

Supporting Information

Rapidly cell-penetrating and reductive milieu-responsive nanoaggregates assembled from amphiphilic folate-camptothecin prodrug for enhanced drug delivery and controlled release

Zhigang Xu^{a, b*}, Meili Hou^{a, b}, Xiaoxiao Shi^{a, b}, Yong-E Gao^{a, b}, Peng Xue^{a, b},

Shiying Liu^c, Yuejun Kang^{a, b*}

^aInstitute for Clean Energy and Advanced Materials, Faculty of Materials and
Energy, Southwest University, Chongqing 400715, P. R. China

^bChongqing Key Laboratory for Advanced Materials and Technologies of Clean
Energies, Chongqing 400715, P. R. China

^cSchool of Chemical and Biomedical Engineering, Nanyang Technological University,
62 Nanyang Drive, Singapore 637459, Singapore

Correspondence: Email: zgxu@swu.edu.cn; yjkang@swu.edu.cn

Fax: +86-68253204; Tel: +86-68254056

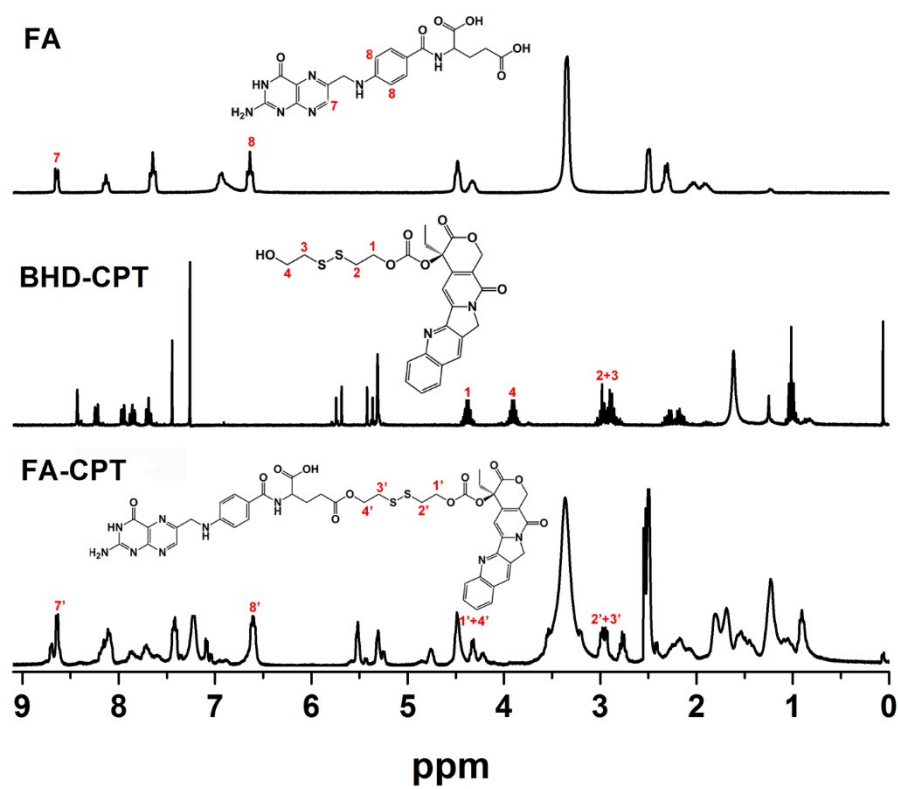


Figure S1. ^1H NMR of FA, BHD-CPT and FA-CPT prodrug.



