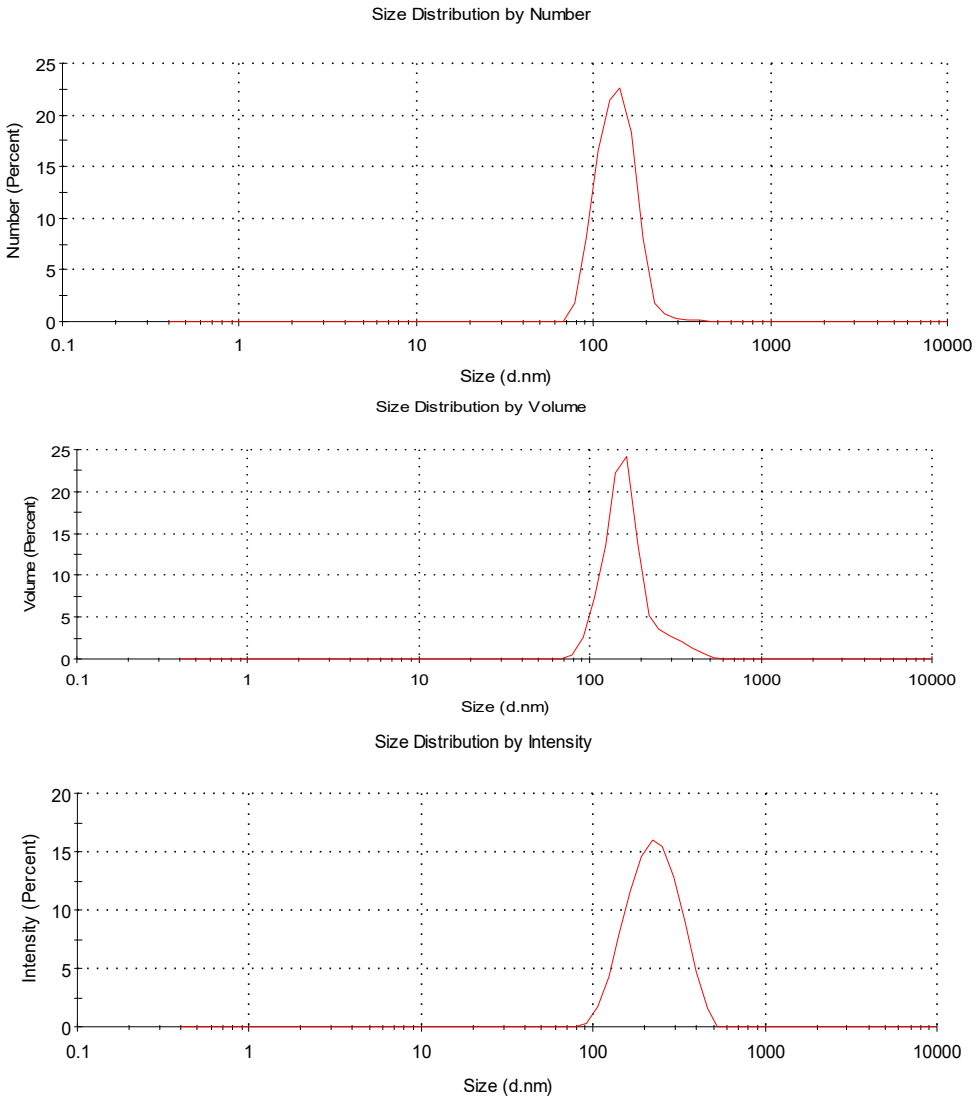

Figure S1. DLS size distribution of Fe_3O_4@$CaCO_3$ (0.45 mg/mL of Fe_3O_4 synthesis) by number (top), volume (middle) and intensity (bottom) obtained by adding 0.45 mg/mL.

