Graphene-Embedded Metal-Organic Framework Nanocomposites for Enhanced Microwave Ablation of Salivary Adenoid Cystic Carcinoma

Ruozhen Li,^{ab} Yaping Tian,^c Biao Zhu,^b Yu Wang,^d Ruijie Dang,^b Lisheng Zhao,^b Suo

Yang,^b Yunxia Li ^b and Ning Wen *^b

^a Medical School of Chinese PLA, Beijing 100853, China.

^b Department of Stomatology, The First Medical Center, Chinese PLA General

Hospital, No.28 Fuxing Road, Beijing 100853, China.

^c Birth defects prevention and Control Technology Research Center, Translational Medicine Research Center, Chinese PLA General Hospital, 28 Fu-Xing Road, Beijing. 100853, China.

^d Department of Oncology, Air Force Medical Center, PLA, No. 30 FuCheng Road, Haidian District, Beijing 100142, China.

* Corresponding author.

E-mail addresses: wenningchn@163.com (N. Wen).

Supporting Information

Supporting Figures



Fig. S1. Calcein-AM and propidium iodide (PI) staining results of cells in different groups. MW irradiation was performed for 3 min. Live/dead cells were green/red, respectively.



Fig. S2. Changes in body weight of the mice within 14 days of acute toxicity test.







Fig. S3. Morphology of liver tissue of mice treated with ZIF67@Gr-PEG NCs at 75 and 100 mg kg⁻¹. (A) In the liver tissue, the nanoparticles can be quickly phagocytosed by a reticuloendothelial system and accumulated in the liver. Some hepatocyte nuclei were deeply stained after capture of circulating ZIF67@Gr-

PEG NCs. Kupffer cells became enlarged and filled with dark brown granules. (B) Few granules appeared in the cytoplasm on the H&E staining of the liver after the mice administrated with ZIF67@Gr-PEG NCs at 75 mg kg⁻¹, (C) while a number of dark brown granules were seen in the hepatic tissue after the mice injected with ZIF67@Gr-PEG NCs at 100 mg kg⁻¹. H&E staining proved that ZIF67@Gr-PEG NCs at the concentration of 100 mg kg⁻¹ were enriched in hepatocytes and Kupffer cells and showed a lower biological toxicity in vivo.