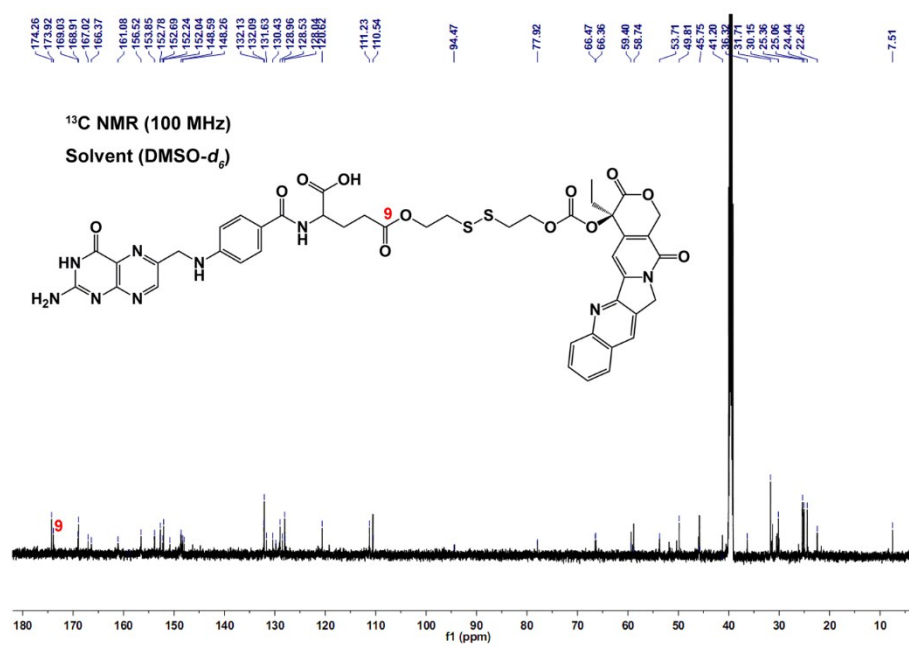


Figure S3. ¹³C NMR of FA-CPT prodrug.

CXU-1 #25 RT: 0.30 AV: 1 NL: 1.43E3
T: ITMS + c ESI Full ms [50.00-2000.00]

