



Figure S2 Apoptosis assay of HT-29 cells using FITC Annexin V/7-AAD double staining. HT-29 cells (3×10^5 cells/well) were seeded onto 6-well plates and followed the same method for the treatment in the in vitro cytotoxicity study which were incubated with and without the treatment of U@MSC and U@MSC@MP NPs (20 $\mu\text{g/mL}$ as Ce6) in a cell culture medium at 37 °C for 24 h with laser (30 min post-treatment-incubation; 1 W/cm²; 10 min; laser - the bottom of the plate distance = 2.5 cm) and without laser. Cell death mechanisms of the NPs treatment were determined with a FITC Annexin V Apoptosis Detection Kit with 7-AAD according to manufacturer's instructions. The cells were defined as live cells (FITC Annexin V–/7-AAD–), early apoptosis (FITC Annexin V+/7-AAD–), and late apoptosis/necrosis (FITC Annexin V+/ 7-AAD+).