Supporting information

Near infrared-emitting persistent luminescence nanoparticles@macrophage as cell-based carrier for precisely imaging-guided cancer cell ablation

Hua Wang[1], Jie Zhang [2 †], Bin Zheng[3], Zirui Yang[1], Jiayi Sun[1], Xiao Liu[4*], Niansong Qian[5*]

[1]School of Pharmaceutical Science and Technology, Tianjin University, Tianjin 300072, China

[2]Key Laboratory of Cellular Physiology at Shanxi Medical University, Ministry of Education, and the Depart-ment of Physiology, Shanxi Medical University, Taiyuan, China.

[3]Academy of Medical Engineering and Translational Medicine, Tianjin Key Laboratory of Brain Science and Neural Engineering, Xincheng Hospital of Tianjin University, Tianjin University, Tianjin 300072, China.

[4]Tianjin Neurological Institute, Tianjin Medical University General Hospital, Tianjin, 300052, China

[5] Department of Respiratory, the Eighth Medical Center of Chinese PLA General Hospital, Beijing 100853, China

[†] These authors contributed equally.

*Corresponding authors.

E-mail addresses: liuxiao1220@hotmail.com (Xiao Liu)

∗Corresponding authors.

E-mail addresses: qianniansong1@163.com (Niansong Qian)

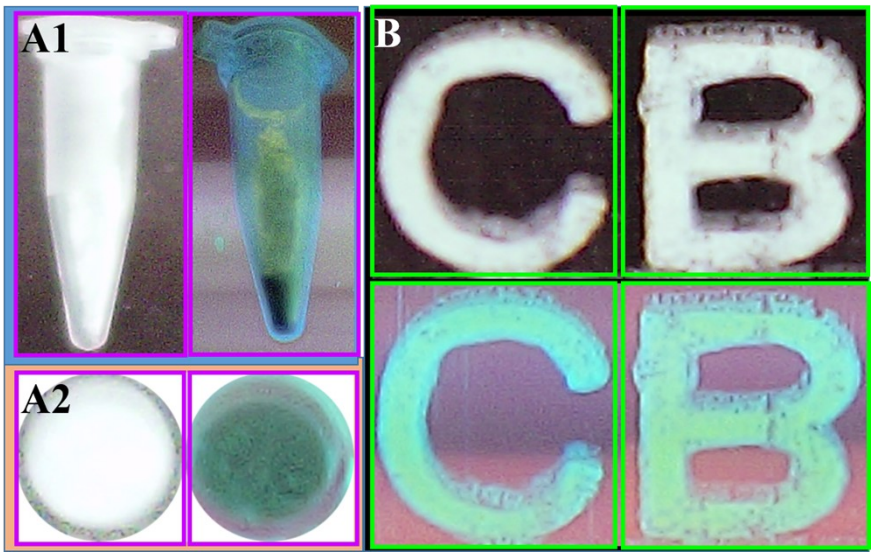

Fig. S1: The images of mZGC captured using an infrared night-vision scope. (A1) The mZGC powder in centrifuge tube; (A2) The mZGC powder in 96-well plate; (B) The mZGC powder sas ink was print on the hard paper to form an image of “CB” letters.

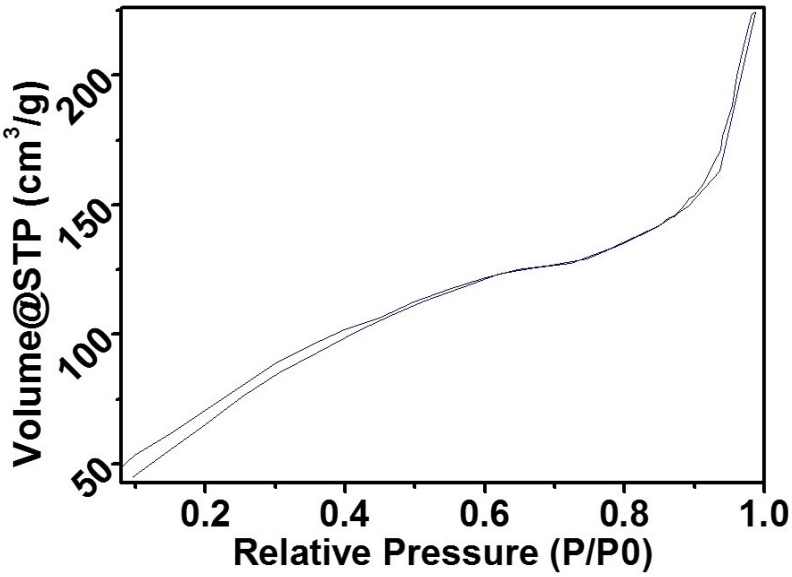

Fig. S2: The N_2 adsorption–desorption isotherms of MSN.

