

Supporting information

# **Matrix Metalloproteinase Responsive Nanoparticles for Synergistic Treatment of Colorectal Cancer via Simultaneous Anti-Angiogenesis and Chemotherapy**

Leilei Shi,<sup>†</sup> Yi Hu,<sup>†</sup> Ang Lin,<sup>§</sup> Chuan Ma,<sup>‡</sup> Chuan Zhang,<sup>†\*</sup> Yue Su,<sup>†</sup> Linzhu Zhou,<sup>†</sup>

Yumei Niu,<sup>1\*</sup> and Xinyuan Zhu<sup>†\*</sup>

<sup>†</sup> *School of Chemistry and Chemical Engineering, State Key Laboratory of Metal  
Matrix Composites, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai  
200240, People's Republic of China*

<sup>‡</sup> *School of Dental Medicine, Shanghai Jiao Tong University, 227 South Chongqing  
Road, Shanghai, 200025, P. R. China*

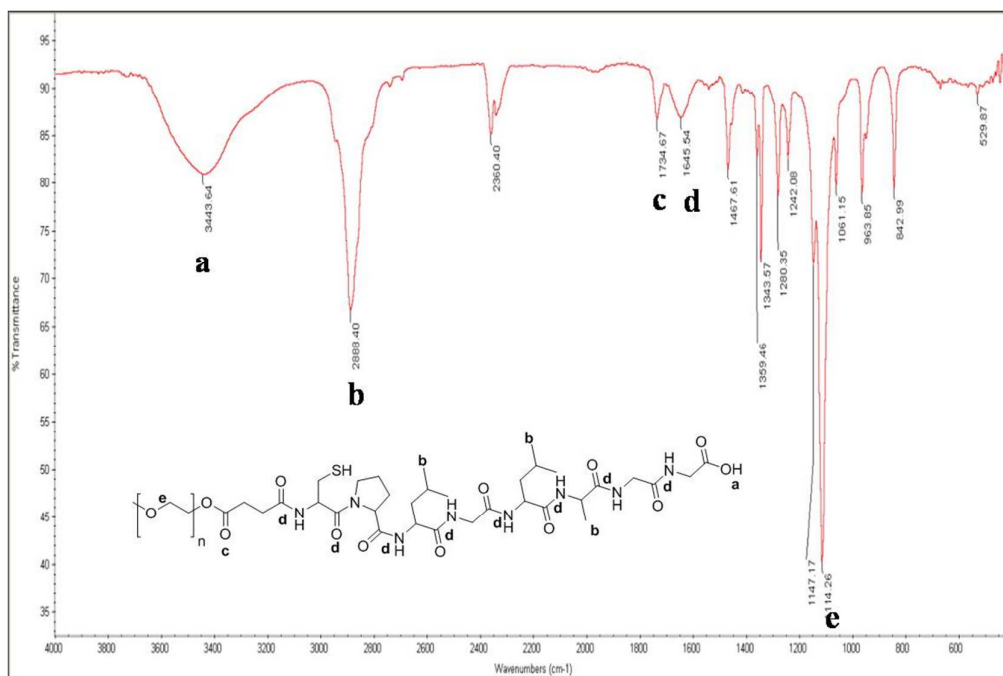
<sup>§</sup> *Department of Medicine, Immunology and Allergy Unit, Karolinska Institute,  
Stockholm, SE 17176, Sweden*

<sup>1</sup> *Department of Endodontics, The First Affiliated Hospital of Harbin Medical  
University, 143 Yiman Street, Harbin 150001, P. R. China*