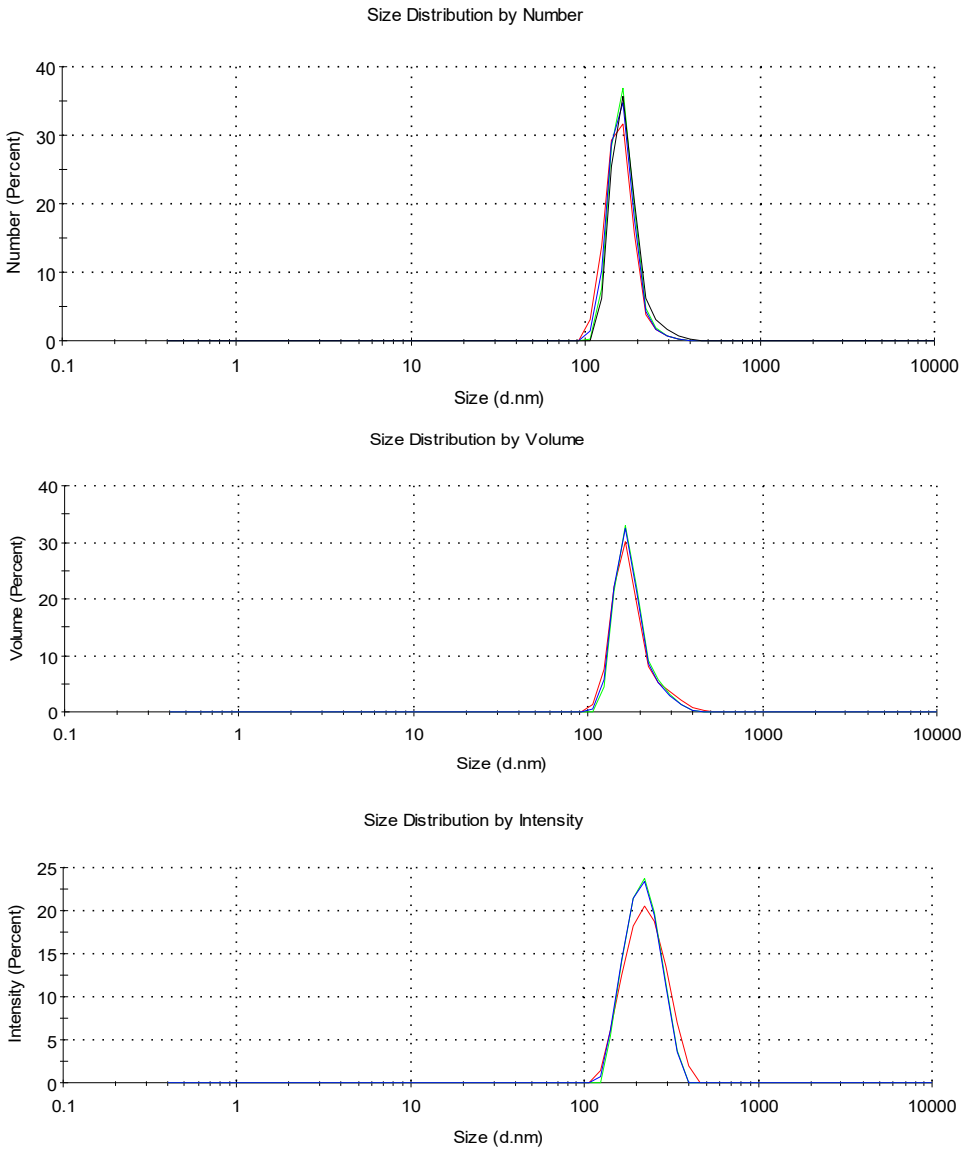

Figure S2. DLS size distribution of Fe_3O_4@$CaCO_3$ by number (top), volume (middle), intensity (bottom) after 5 months of storage at 7 °C in deionized water. The particle size was determined by DLS (139 ± 5 nm, PDI of 0.33 ± 0.01).

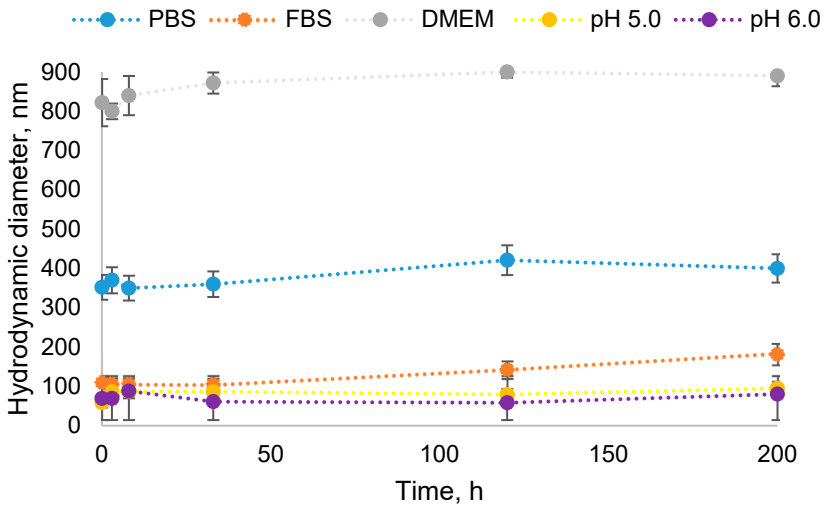

Figure S3. The hydrodynamic diameter by DLS of Fe_3O_4@$CaCO_3$ in various solutions.