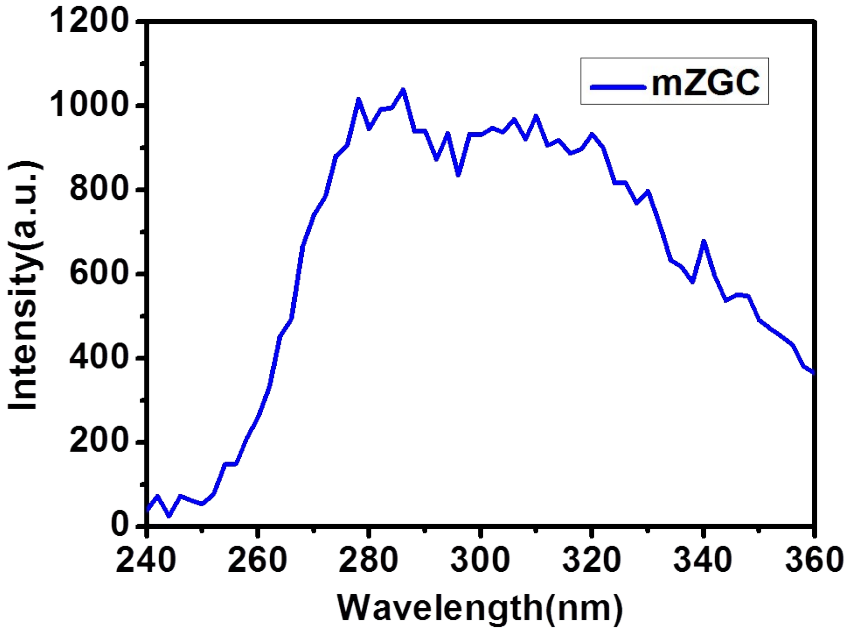

Fig. S3:

The persistent luminescence excitation spectrum of mZGC.

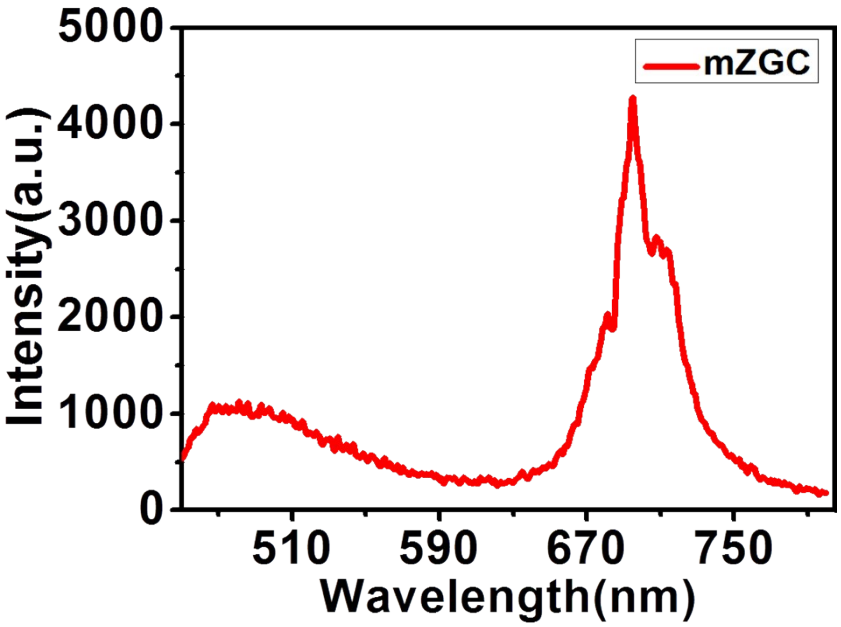

Fig. S4: The persistent luminescence emission spectrum of mZGC.