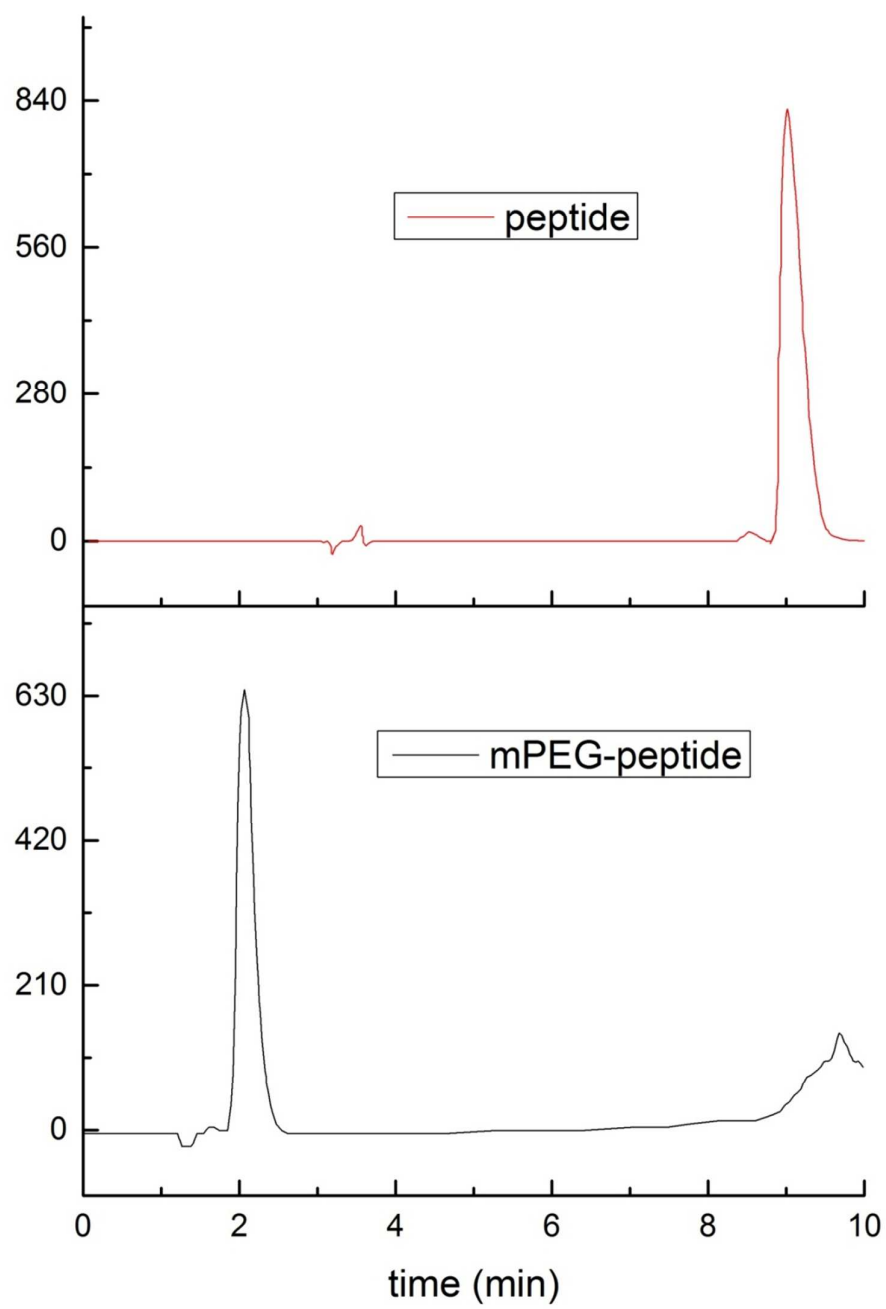
\*Corresponding author. E-mail: chuanzhang@sjtu.edu.cn, yumeiniu@163.com,  
xyzhu@sjtu.edu.cn; Telephone: +86-21-54746215; Fax: +86-21-54741297.

## **Table of Content**

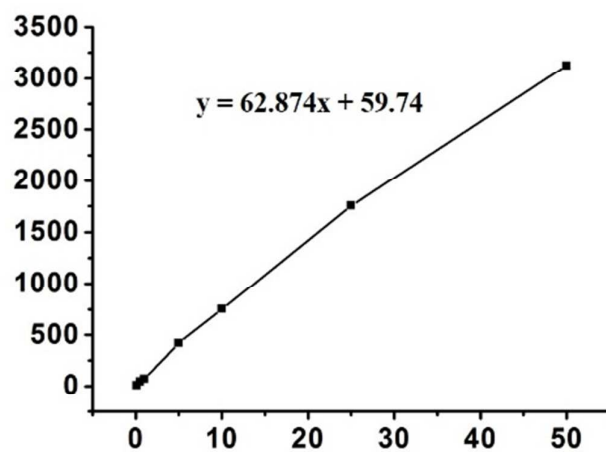
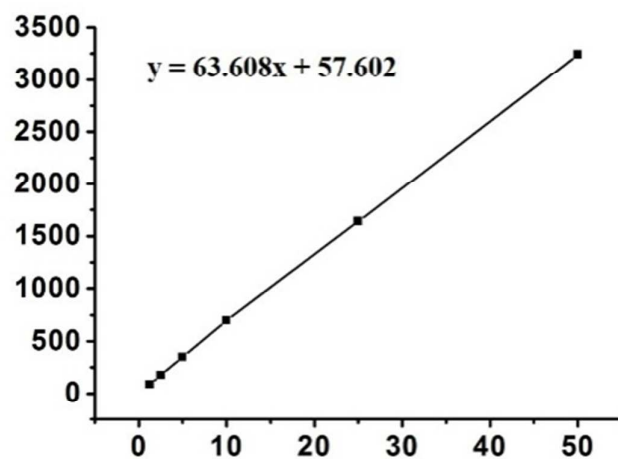
1. FTIR spectrum of mPEG-peptide.....	<b>S3</b>
2. The chromatogram of peptide and mPEG-peptide.....	<b>S4</b>
3. The standard curve of CPT and sorafenib.....	<b>S5</b>
4. 3D images of photoacoustic imaging.....	<b>S6</b>
5. TEM image of Cy5.5 loaded nanoparticles.....	<b>S7</b>
6. The calculated combination index (CI) value.....	<b>S8</b>