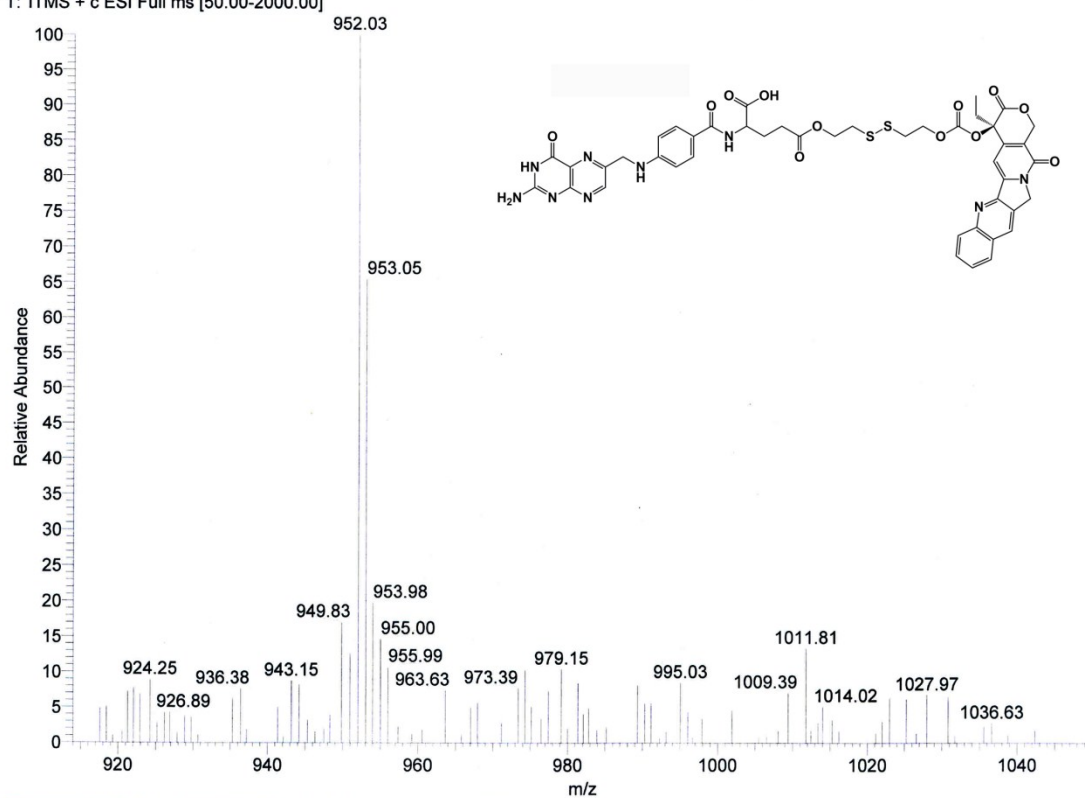


Figure S4. Mass spectra of FA-CPT prodrug.

