Electronic Supplementary Material (ESI) for RSC Advances.

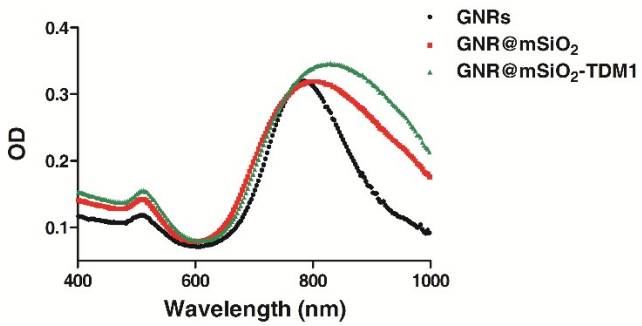

Figure S1. Absorption spectra of GNRs (black,780nm), GNR@mSiO$_2$ (red, 800nm), and GNR@mSiO$_2$-TDM1 (green, 822nm).

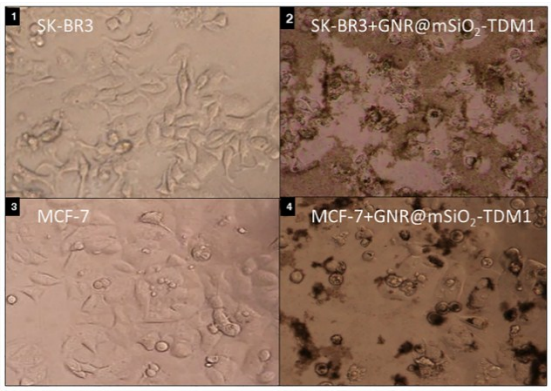

Figure S2. Bright field images showing the targeting effect. (1) Intact SK-BR3 cells. (2) SK-BR3 cells incubated with GNR@mSiO$_2$-TDM1 (3) Intact MCF-7 cells. (4) MCF-7 cells incubated with GNR@mSiO$_2$-TDM1.

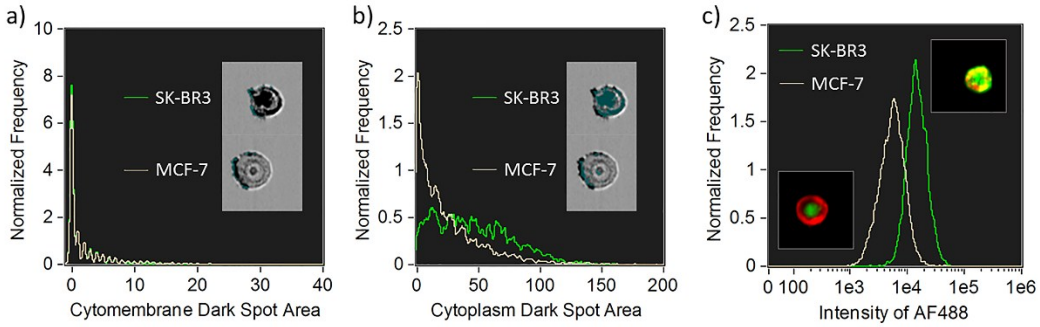

Figure S3. Nanodrug internalization into SK-BR3 and MCF-7 cells after 2 h of incubation. Nanodrug was prestained by Alexa Fluor® 488 Monoclonal Antibody Labeling Kit (A20181, Invitrogen). Experiment was conducted through an imaging flow cytometry and IDEAS software was used to analyze the results. Dark spot areas in both cytomembrane a) and cytoplasm area b) in bright field cell images were analyzed and compared, which showed that more nanodrug attached to SK-BR3 cells (green) rather than MCF-7 cells (light pink). Fluorescence comparison c) was also provided. SK-BR3 cells contains more nanodrug, thus higher AF488 intensity.

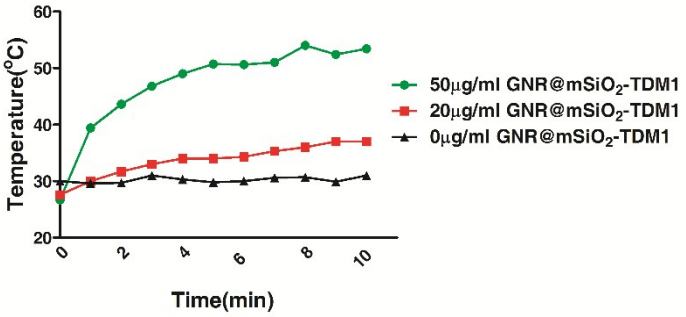

Figure S4. Temperature rise during NIR laser radiation. Cells were incubated with GNR@$mSiO_2$-TDM1 nanodrug in a 6-well plate for 48h, then exposed to laser radiation with power density of 1W/cm^2. Temperature rise was measured by a thermocoupler every minute with a break at 5min. Green line: 50μg/ml GNR@$mSiO_2$-TDM1; red line: 20μg/ml GNR@$mSiO_2$-TDM1; black line: 0μg/ml GNR@$mSiO_2$-TDM1.