Supplementary Information

"Sheddable" PEG-Lipid to Balance the Contradiction of PEGylation between Long Circulation and Poor Uptake

Caiyan Zhao,‡[a] Hongzhang Deng,‡[a,b] Jing Xu,[a] Shuyi Li,[a] Lin Zhong,[a] Leihou Shao,[a] Yan Wu *[a] and Xing-jie Liang*[a]

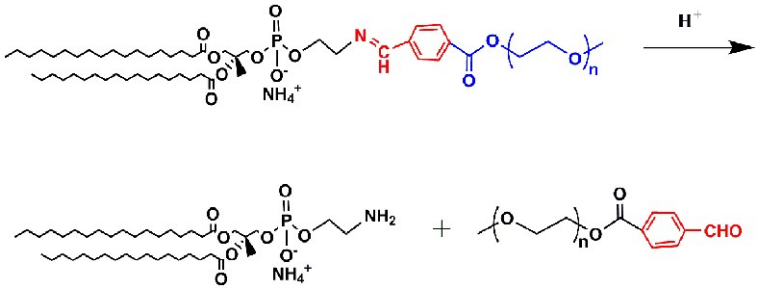
[a]CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology, Beijing 100190, P.R. China

[b]Department of Polymer Science and Technology and Key Laboratory of Systems Bioengineering of the Ministry of Education, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, P.R.China

* Corresponding author. Tel: +86 10 82545615 +86 10 82545614

E-mail address: liangxj@nanoctr.cn; wuy@nanoctr.cn

‡Caiyan Zhao and Hongzhang Deng contributed equally to this study.



Scheme S1 Hydrolysis route of DSPE-Hy-PEG copolymer at acidic condition.

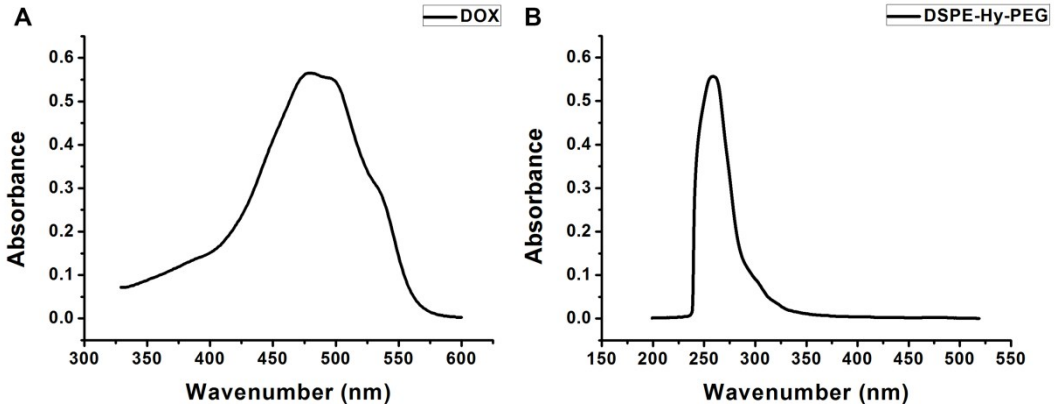


Fig. S1 (a) UV–vis absorption spectra of DOX; (b) UV–vis absorption spectra of DSPE-Hy-PEG.

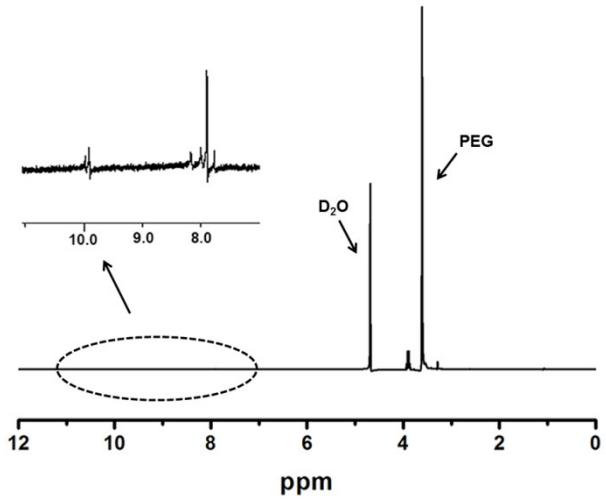


Fig. S2 [1]HNMR spectra of DSPE-Hy-PEG micelles incubated at pH 6.8 for 24 h.

