Folic Acid-Functionalized L-cys/ZnS:O Nanoparticles for Homologous Targeting and Photodynamic Therapy of Tumor Cells

Xiaoxuan Wang[a], Wenying Wei[a], Dian Zheng[a], Zhong Chen[c,*], Honglian Dai[a,b,*]

[a]*State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Biomedical Materials and Engineering Research Center of Hubei Province, Wuhan 430070, China.*

[b]*Foshan Xianhu Laboratory of the Advanced Energy Science and Technology Guangdong Laboratory, Xianhu hydrogen Valley, Foshan 528200, China.*

[c]*School of Materials and Mechanical and Electrical Engineering, Jiangxi Science and Technology Normal University, Nanchang 330013, PR China*

* Corresponding authors:

Honglian Dai, Ph.D.

E-mail address: daihonglian@whut.edu.cn (H. Dai)

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Biomedical Materials and Engineering Research Center of Hubei Province, Wuhan 430070, China.

Foshan Xianhu Laboratory of the Advanced Energy Science and Technology Guangdong Laboratory, Xianhu hydrogen Valley, Foshan 528200, China.

Tel: +86-027-87879468

fax: +86-027-87879468

* Corresponding author:

Zhong Chen, Ph.D.

E-mail address: chenzhonglzu@hotmail.com (Z. Chen)

School of Materials and Mechanical and Electrical Engineering

Jiangxi Science and Technology Normal University

Nanchang 330013

Tel: +86-791-88537923

fax: +86-791-88537923

Table of Contents

1. Materials……..……..……4

2. Morphology and size characterization 5-6

3. Cell viability graph.....6-7

4. Optical microscope image.....7

5. Flow Cytometry Data.....8

1. Materials

Zinc acetate ($ZnAc_2 \cdot 2H_2O$), C_2H_5NS (TAA), Sodium hydroxide (NaOH), L-cystiene (L-cys), Folic acid (FA), 1-(3-Dimethylaminopropyl)-3-ethylcarbodiimide hydro (EDC), Dimethyl sulfoxide (DMSO), n-Hexane, Acetone and Ethanol were procured from the Sinopharm Chemical Reagent Co., Ltd. All reagents and solvents were Biochemical reagent (BR) grade or analytical reagent (AR) grade and were used as received unless otherwise indicated.

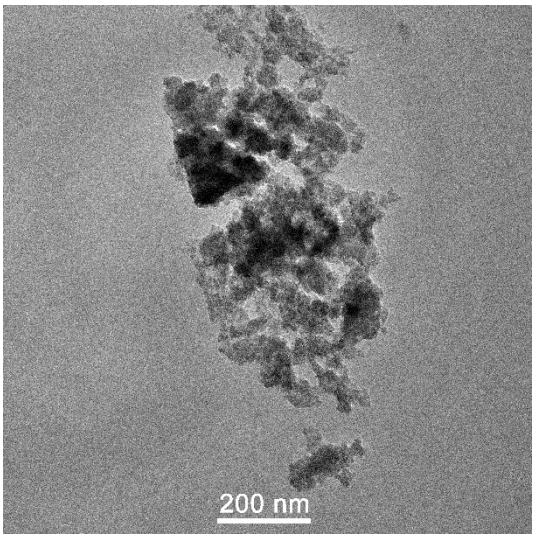

Figure S1. TEM image of LZS NPs.

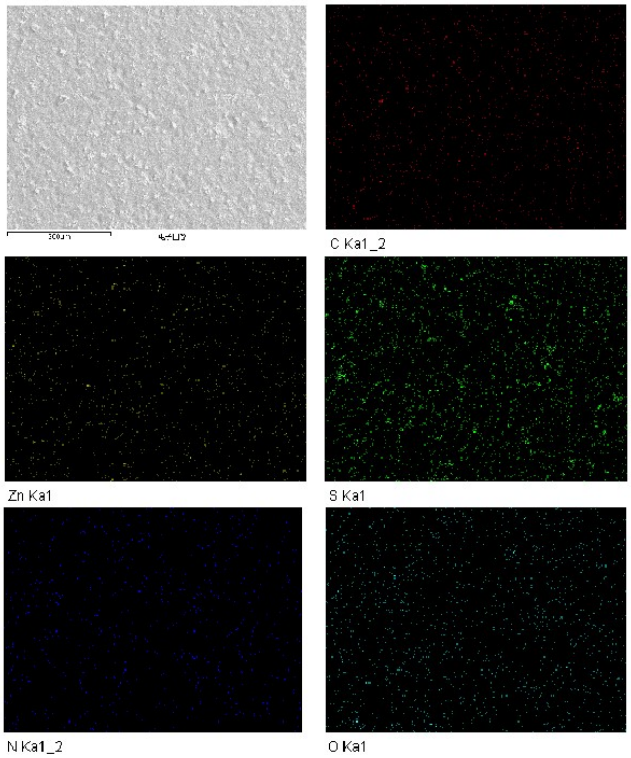

Fig. S2. Elemental mapping images of FA@LZS-6 NPs.