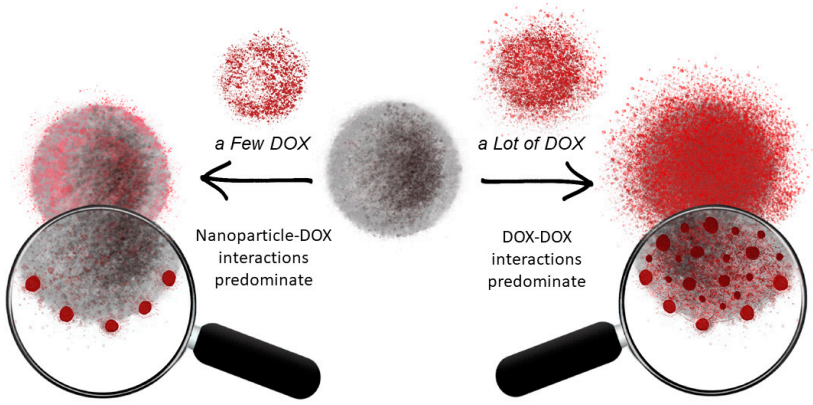

Figure S4. Possible nanoparticle interactions with doxorubicin (DOX).

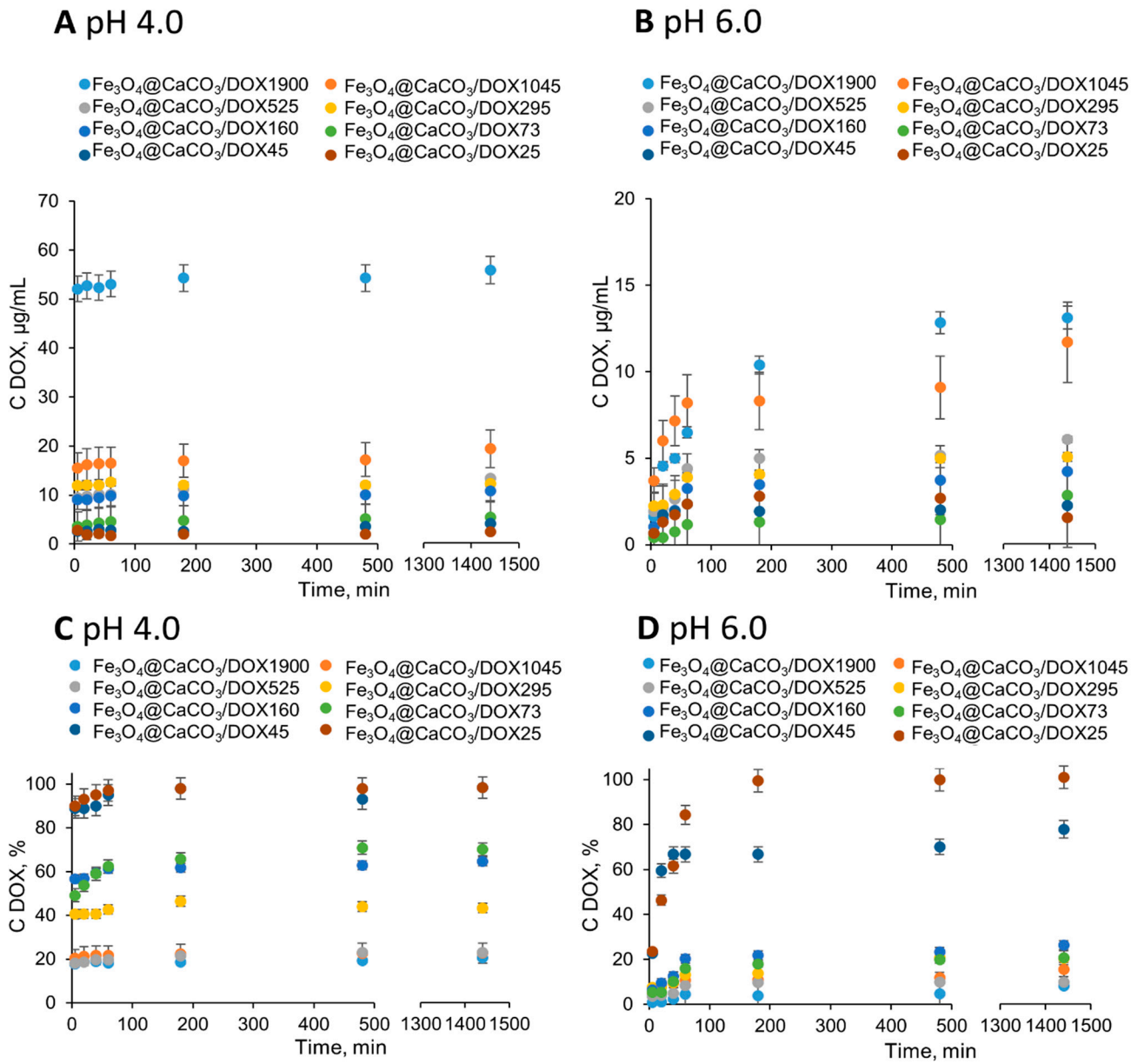

Figure S5. The proportion of DOX release from Fe_3O_4@$CaCO_3$/DOX (capacity, 25–1900 µg/mg) at pH 4.0 (A, C); pH 6.0 (B, D).

