Supplementary Information for

ORIGINAL ARITICLE

GLUT1 mediated effective anti-miRNA21 pompon for cancer therapy

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1. Stability test

The nanopompons and nanospheres were placed in PBS 7.4. Size distribution was determined by laser scattering technique after a certain time interval (n=4).

2. Gel permeation chromatography

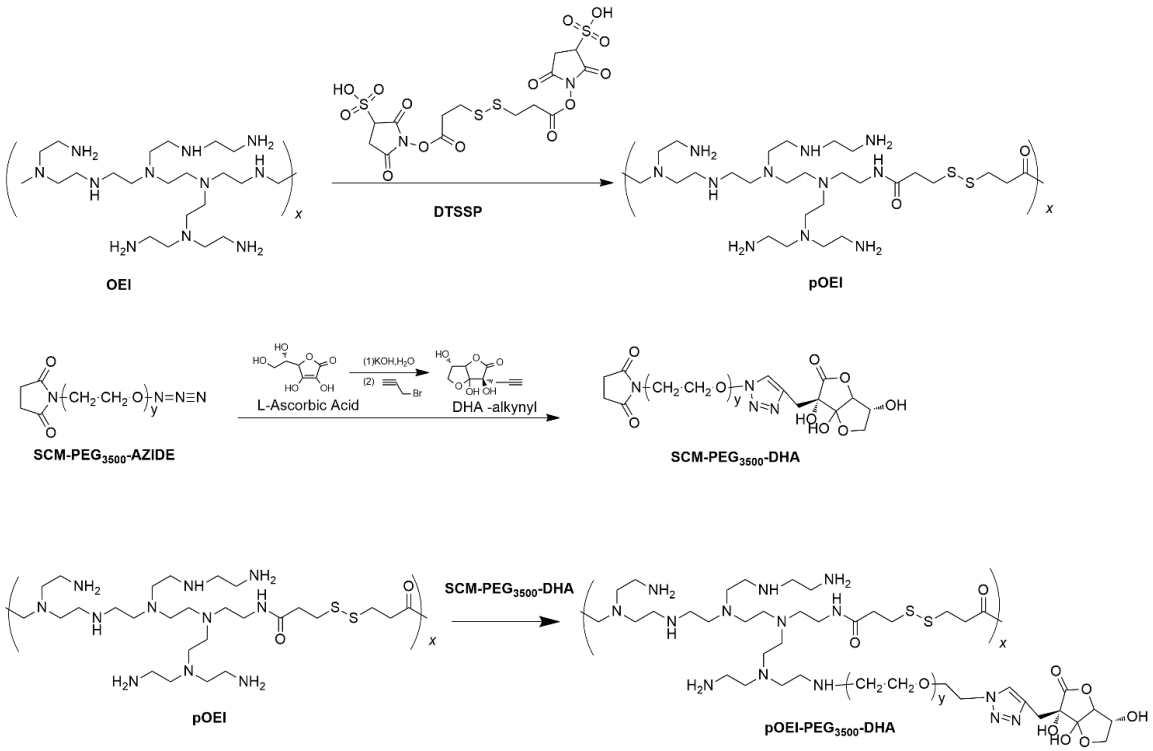
The molecular weight of pOEI and (DHA-)PEG-pOEI were measured by gel permeation chromatography (GPC). Molecular weight of pOEI, PEG-pOEI and DHA-PEG-pOEI were 9.8-, 14.6- and 14.7 kDa, respectively.

3. Acridine orange (AO) staining

MB–MDA–231 cells were planked in a density of 3×10^3 cells/well to glass-bottomed confocal dishes. After 24 h, nanopompons or DHA-nanopompons (5 μg RNA/hole) were added into complete medium, respectively. Rapamycin was added at a final concentration of 50 nmol/L at the same time as a positive control. After incubation for 24 h, cells were stained with 1 μmol/L AO for 10 min at 37 ℃, then washed with Hank's solution for 3 times. The cells were observed with confocal laser scanning microscopy (CLSM, Carl Zeiss LSM710, Wetzlar, Germany) with emission at 530 nm and 640 nm (excitation at 488 nm).

4. Immunohistological staining study

To further evaluate the biosafety of nanoparticless, TNBC models of different groups were sacrificed on day 18 and the main organs were harvested and fixed in 4% paraformaldehyde and embedded in paraffin. Hematoxylin and eosin (H&E) staining were conducted by Guge Biological Tech., Co., Ltd. (Shanghai, China).



Scheme S1 Synthetic route of DHA-PEG-pOEI.

