Supporting Information

Hybrid Alginate@TiO2 Porous Microcapsules as a Reservoir of Animal Cells for Cell Therapy

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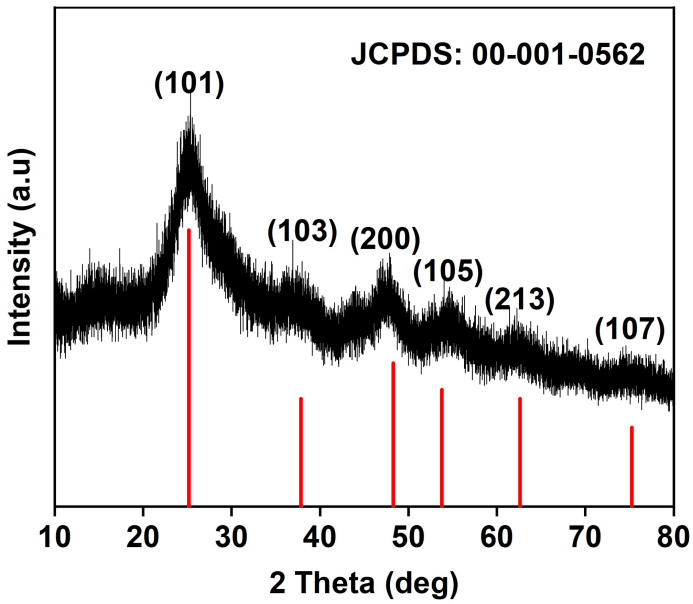

Figure S1. XRD pattern of the TiO_2. XRD pattern of the TiO_2 synthesized by PDDAC-induced hydrolysis and condensation of TiBALDH.

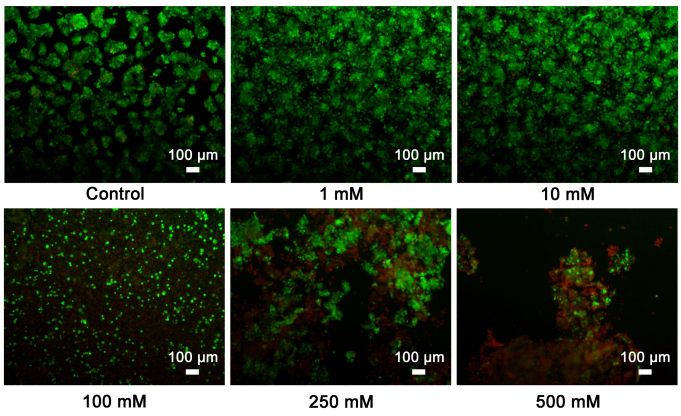

Figure S2. Cytotoxicity of TiBALDH on HepG2 cells after 24 hours of incubation. Fluorescent micrographs of the cytotoxicity kit stained HepG2 cells after incubated in the TiBALDH solution with different concentrations. "Control" represents the blank experimental group in which cells are incubated without the TiBALDH. Green fluorescent cells are alive, while red fluorescent ones are dead.

