Electronic Supplementary Information for

Dual-responsive Magnetic Nanodroplets for Controlled Oxygen Release via Ultrasound and Magnetic Stimulation

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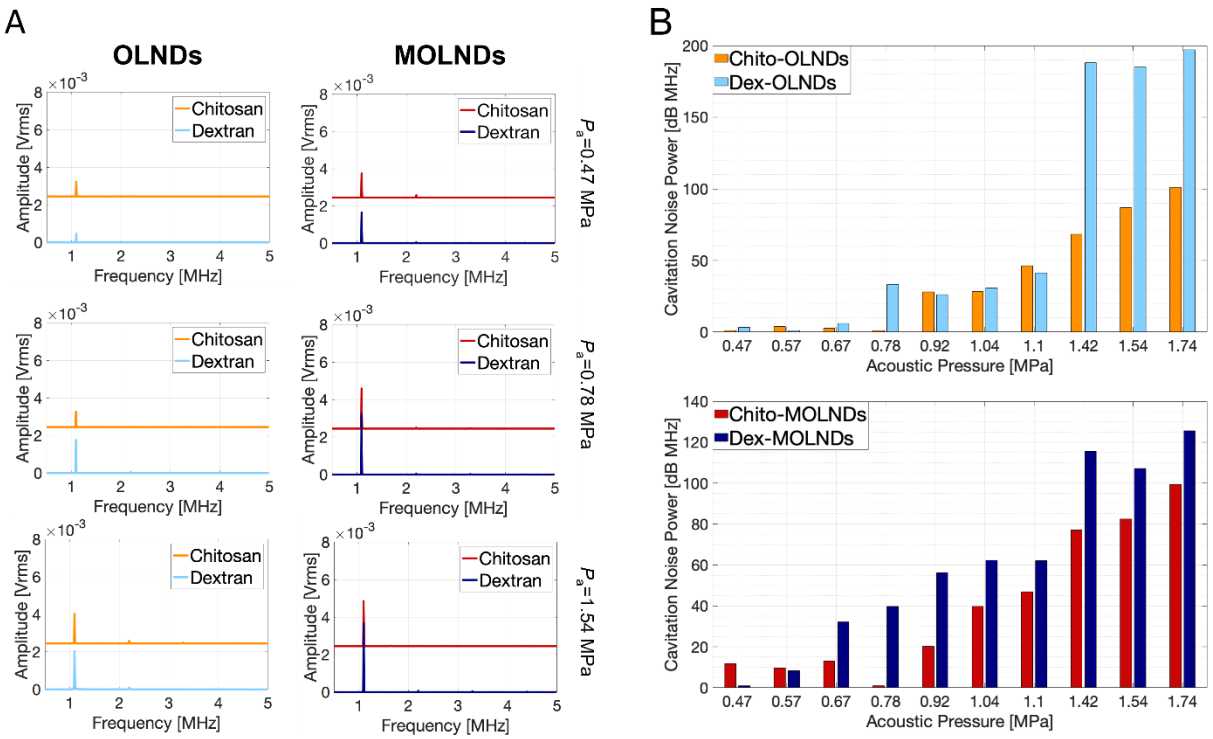

Figure S1. (A) FTT spectra of PFP-core OLNDs and MOLNDs with chitosan and dextran coating, measured at three acoustic pressures (0.47, 0.78 and 1.54 MPa). (B) Cavitation Noise Power (CNP) values evaluated in the acoustic pressure range 0.47–1.74 MPa for PFP-core nanodroplets: comparison between OLNDs (top) and MOLNDs (bottom). The reported results are based on the average of three acquired values.