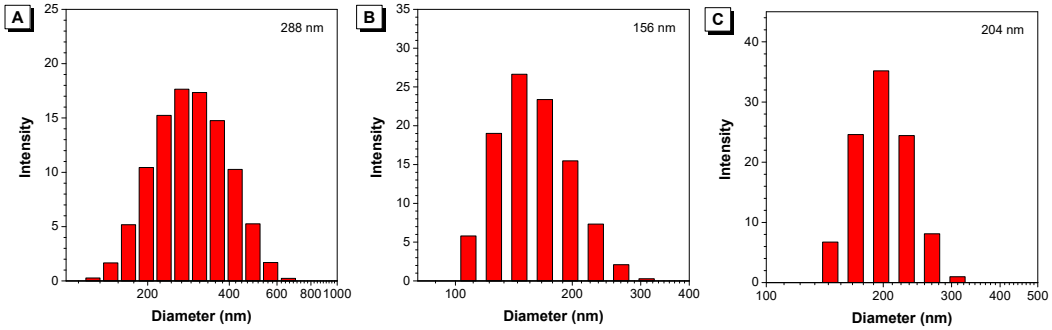

Figure S3. Dynamic light scattering diagram of LZS (A), FA@LZS-1 (B) and FA@LZS-6 (C) NPs in water, respectively.

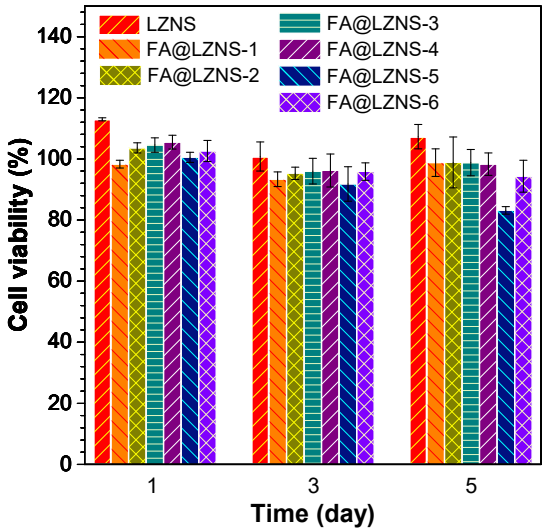

Figure S4. Cell viability of L929 cells exposed to LZS and FA@LZS NPs with 100 ug/mL at different times.

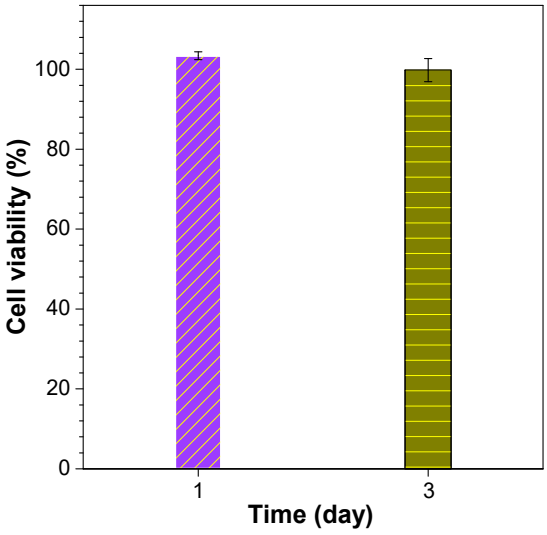

Figure S5. Cell viability of $HepG_2$ cells exposed to FA@LZS-6 NPs with 100 ug/mL at different times.