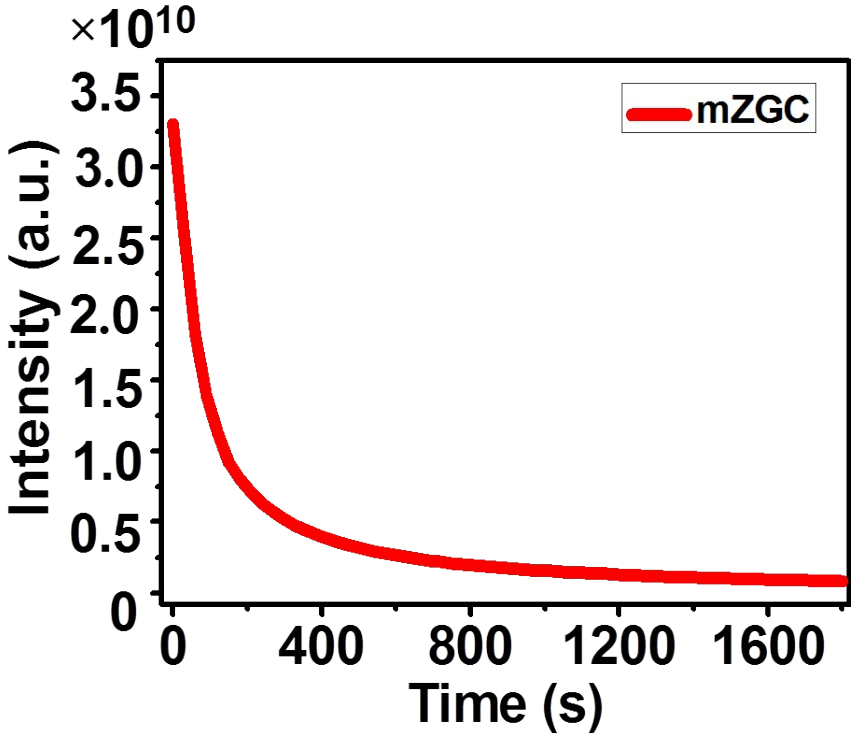

Fig. S5: The persistent luminescence decay curve of mZGC.

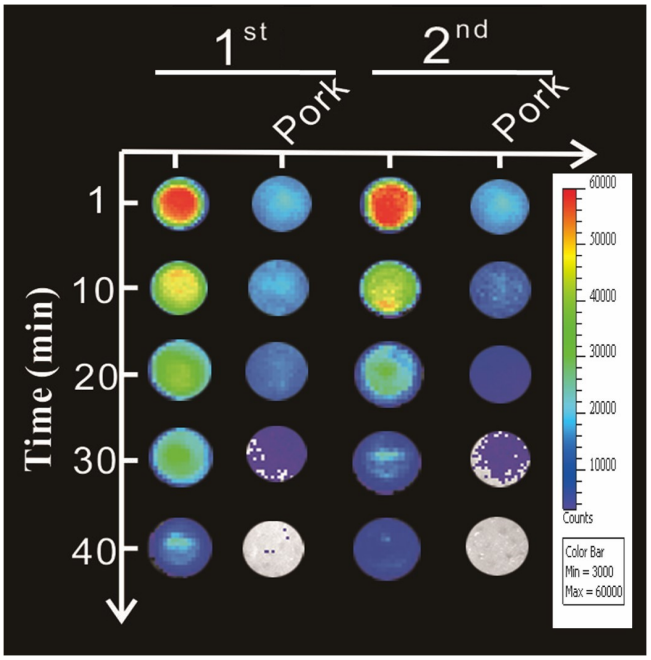

Fig. S6: The NIR-persistent luminescence images of mZGC nanoparticles within 40 min after irradiating with composite light of LED lamp for 10 min. After recharging, there was still intense luminescence and the NIR-persistent luminescence could penetrate 3 mm pork rind.

