Supplementary Information

A Novel Nanodrug for Sensitization of Photothermal Chemotherapy of Breast Cancer in Vitro.

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Table s1, The influence of stabilizer concentration and ultrasound time on DOX encapsulation efficiency.

Concentration of PVA	Ultrasound time	Encapsulation efficiency(DOX)
0.5%	30s	91.4%
1%	30s	82.7%
1%	3min	77.4%
2%	30s	85.9%
2%	3min	70.2%

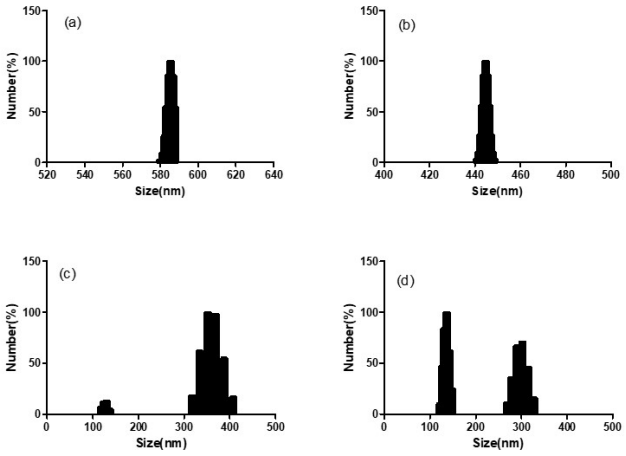


Figure 1. Size distribution of **PLA @DOX /GA / ICG** nano-particles（a）0.5%PVA, ultrasonic dispersion for 30s; (b)1%PVA, ultrasonic dispersion for 30s;(c) 1%PVA,

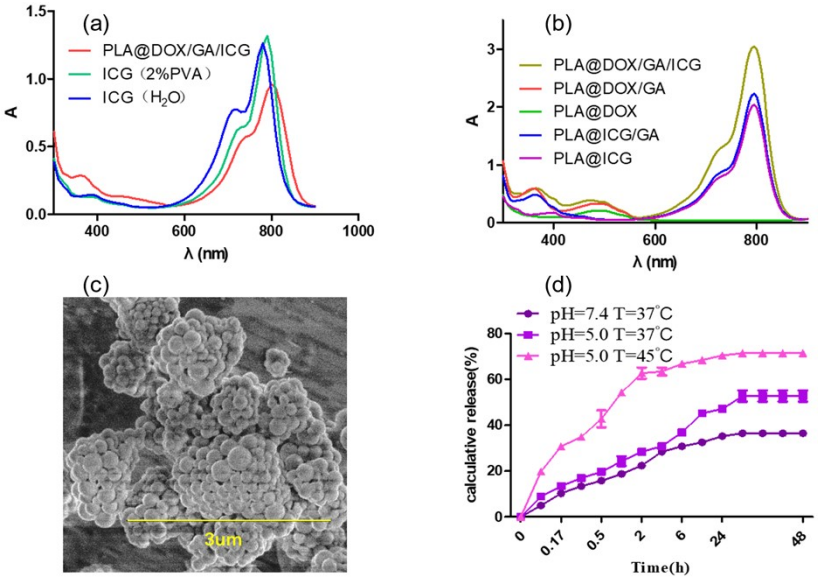


Figure 2. (a)(b) **UV-vis** absorption spectrum of medicine and nanoparticles;(c) **SEM** image of **PLA@DOX/GA/ICG** nanoparticles; (d) DOX release properties of nanodrugs.

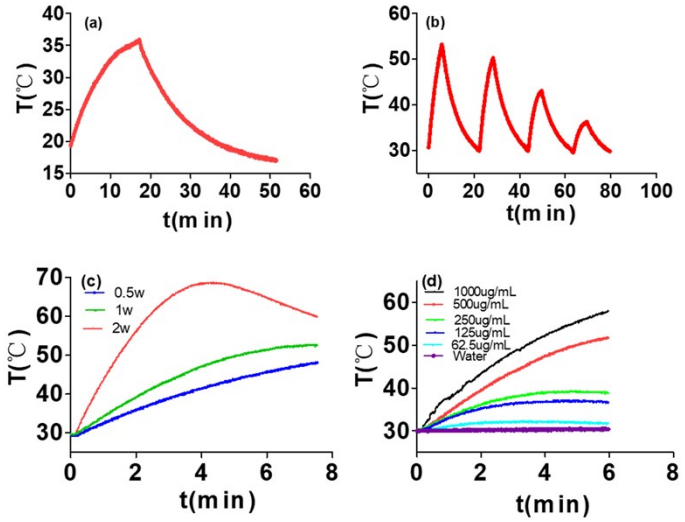


Figure 3. Photothermal performance of PLA@DOX /GA/ICG; (a)，(b) Real-time temperature measurement of PLA@DOX/GA/ICG suspensions (500μg/mL,PLA@ DOX / GA/ICG1mL) under cycle laser irradiation (1w/cm^2) for four cycles. Each cycle consisted of 5min irradiation followed by a cooling phase; (c) Temperature elevation curves of PLA@DOX/GA/ICG suspensions at a concentration of 500μg/mL, exposed to an 808nm laser at various power densities;(d) Temperature elevation curves of PLA@DOX/GA/ICG suspensions at various

concentration exposed to 1w/cm^2.