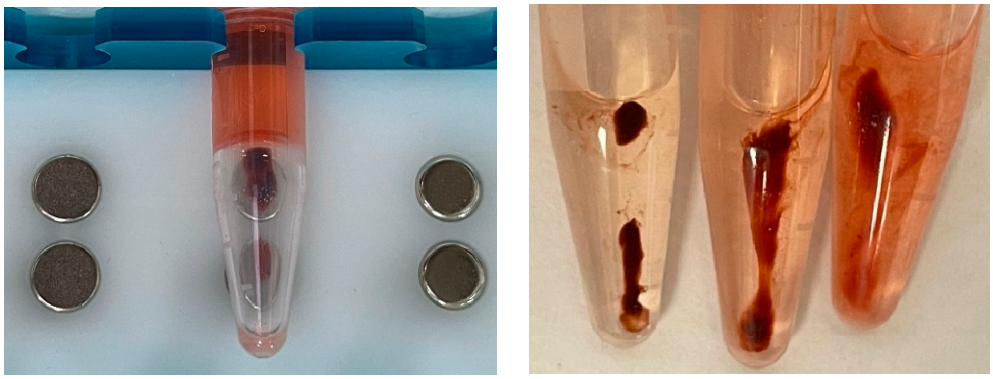

Figure S6. The confirmation of DOX-loading by photography. The left photography also shows magnetic behavior on the magnetic tube rack.

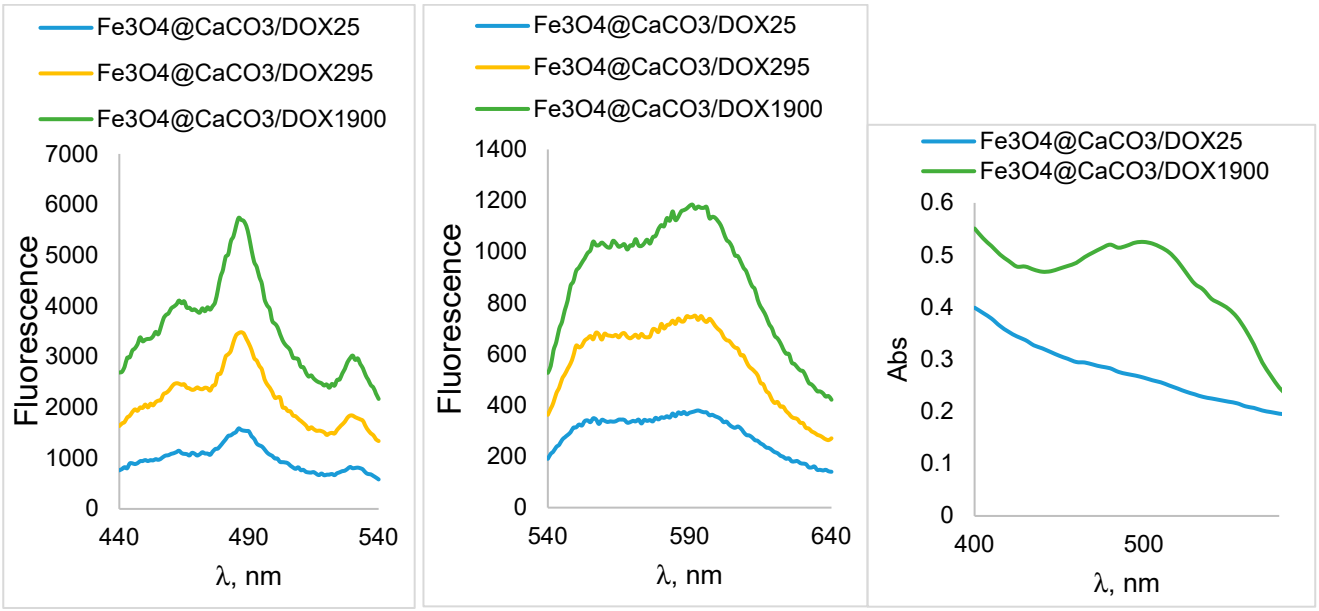

Figure S7. Fluorescence and UV-vis spectra of Fe_3O_4@$CaCO_3$/DOX nanocomposites. The measurements weres carried out using 100 µl of the solution on the Clariostar (BMG Labtech, Ortenberg, Germany).