

Supporting Information

Graphene Oxide Based Smart Drug Delivery System for Tumor Mitochondria-Targeting Photodynamic Therapy

Yanchun Wei, Feifan Zhou, Da Zhang, Qun Chen*, and Da Xing *

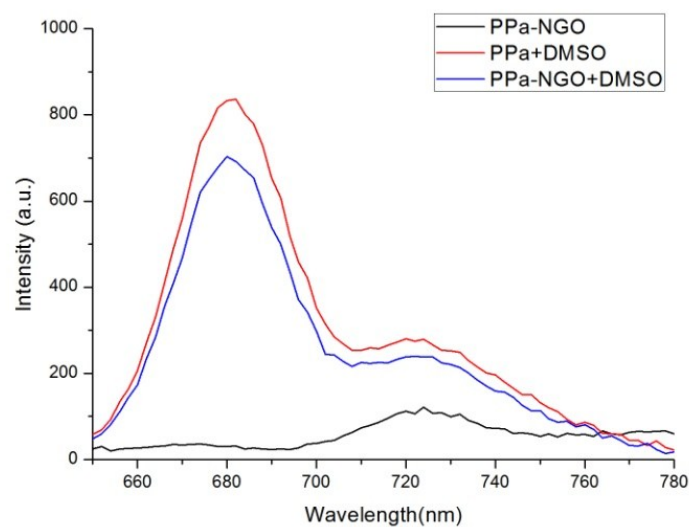


Figure S1. The fluorescence spectra of PPa in 10% DMSO water solution, PPa-NGO in water solution with and without 10% DMSO (b).

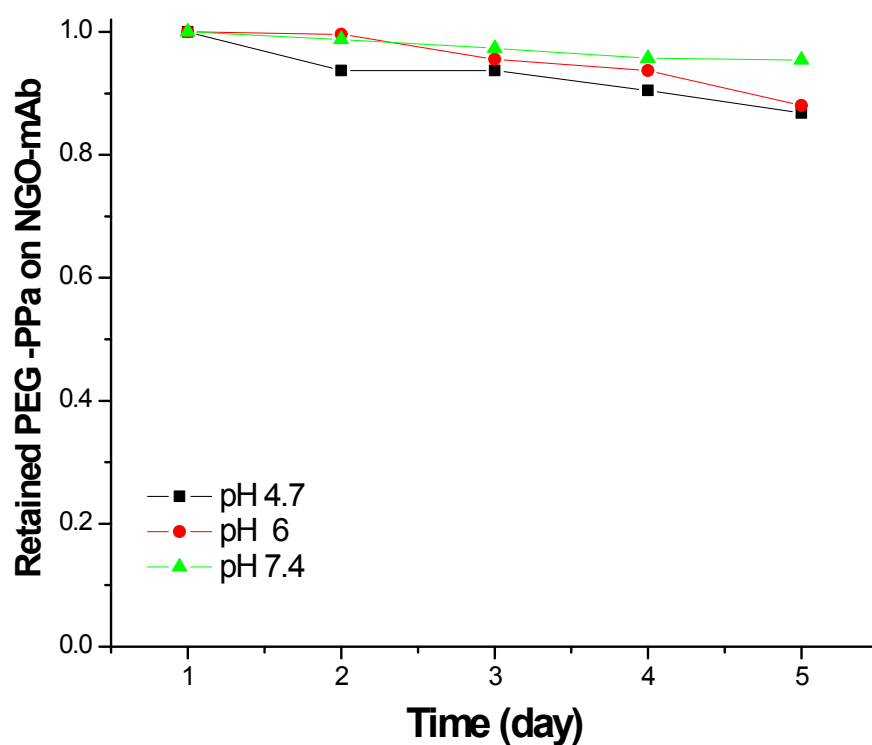


Figure S2. The release profile of PEG-PPa from NGO-mAb in PBS buffers at pH 4.5, 6.0 and 7.4. pH stability of the PPa-NGO-mAb (0.25 mg/mL) was tested with a fluorescence spectrophotometer at pH values of 4.5, 6.0 and 7.4 for five days.