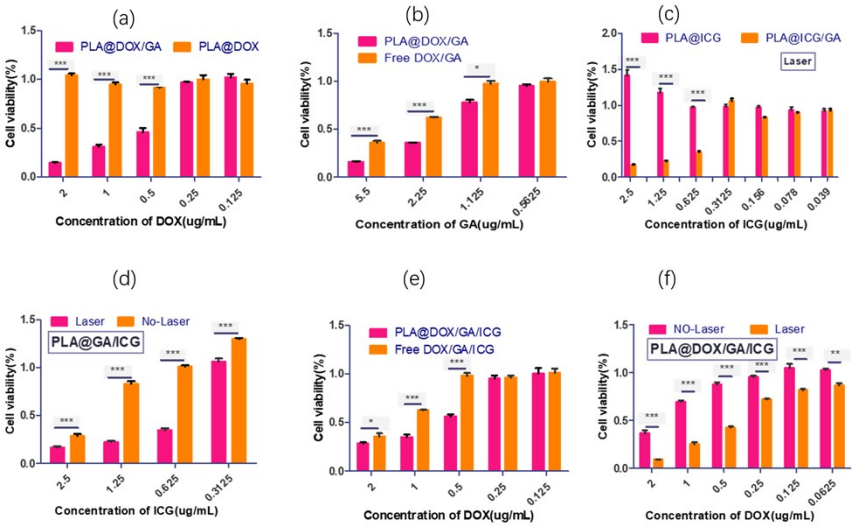


Figure 4. Viability of 4T1 cells incubated with the nanoparticles or free DOX/GA/ICG at different concentrations with and without NIR irradiation at 1w/cm^2.Data are mean ± SD（n= 5, * p< 0.05, ** p< 0.01, *** p< 0.001)

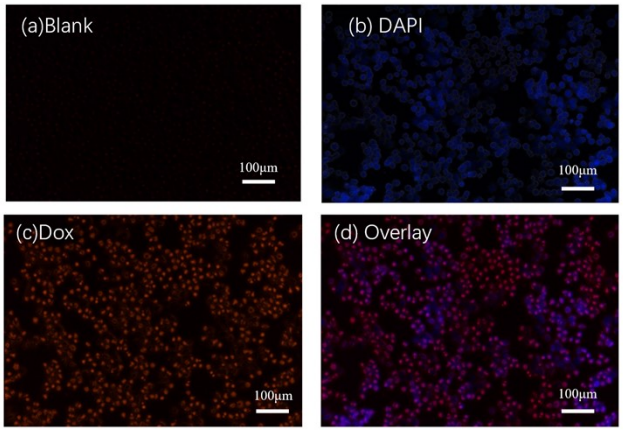


Figure 5. Inverted fluorescence microscopy images of 4 T1 cells after the treatment with PLA@DOX/GA/ICG and DAPI. **(a)** Blank; **(b)** DAPI channel; **(c)**Dox channel;**(d)** Overlay.