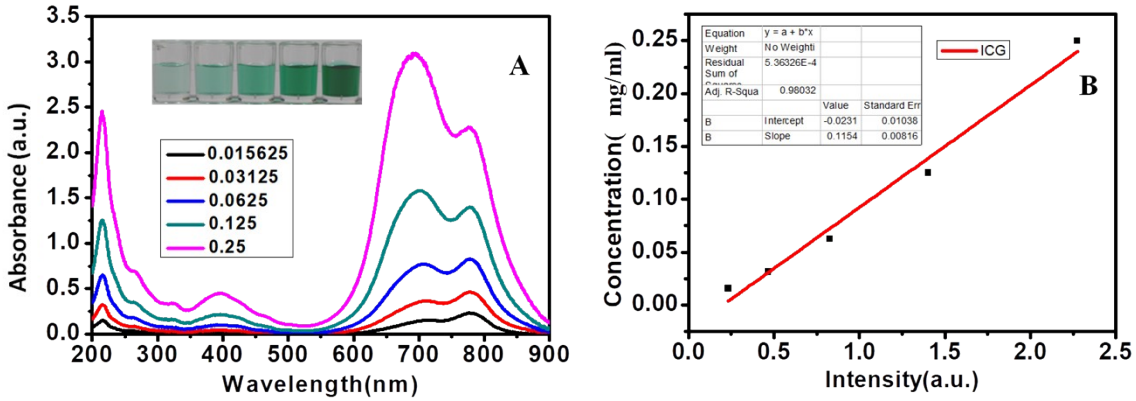

Fig. S7: (A) UV-Vis absorption spectra of pure ICG and (B) concentration standard curve of ICG. The formula of this standard curve was: y=0.1154x-0.0231 (x: the UV-Vis absorption value of ICG; y: the concentraton of ICG).

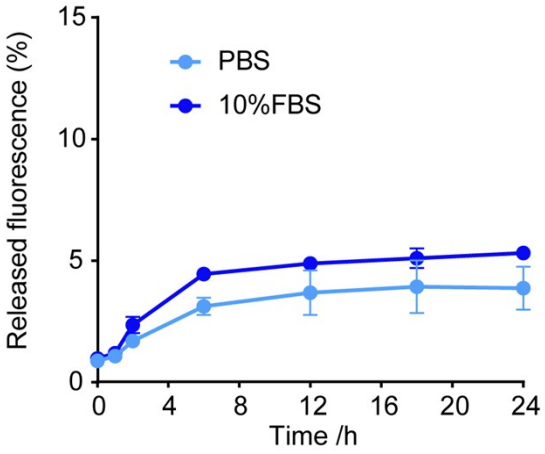

Fig. S8: Stability of ICG@mZGC in PBS and 10% FBS.

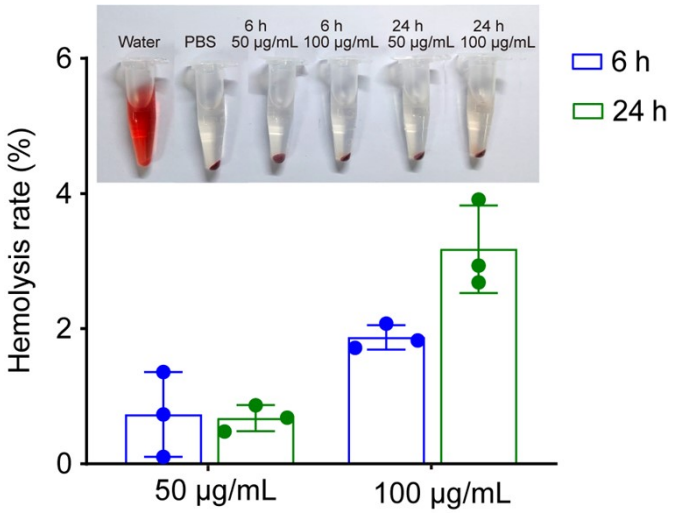

Fig. S9: Hemolysis test of each group in different concentrations of ICG@mZGC at 6 h and 24 h.