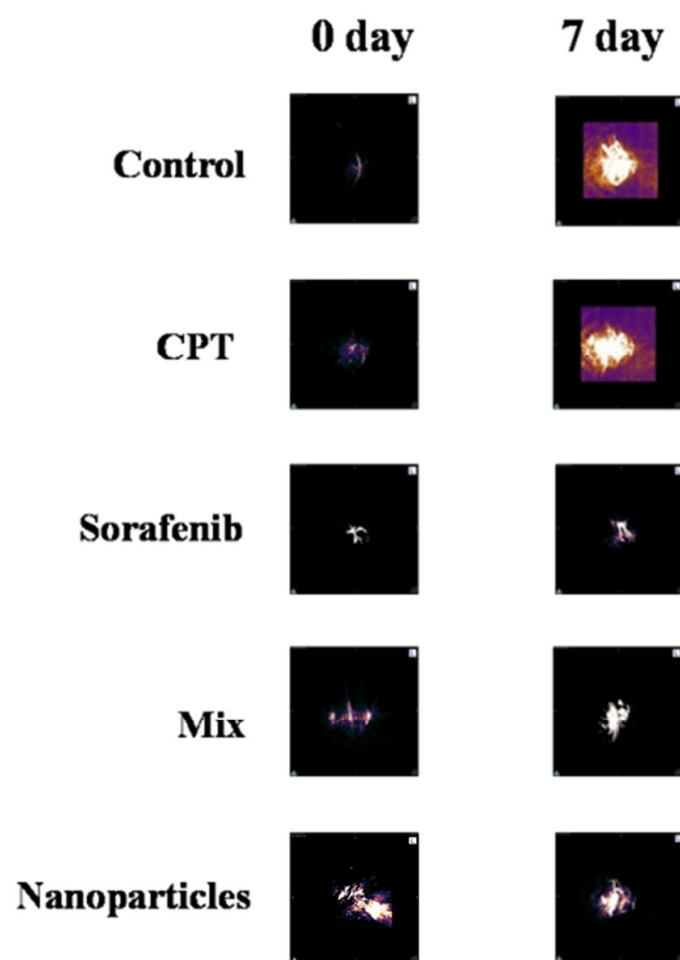
**Figure S1.** FTIR spectrum of mPEG-CPLGLAGG.



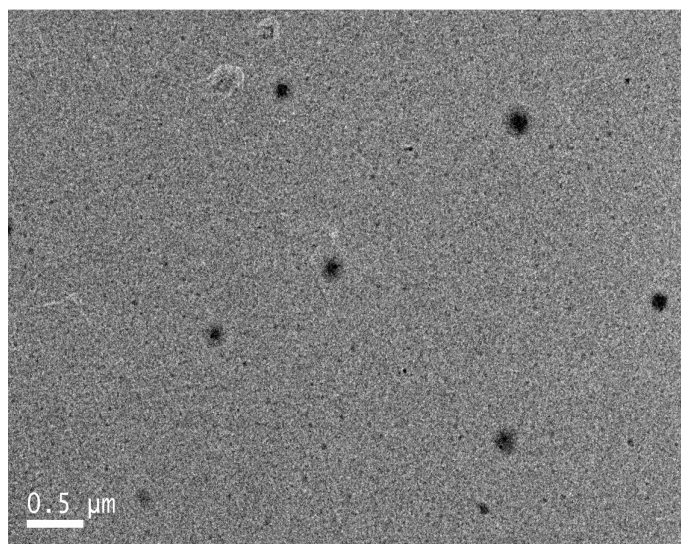
**Figure S2.** The chromatogram of mPEG-CPLGLAGG and CPLGLAGG.



**Figure S3.** The standard curve of CPT (upper) and sorafenib (down) for determining drug loading content. X-axis indicates concentration ( $\mu\text{g/mL}$ ), Y-axis indicates CPT and sorafenib absorbance peak area, respectively.

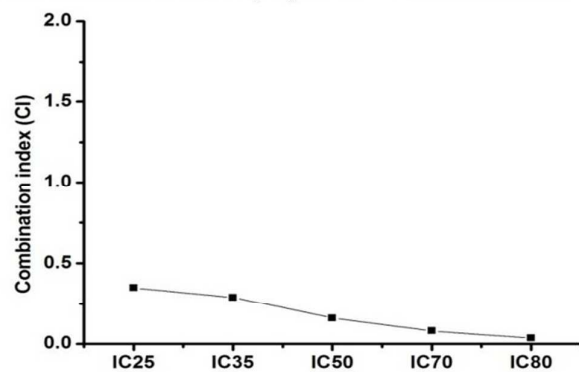


**Figure S4.** 3D images of *in vivo* oxyhemoglobin and deoxyhemoglobin PA signal change.



**Figure S5.** TEM image of Cy5.5-loaded nanoparticles. Scale bar is 0.5  $\mu\text{m}$ .

**Combination Index (CI) of CPT and sorafenib mixture**



**Figure S6.** The calculated combination index (CI) value of drug mixture (CPT and sorafenib) at different inhibition rate.