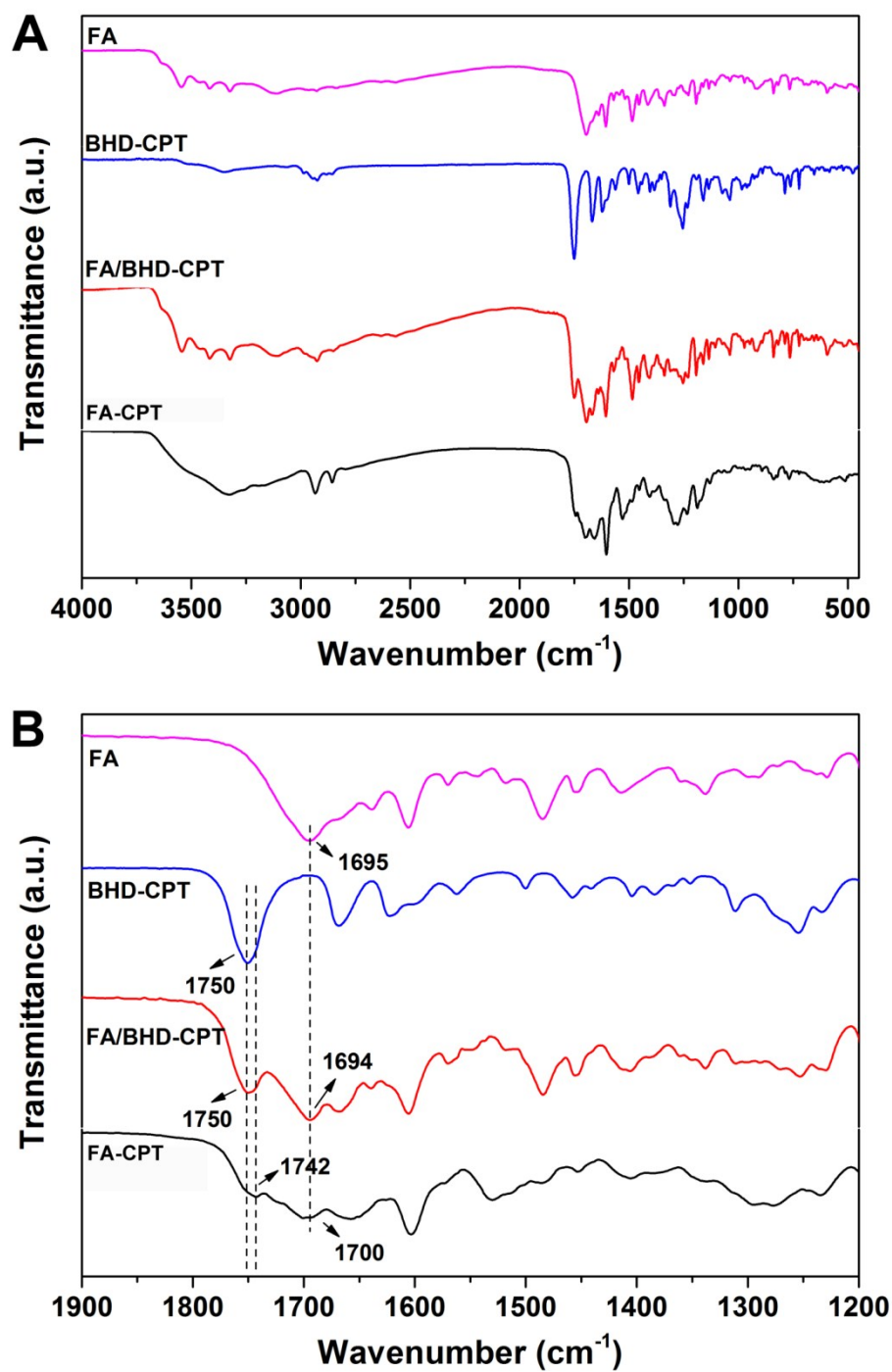


Figure S5. FTIR spectra of FA, BHD-CPT, FA/BHD-CPT and FA-CPT prodrug.

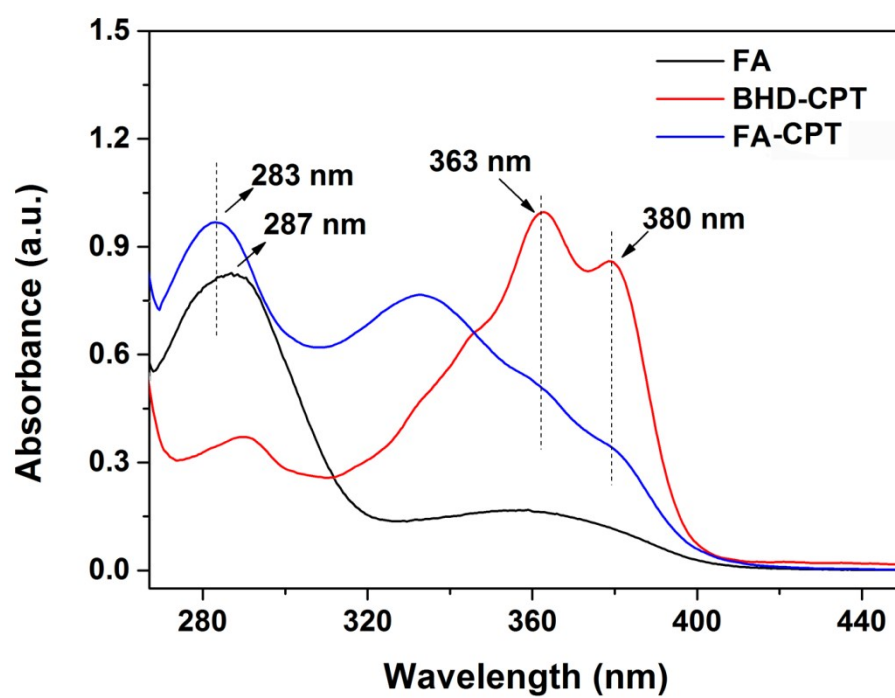


Figure S6. UV-visible spectra of FA, BHD-CPT and FA-CPT dissolved in DMF with same concentration of $20 \mu\text{g mL}^{-1}$.