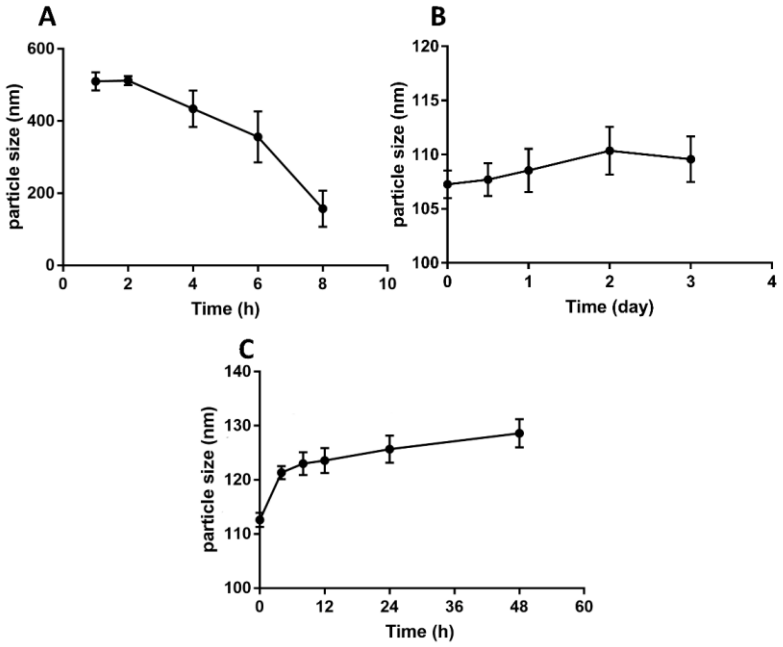


Figure S1 (A) Stability test of anti-miR nanosphere in PBS (pH 7.4); (B) Stability test of anti-miR nanopompon in PBS (pH 7.4); (C) Stability test of anti-miR nanopompon in 10% FBS (pH 7.4).

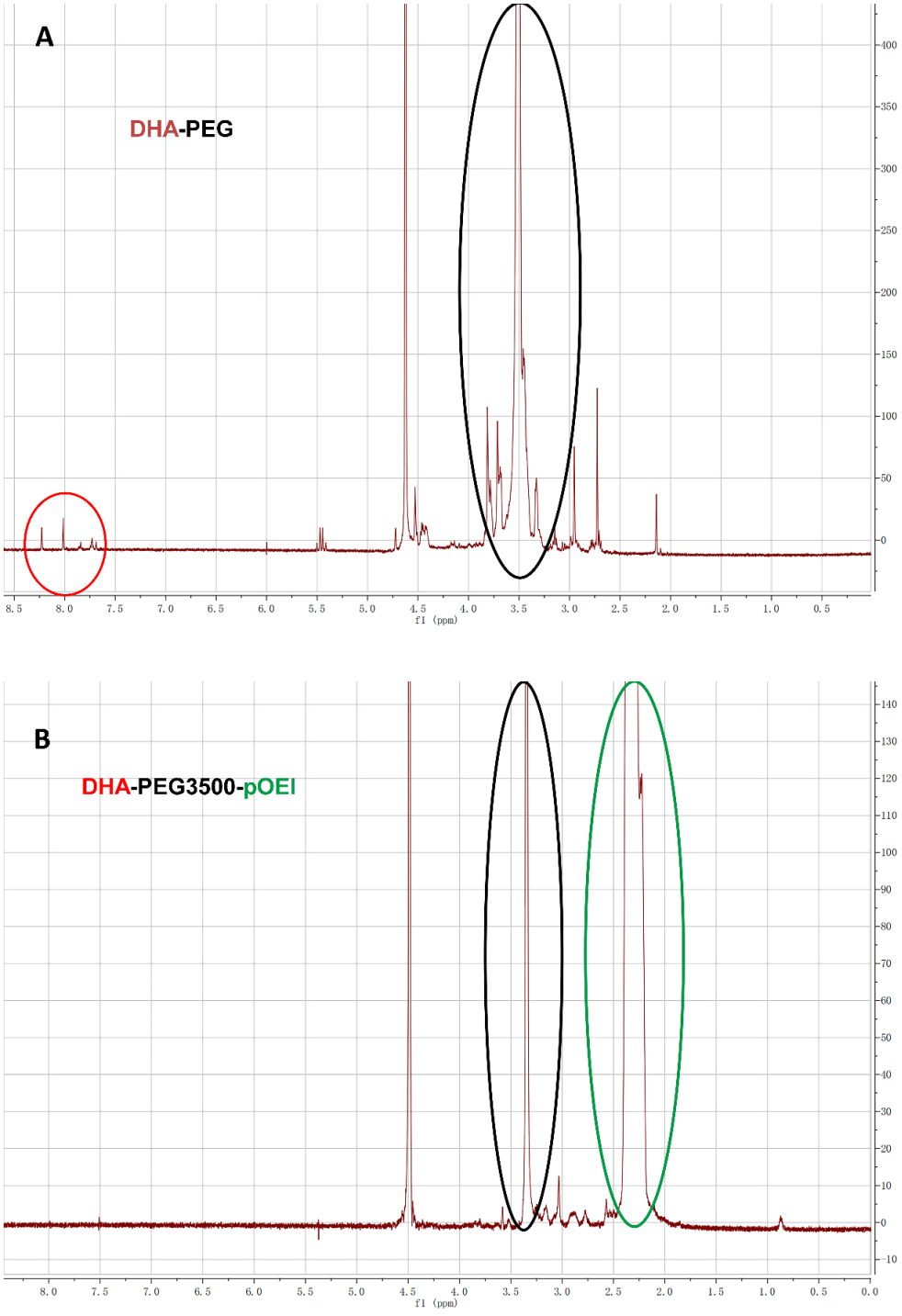


Figure S2 (A) ^{1}H NMR spectrum of DHA-PEG$_{3500}$; (B) ^{1}H NMR spectrum of DHA-PEG$_{3500}$-pOEI.