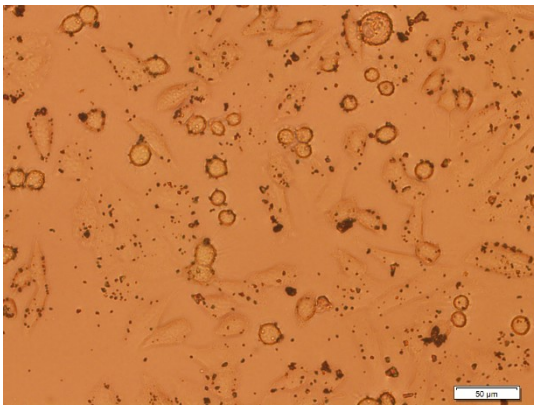

Figure S6. Bright-field images of HepG2 cells treat with FA@ZnS-1 NPs (100 ug/mL).

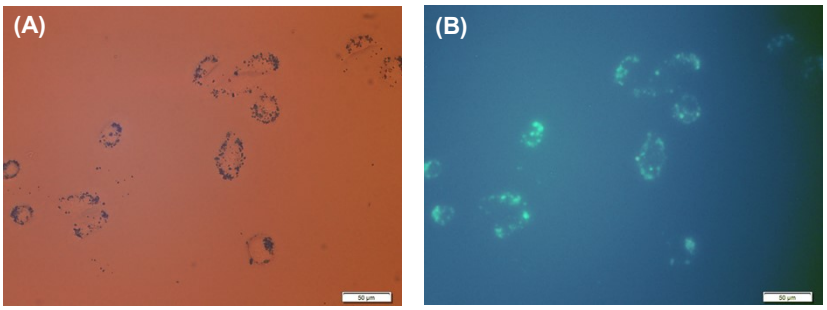

Figure S7. Bright-field (A) and Fluorescence (B) images of MCF-7 cells treat with FA@ZnS-6 NPs (100 ug/mL).

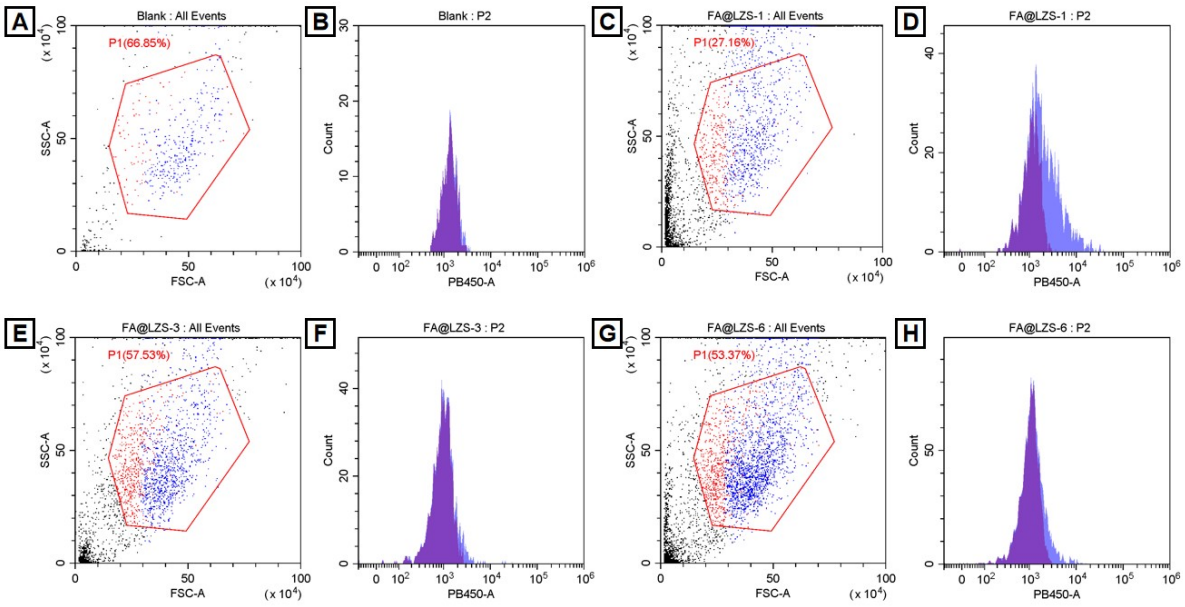

Figure S8. Flow cytometry data of cell labeling experiments described in MCF-7 cells using FA@LZS NPs (A, B: Control, C, D: FA@LZS-1, E, F: FA@LZS-3, G, H: FA@LZS-6, the concentration of FA@LZS NPs is 100 ug/mL).