

## Supporting Information

### **Glucose Oxidase-Mediated Tumor Starvation Therapy Combined with Photothermal Therapy for Colon Cancer**

*Huanhuan Zhu, Yunchun Li, Zunzhen Ming\*, Weiwei Liu\**

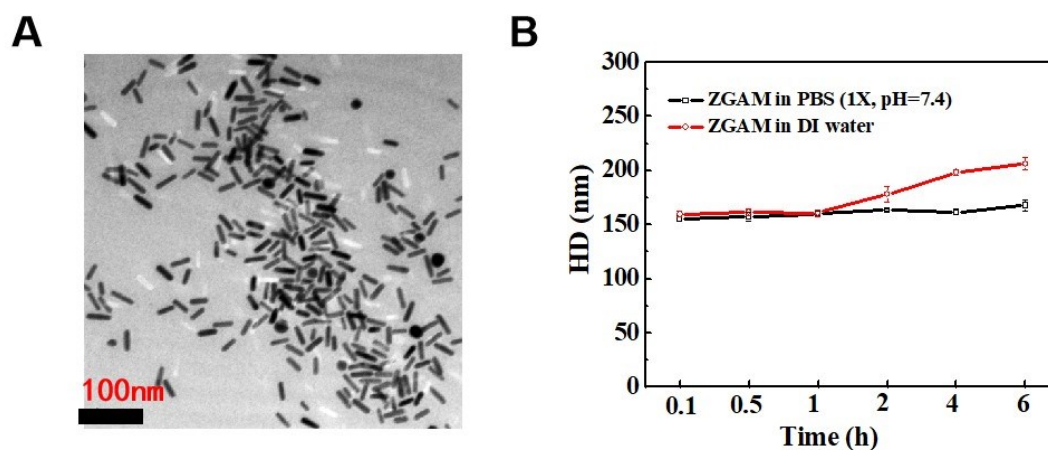
#### **Materials**

N-cetyltrimethylammonium bromide (CTAB), ascorbic acid (AA), adenosine 5'-triphosphate(ATP) bioluminescent assay kit were acquired from Sigma (Shanghai, China), sodium polystyrenesulfonate (PSS, Mw=70000), sodium borohydride (NaBH<sub>4</sub>) and Zinc nitrate hexahydrate(98%, Mw=297.46) were purchased from Alfa Aesar (Tianjing, China), silver nitrate(AgNO<sub>3</sub>), tetrachloroauric acid (HAuCl<sub>4</sub>.3H<sub>2</sub>O) were obtained from Sinopharm Chemical Reagent Beijing Co., Ltd. (Beijing, China), Glucose oxidase (GOx) and 2-Methylimidazole (2-M) were purchased from Aladdin (Shanghai, China), Dulbecco's Modification of Eagle's Medium (DMEM), fetal bovine serum (FBS), 0.5% Trypsin-EDTA and penicillin-streptomycin (PS) were acquired from Gibco. All rest of media for cell culture was purchased from Corning Corp. Deionized water with 18 MΩ·cm was used for test.

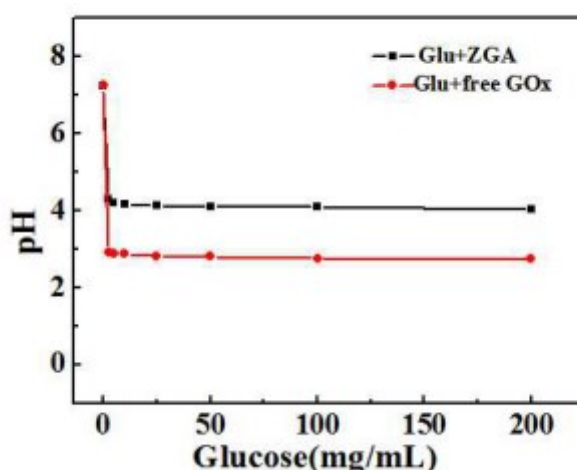
#### **Characterization**

The sizes and ζ-potential of ZIF@GOx@AuNRs and ZIF@GOx@AuNRs@eM were measured by dynamic light scattering (JEM zetasizer Nano-ZS90, Malvern). The special UV-vis absorption spectrum was acquired from a Cary 50 spectrophotomete

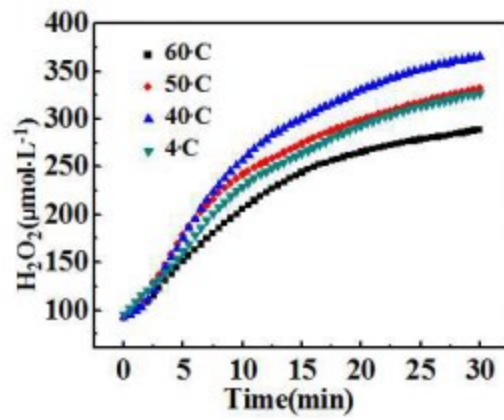
(Varian, Palo Alto). The transmission electron microscopy (TEM) images of AuNRs, ZIF@GOx@AuNRs and ZIF@GOx@AuNRs@eM were obtained from a JEM-2100F electron microscope (JEOL, Japan). The PH meter ( FE28, METTLER TOLEDO) was used to explore the activity of enzyme. An 808-nm NIR laser (Ainajie Optoelectronics Technology, Beijing) was used to explore the photothermal effect in vitro and in vivo, meanwhile, the real-time temperature and image was acquired from the infrared thermal camera (IRS/S6, Baifa Technology company ).



**Figure S1** (A) The transmission electron microscopy (TEM) images of gold nanorods. (B) Variation of size distribution of ZGAM.



**Figure S2** The pH level of the reaction between glucose and samples.



**Figure S3** The  $H_2O_2$  production of the reaction between samples and glucose at different temperature.