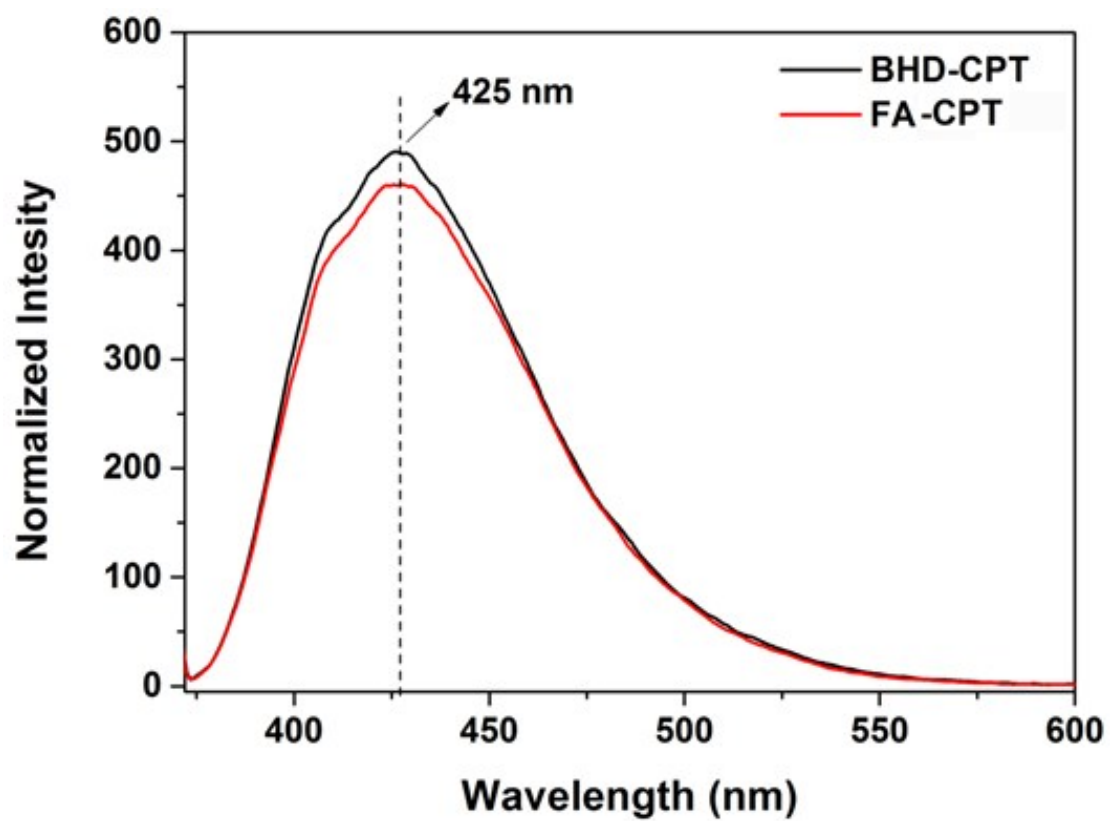


Figure S7. The photoluminescence spectra of BHD-CPT and FA-CPT in DMF solution. Excitation wavelength: 365 nm.

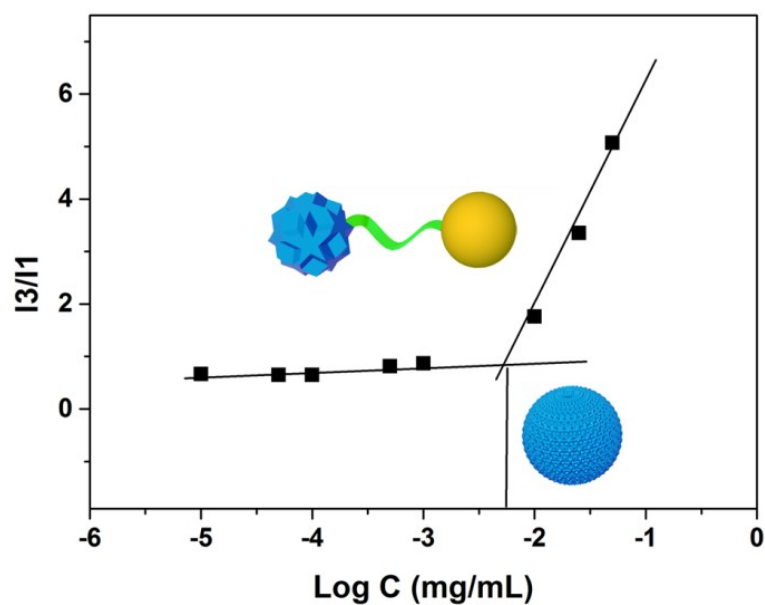


Figure S8. The fluorescence intensity ratio I_3/I_1 of pyrene as a function of FA-CPT NA concentration. The critical aggregate concentration (CAC) in aqueous medium is determined as approximately $5.75 \mu\text{g mL}^{-1}$.