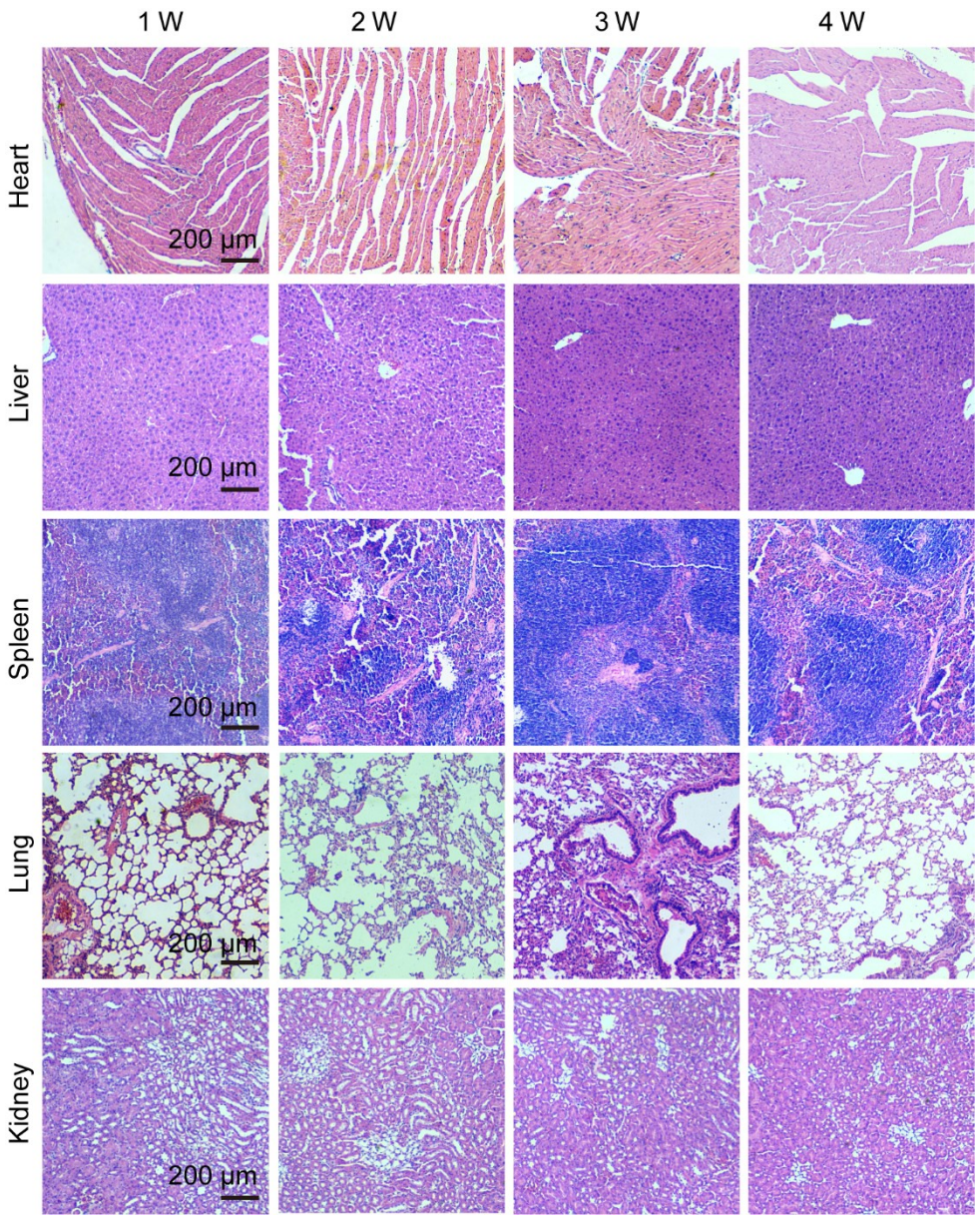

Fig. S10: Histological examination of mouse tissues after repeated intranasal administrated of ICG@mZGC. C57BL/6J mice were administered by i. v. twice a week for 4 weeks. The major organs were examined at 1, 2, 3, and 4 weeks.

