Supplementary materials

Nylon-6-Coated Doxorubicin-loaded Magnetic Nanoparticles and Nanocapsules for Cancer Treatment

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Cytotoxicity Assay

Tumor cell lines A549 and HEK 293FT were cultured in DMEM supplemented with 10% FBS, penicillin (100 units/mL), and streptomycin (100 μg/mL) in a humidified at 37.0 ± 1.0 °C, 5.0 ± 0.5 % CO_2 incubator in a humid atmosphere. Briefly, exponentially growing cells were plated in a 96-well plate (2×10^3 ± 0.5×10^3 cells per well). After overnight incubation, the cells were treated with media containing MNCs or NCs and incubated for 72 h at 37.0 ± 1.0°C in an atmosphere of 5.0 ± 0.5 % CO_2. The inhibition of cell proliferation was determined using a colorimetric assay based on the cleavage of MTT by mitochondrial dehydrogenases in viable cells, leading to a blue precipitate of formazan formation. Briefly, a 200 μL aliquot of MTT solution (0.25 mg/mL in DMEM) was added to each well, and the plates were incubated at 37 °C for 3 h. The medium was removed, and the formazan crystals were dissolved in 0.1 mL DMSO. The absorbance at 570 nm (peak) and 620 nm (baseline) was read using a microplate reader Multiscan EX (Thermo Electron Corporation, Waltham, MA, USA). Results were expressed as a percentage of the control values. All values in the present study are given as the mean ± standard deviation (SD) values, and all measurements were repeated not less than three times.

Figure S1. Scheme of the qualitative reaction of the nylon determination in MNP_OA_Ny (left) and MNP_OA (right) with N-(2- hydroxyethyl)-phenazinium ion. The reaction product is colored blue-violet in the presence of nylon (with an amino group). The initial MNP_OA was used as a control.

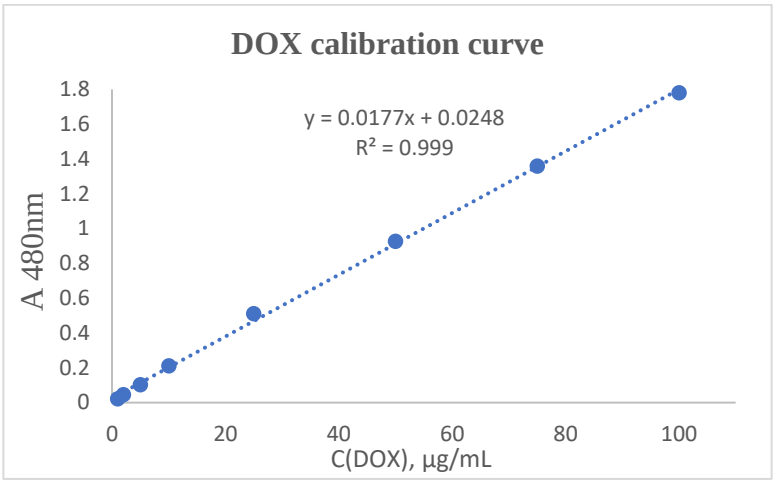

Figure S2. Doxorubicin calibration curve for concentration calculation for adsorption or release studies by UV-vis. spectroscopy (λ = 480 nm).

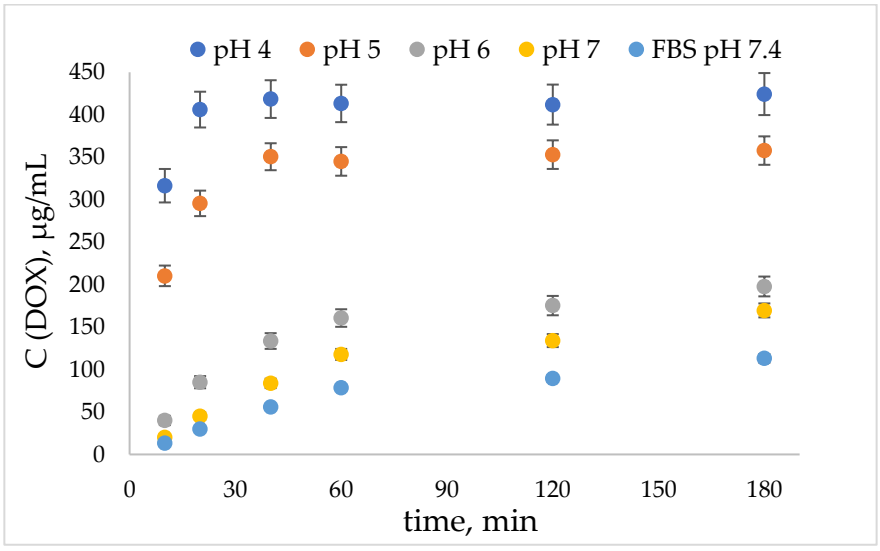

Figure S3. DOX-loaded NC2 time-dependent drug release at various pH.

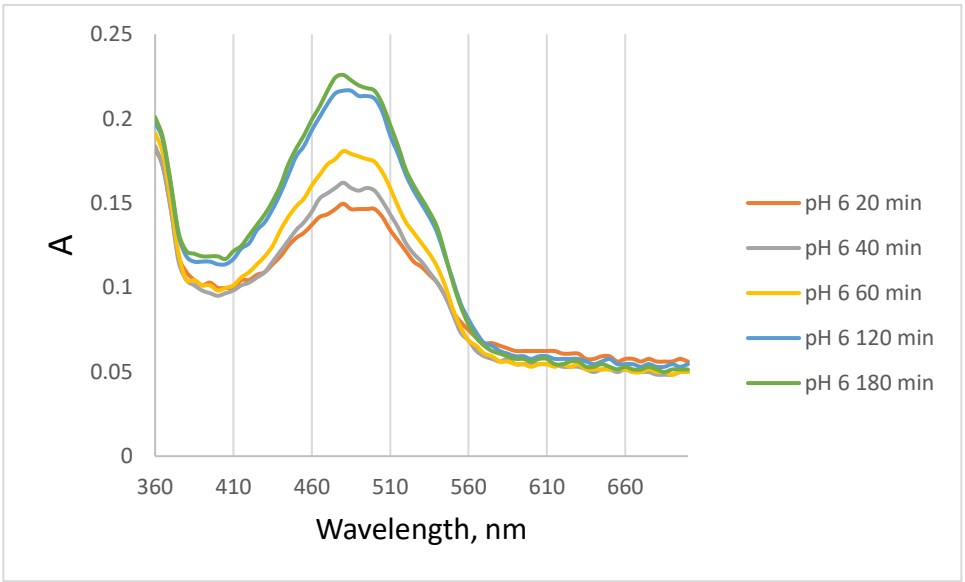

Figure S4. UV-vis spectra of aliquots in DOX-loaded NC2 time-dependent drug release experiment at pH 6.