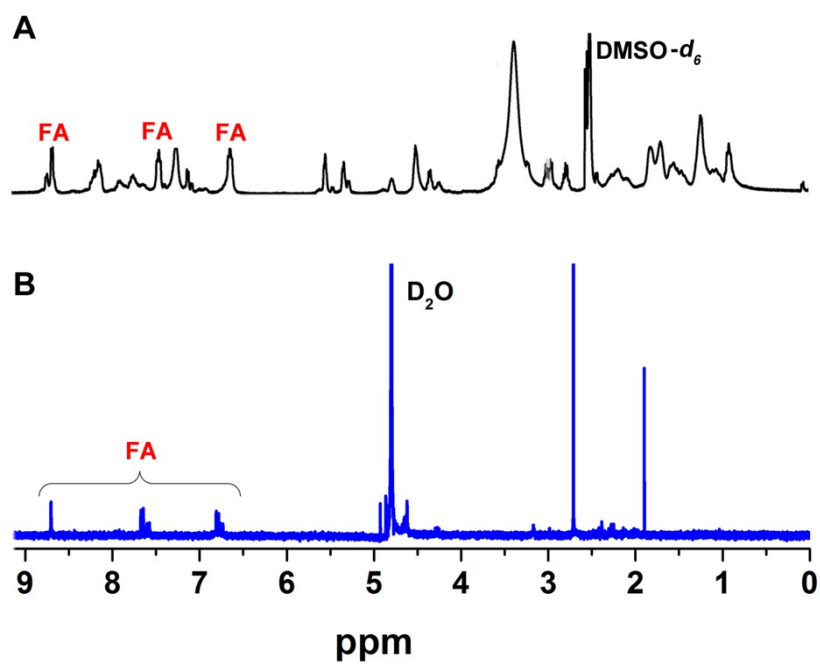


Figure S9. (A) ^1H NMR spectra of FA-CPT in $\text{DMSO}-d_6$, (B) ^1H NMR spectra of FA-CPT NAs in D_2O .

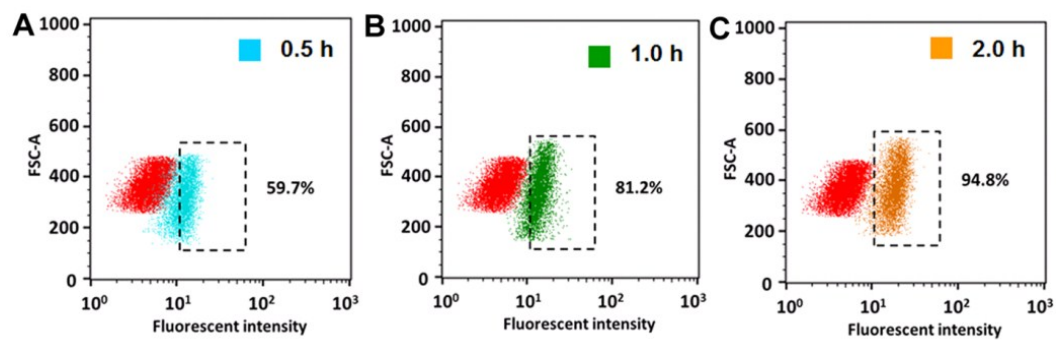


Figure S10. The flow cytometry analysis of HeLa cells after treatment with FA-CPT for different time (0.5, 1.0 and 2.0 h). CPT concentration for both groups: $25 \mu\text{g mL}^{-1}$.