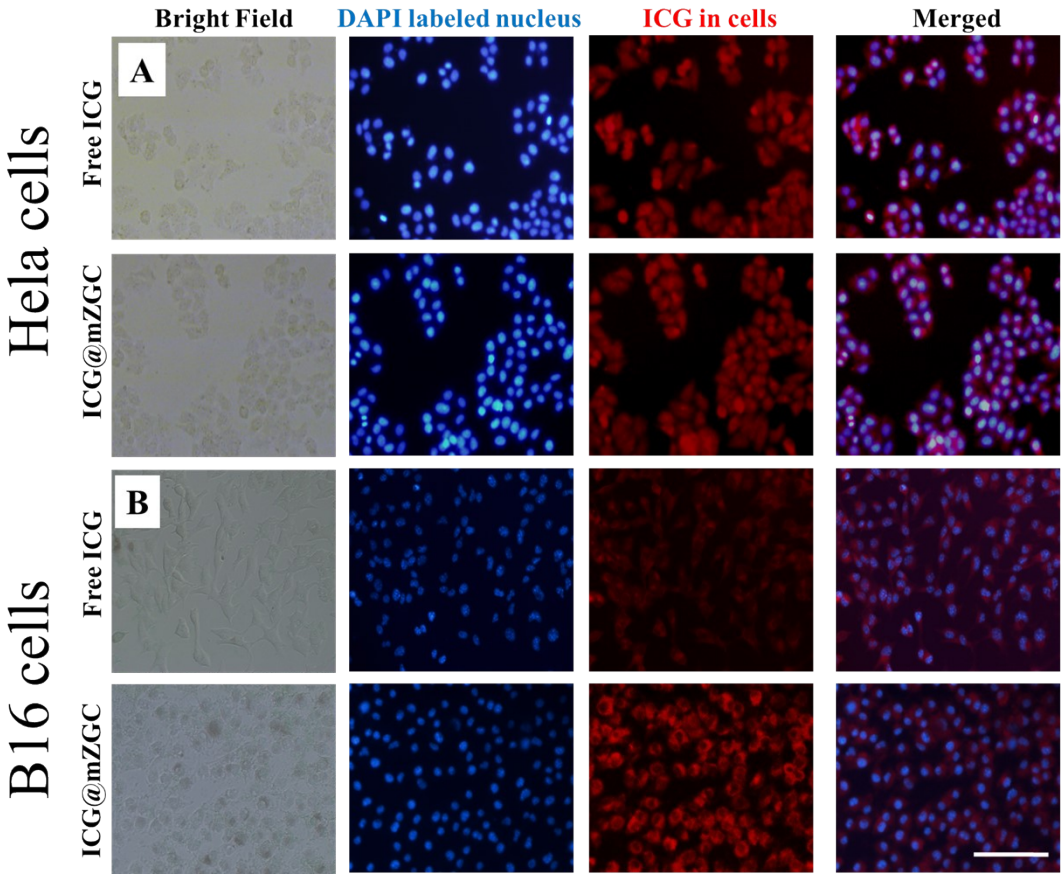

Fig. S11: Free ICG and ICG@mZGC uptaked by (A) Hela cells and (B) B16 cells. The scale bars were 200 μm.

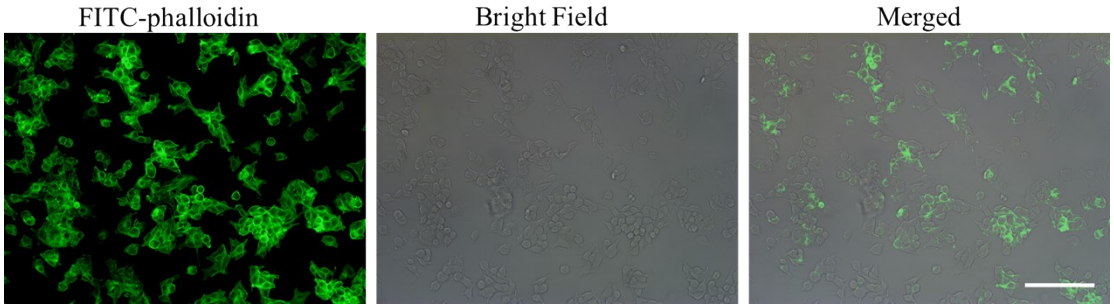

Fig. S12: The fluorescence imaginges of B16 cells stained by FITC-phalloidin, which was used for testing the macrophages phagocytosis activity. The scale bars were 200 μm.