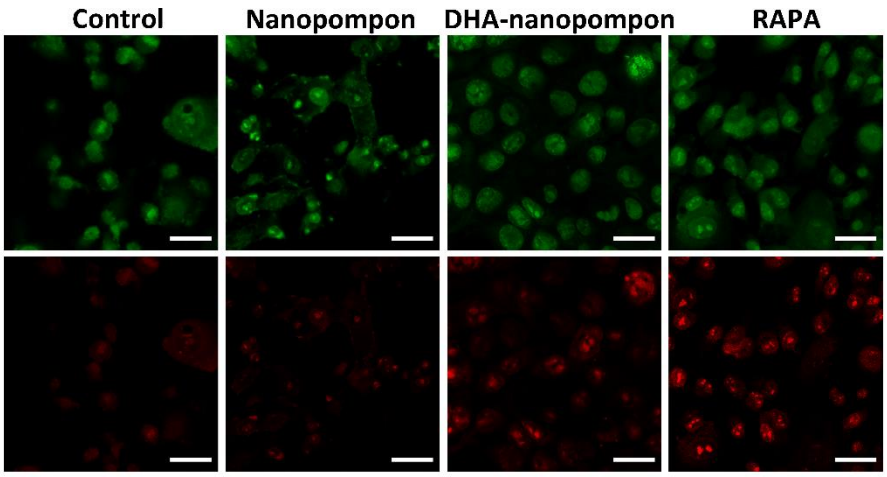


Figure S3 CLSM images of AO-stained MB-MDA-231 cells after incubation with nanopompons, DHA-nanopompons and rapamycin as positive control for 24 h, respectively. Scale bars represent 200 μm.

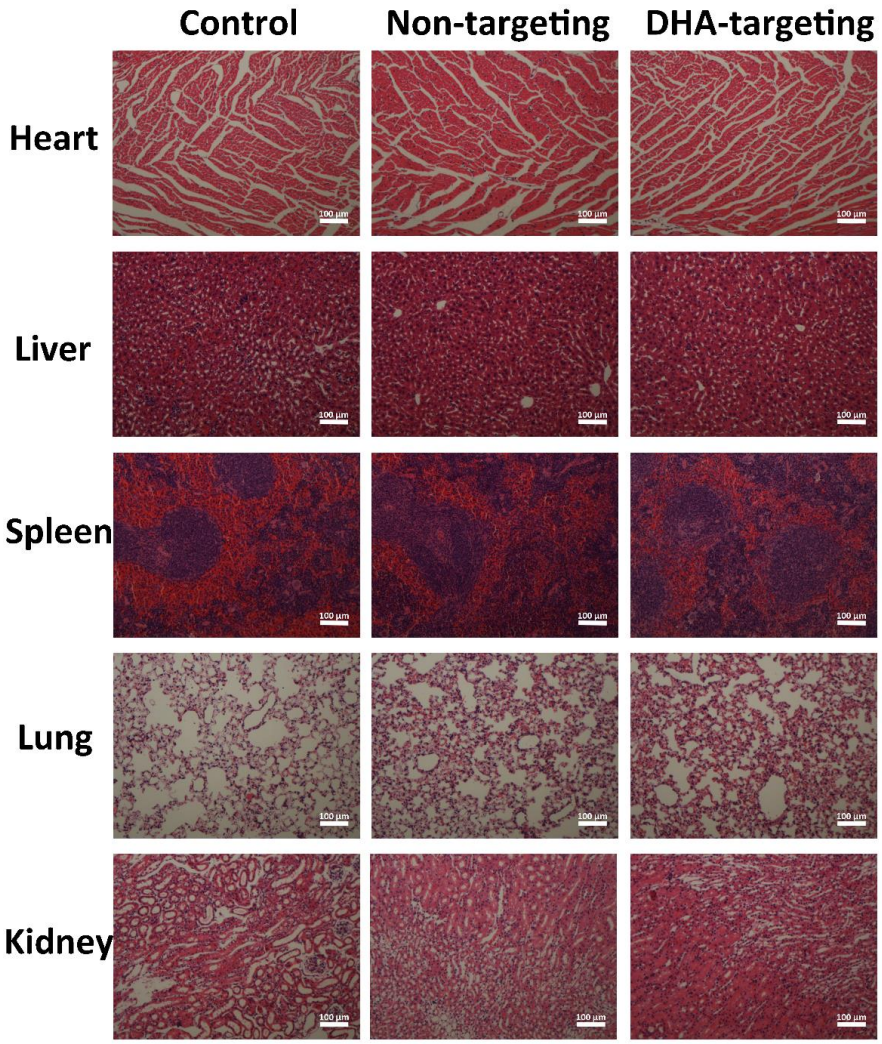


Figure S4 H&E staining of saline (control), non-targetting nanopompons and DHA-targetting nanopompons. Scale bars represent 100 μm.