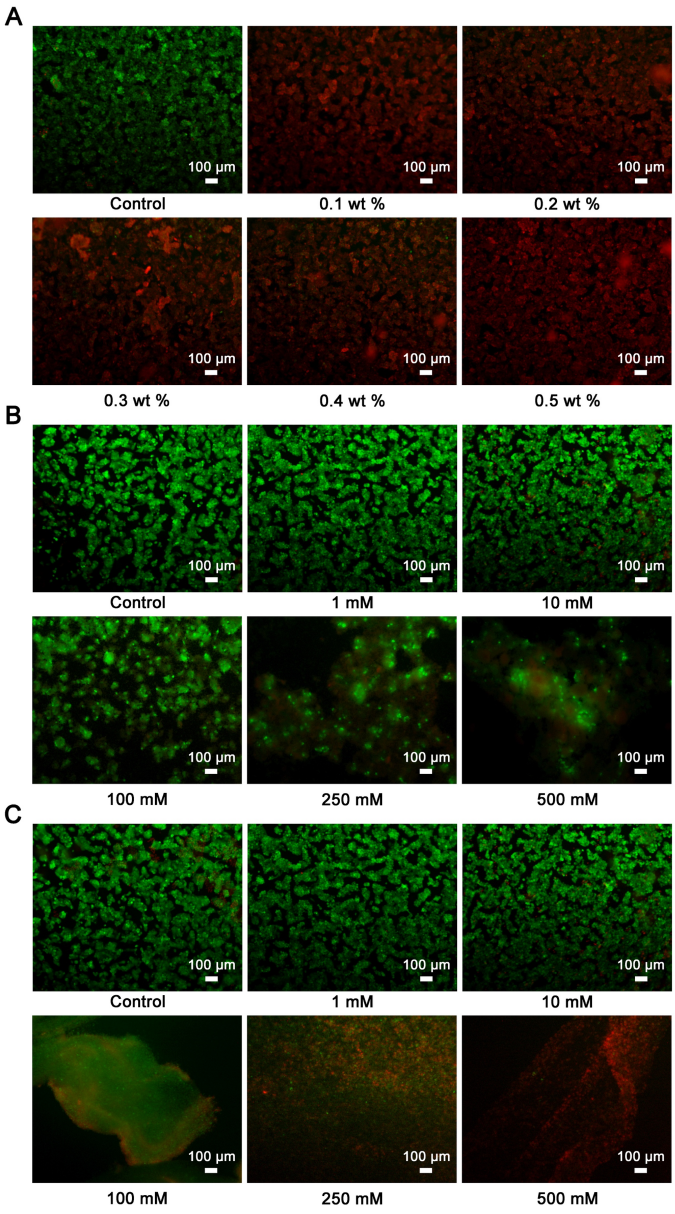

Figure S3. Cytotoxicity of PDDAC, TiO_2 nanoparticles and ammonium lactate on HepG2 cells after 5 hours of incubation. A) Fluorescent micrographs of the cytotoxicity kit stained HepG2 cells after incubated in the PDDAC solution with different concentrations. B) Fluorescent micrographs of the cytotoxicity kit stained HepG2 cells after incubated in the TiO_2 suspension with different concentrations. C) Fluorescent micrographs of the cytotoxicity kit stained HepG2 cells after incubated in the ammonium lactate solution with different concentrations. "Control" represents the blank experimental group in which cells are incubated without the PDDAC, TiO2 nanoparticles and ammonium lactate. Green fluorescent cells are alive, while red fluorescent ones are dead.

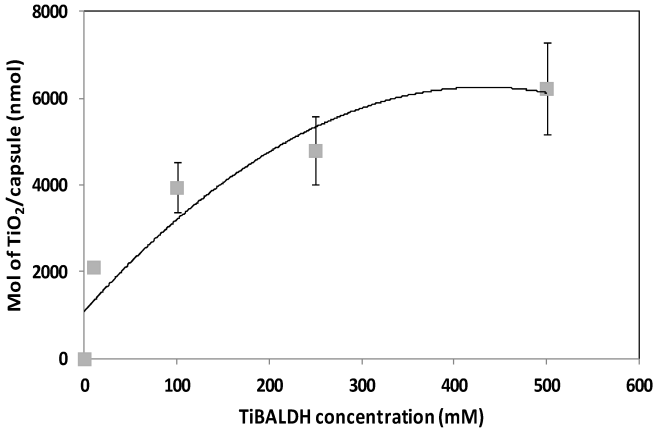

Figure S4. Chemical kinetics of the synthesis of titania in the formation of hybrid microcapsules. Titration of the titania in alginate@TiO_2 microcapsules by the 5-chlorosalicylic acid assay. The microcapsules were prepared as described in the experimental section and washed (3*5 minutes in PBS) prior the analysis. Results are expressed as means ± standard deviations for three independent measurements (n=3).

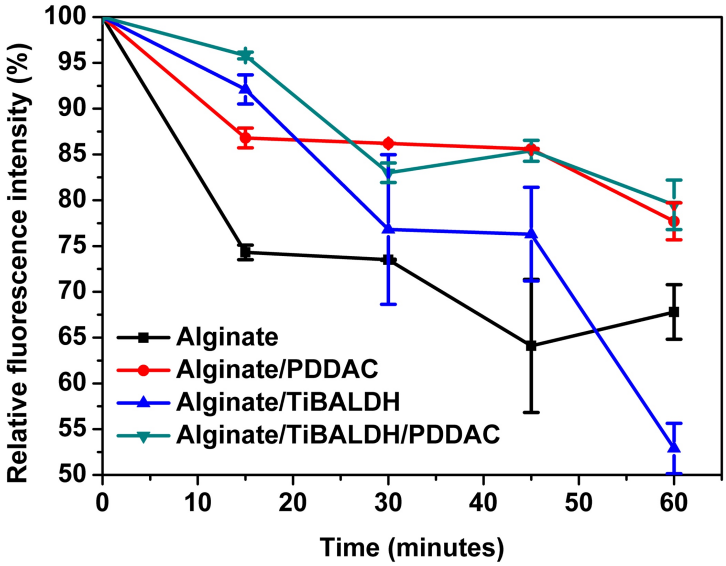

Figure S5. Mass diffusion of the microcapsules with different compositions. Study of the diffusion of fluorescent probes (dextran-FITC 250 kDa) into pure alginate, alginate/PDDAC, alginate/TiBALDH, and alginate/TiBALDH (250 mM)/PDDAC (hybrid alginate@TiO2) microcapsules. 100% corresponds to the fluorescence intensity of the solution without microcapsules. The hydrodynamic radius of molecules allows the estimation of the MWCO: 22 nm for the dextran-FITC 250 kDa. Results are expressed as means ± standard deviations for three independent measurements (n=3).