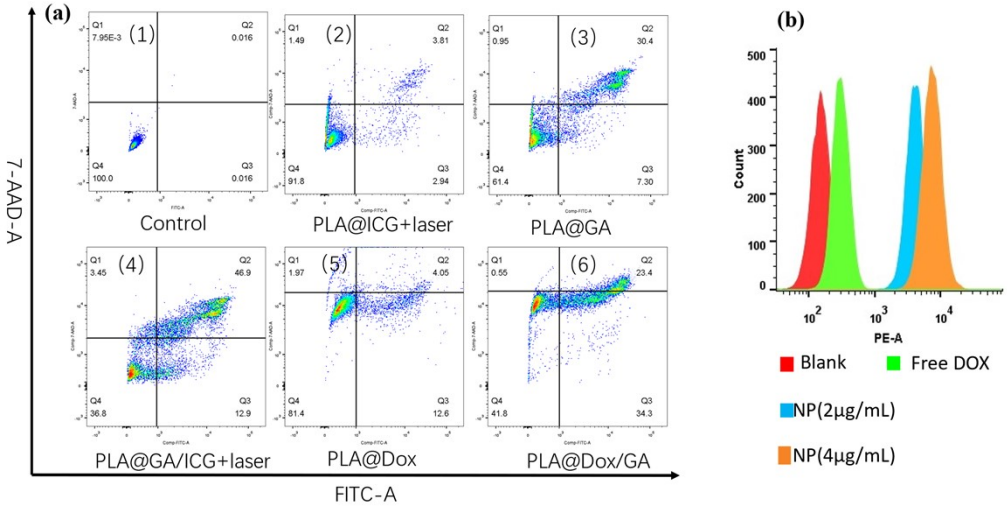
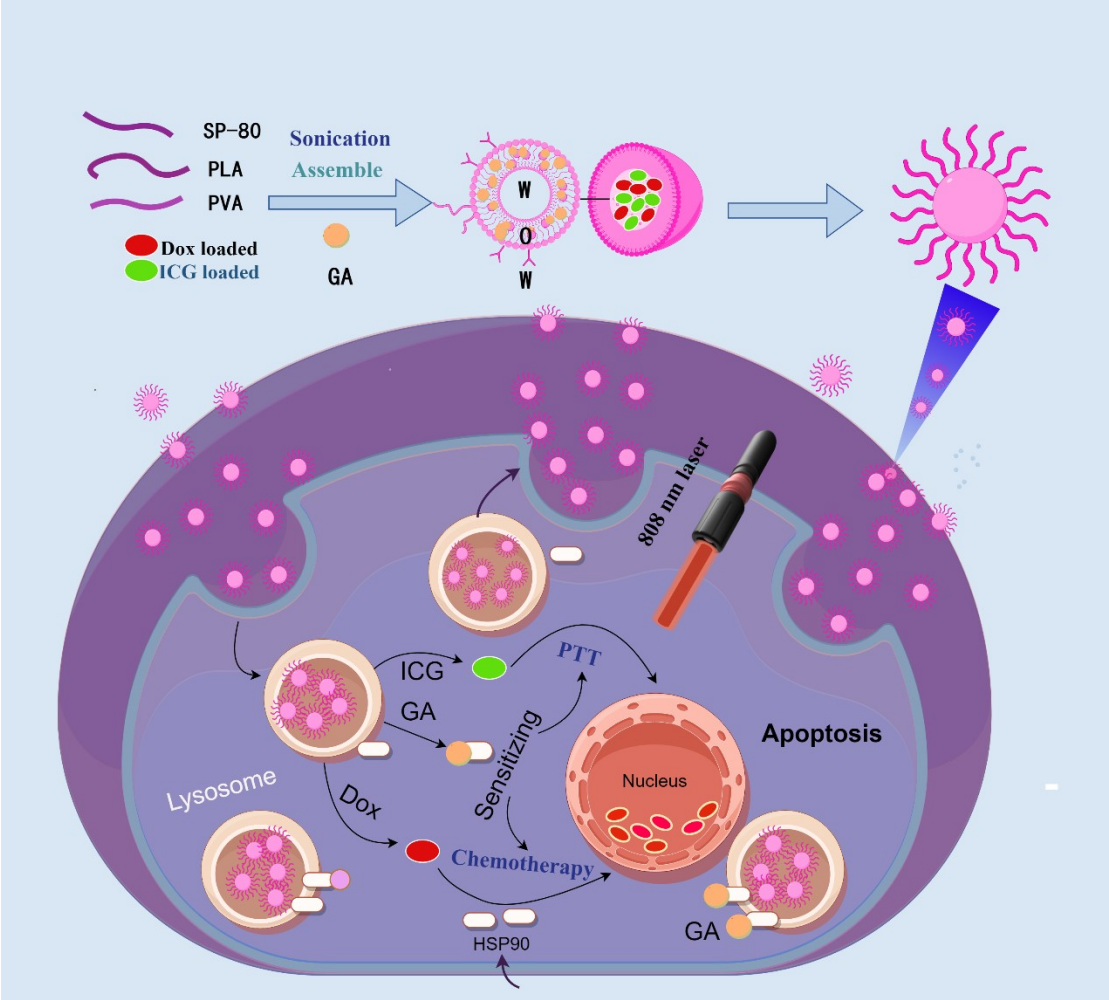


Figure 6. (a) Flow cytometry analysis of 4T1 cell apoptosis induced by different nanoparticles with or without irradiation through Annexin V-FITC/7-AAD staining. (1)Control group; (2)PLA@ICG+Laser; (3)PLA@GA; (4)PLA@GA/ICG+Laser; (5)PLA@DOX; (6)PLA@DOX/GA. Bottom right quadrant: early apoptosis; top right quadrant: late apoptosis. **(b)** Flow cytometry for the investigation of cellular uptake to PLA@DOX/GA/ICG



Scheme 1. Schematic illustration of preparation of PLA@GA /DOX/ICG and action diagram to cancer cell. (By Figdraw)