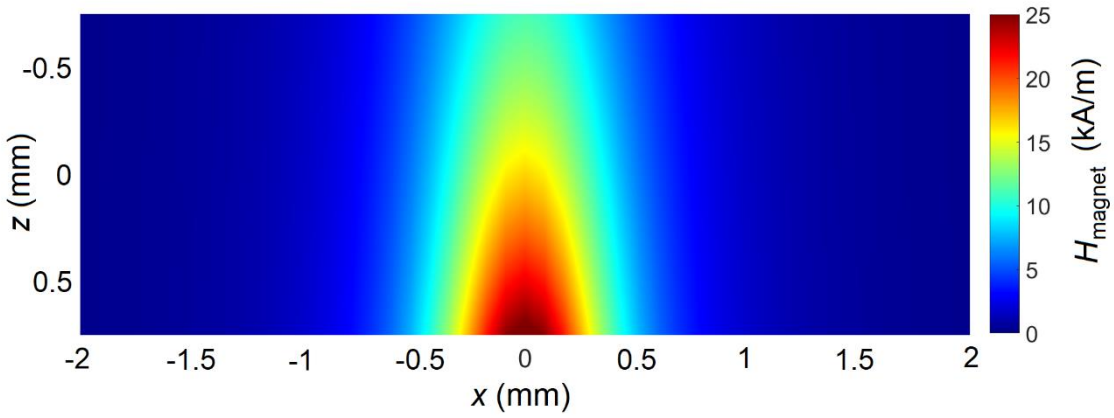

Figure S2. Spatial distribution of the amplitude of the magnetic field produced by the permanent magnet in the *xz*-plane. The magnet is assumed to be uniformly magnetized along the out-of-plane direction, with a magnetization of 715 kA m^{-1}. The magnetization value was chosen to guarantee a good agreement between simulation and magnetic field measurement results obtained with a Hall probe.

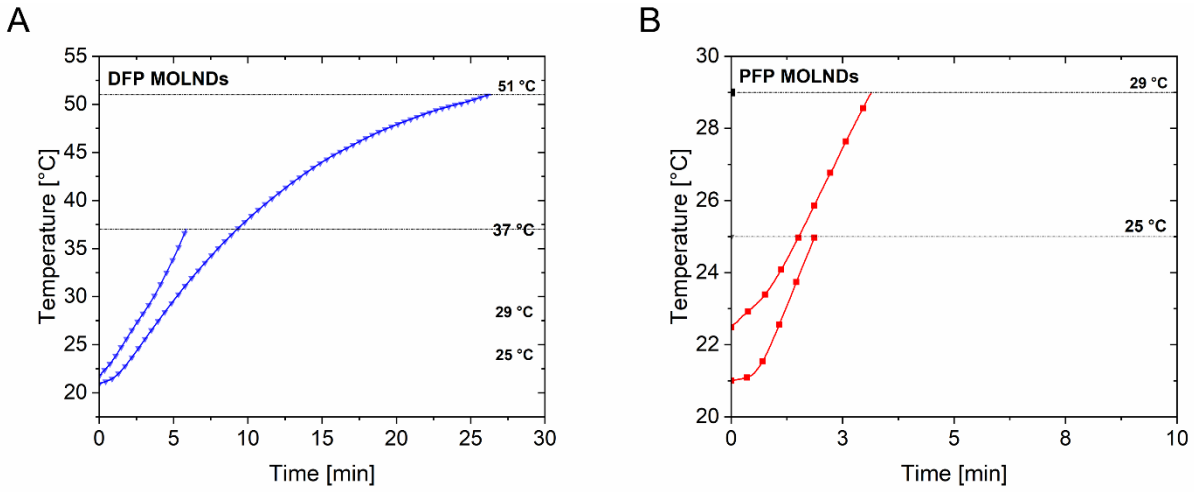

Figure S3. Heating curves of chitosan-coated MOLNDs with (A) DFP- and (B) PFP-core.