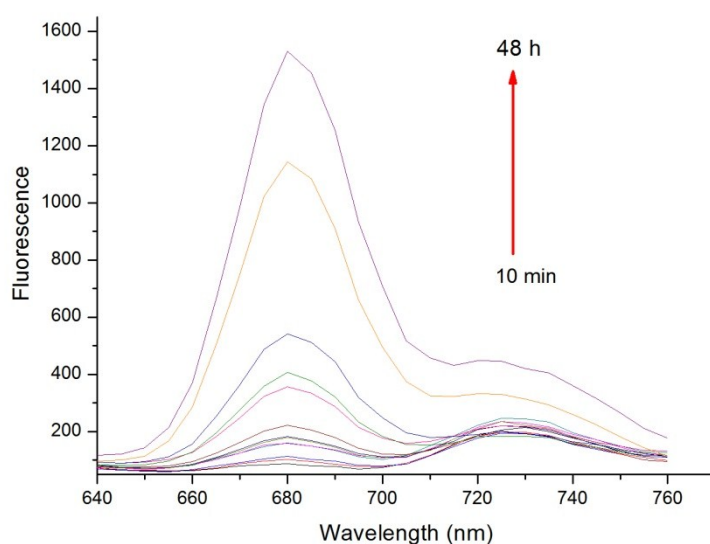


Figure S3. The fluorescence spectra of PPa at different times. PPa ($2 \mu\text{g mL}^{-1}$) was dissolve in 100% fetal bovine serum solution and stored at 37°C in the dark. The fluorescence was detected with a

spectrophotometer at various time from 10 min to 48 h.

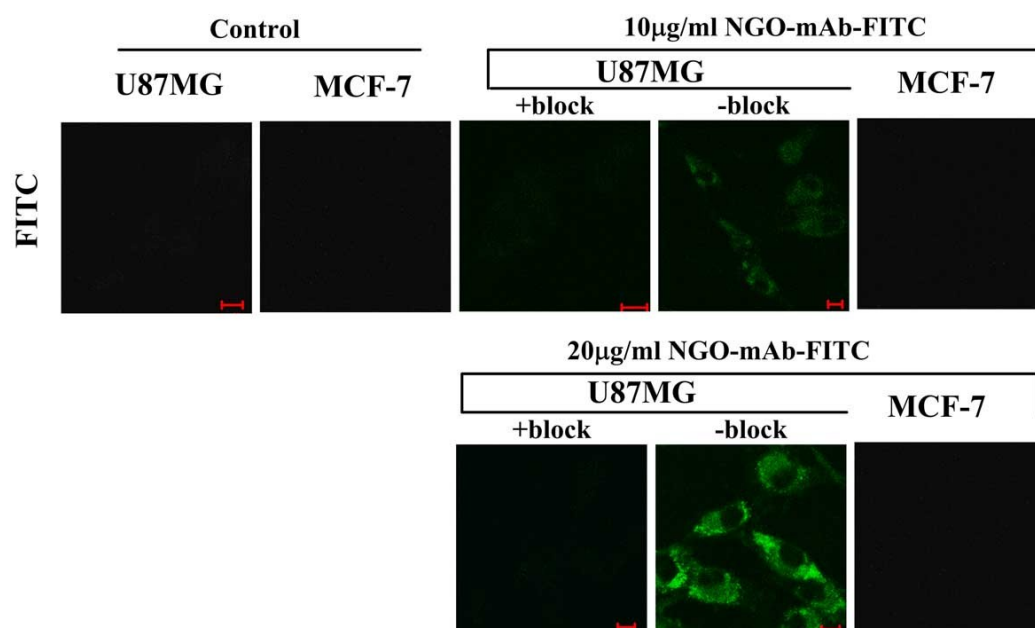


Figure S4. Confocal images of 87-MG and MCF-7 after incubation with NGO-mAb-FITC, with (+) or without (-) integrin $\alpha_v\beta_3$ mAb blocking. Green indicates the presence of FITC labeled NGO-mAb inside the cell. The signal is only observed in U87-MG cells for NGO-mAb-FITC-treated cells. Bar: 10 μ m. Integrin $\alpha_v\beta_3$ monoclonal-antibody (mAb) conjugated with FITC (fluorescein isothiocyanate) (mAb-FITC, 0.2 mg/mL) was added to NGO (1 mg/mL) for a final concentration of 5 mM. Then, N-(3-Dimethylaminopropyl-N'-ethylcarbodiimide) hydrochloride (EDC) (100 mM) and N-hydroxysulphonosuccinimide (NHS) (50 mM) were added to the mixture. After overnight reaction, mAb-FITC was removed by filtration through a 500 kDa filter (Millipore Inc.) with phosphate-buffered saline. The NGO-mAb-FITC concentration in the solution after this process was determined to be 0.5 mg/mL. Human glioblastoma cell line (U87-MG) and breast cancer cell line (MCF-7) cells (1×10^4 /mL) were seeded onto glass cover slips and cultured for 12 h at 37°C in a humidified incubator. Different concentrations of NGO-mAb-FITC (10, 20 μ g/mL) were respectively co-incubated with U87-MG, mAb preblocked U87-MG and MCF-7 cells for 5 h before imaging with a confocal microscope.