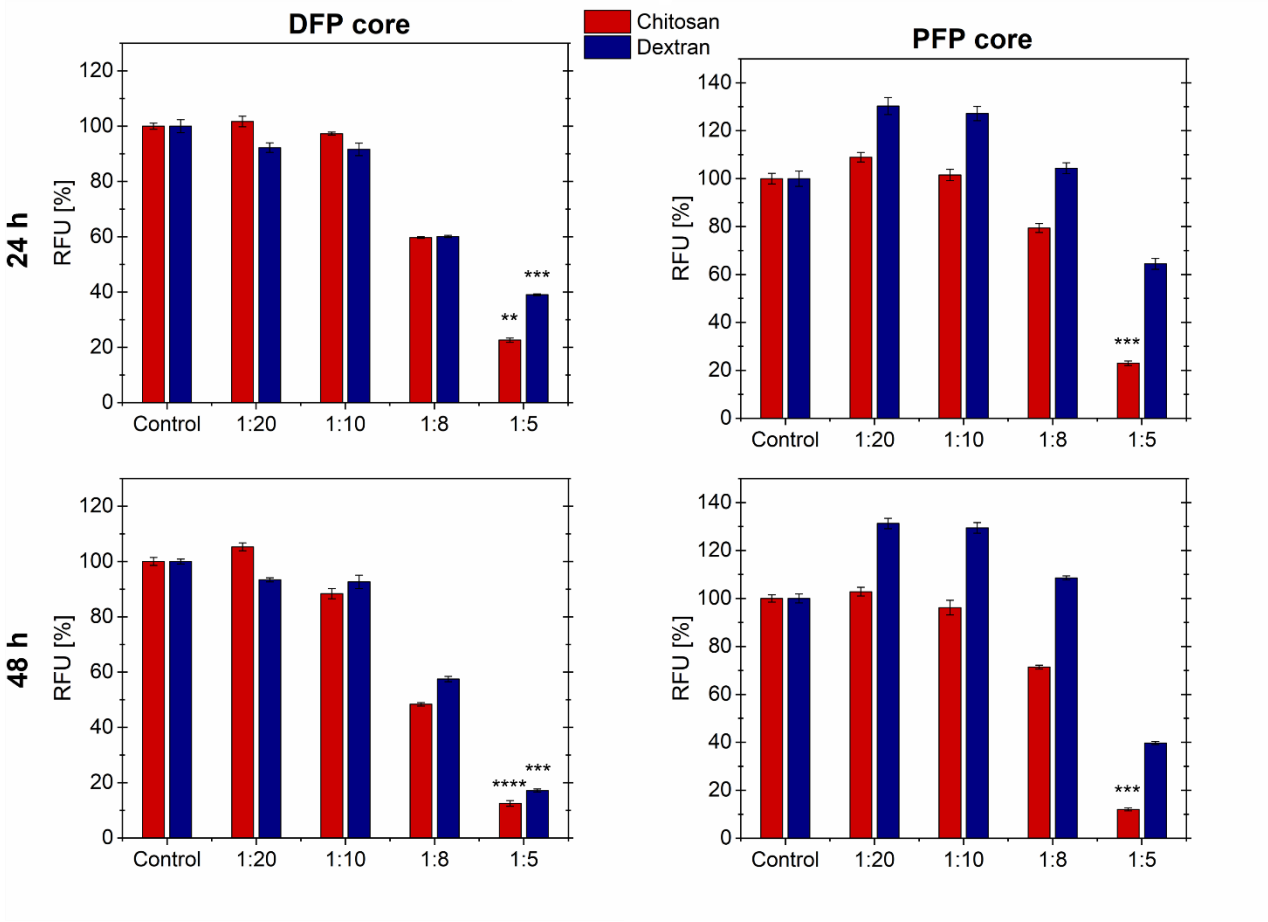

Figure S4. Cell viability assessment (% RFU) on A549 cell culture after 24- and 48-hour incubation with MOLNDs using resazurin assay. Control refers to cells without MOLND treatment, while other cell samples were treated with four different dilutions of MOLNDs (1:20, 1:10, 1:8, and 1:5) in the culture medium. The reported data are normalized with respect to the control, which is considered as 100%. RFU data are indicated as mean ± SD (biological replicate n° = 3). All the analyses with a $P < 0.05$ were indicated as statistically significant (*$p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; **** $p \leq 0.0001$).