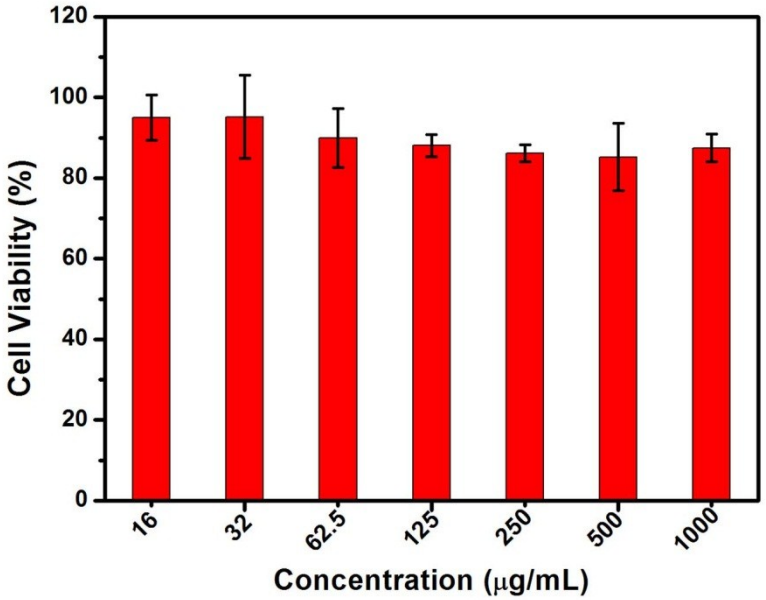


Fig. S3 Viability of MCF-7 cells after incubation for 24 h with empty DSPE-Hy-PEG micelles at various concentrations.

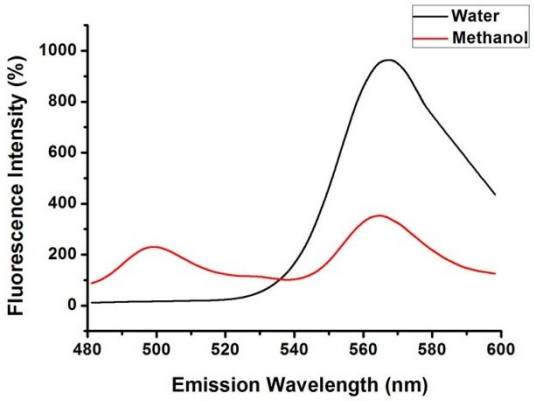


Fig. S4 Emission spectra of DiO/DiI-loaded DSPE-Hy-PEG micelles diluted by water or methanol.

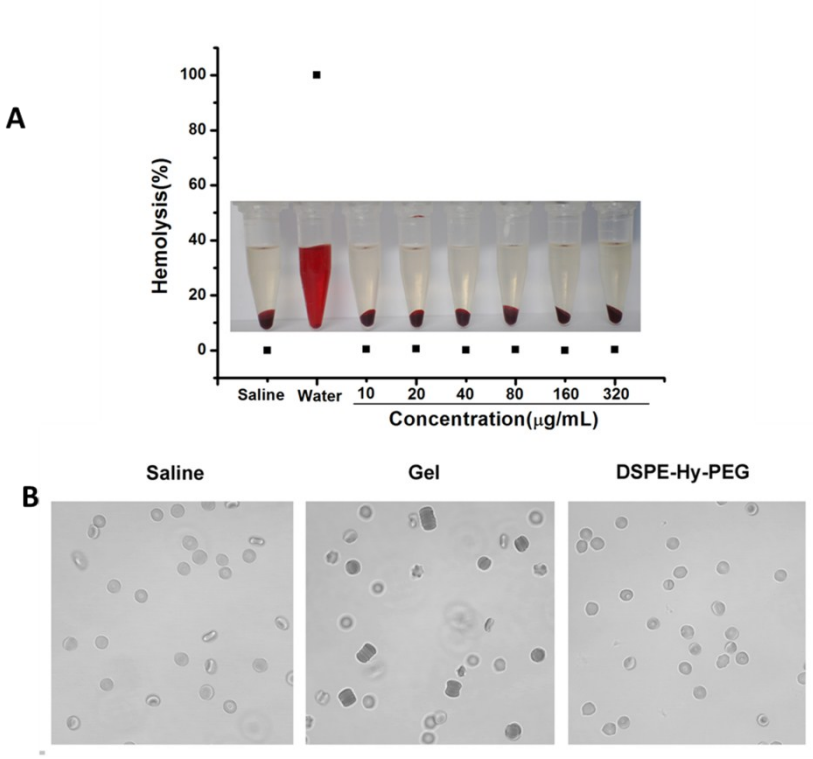


Fig. S5 (A) Hemolysis assay of empty micelles,using water as a positive control and saline as a negative control; (B) CLSM images of Red blood cells incubated with empty micelles, using gel as a positive control and saline as a negative control.

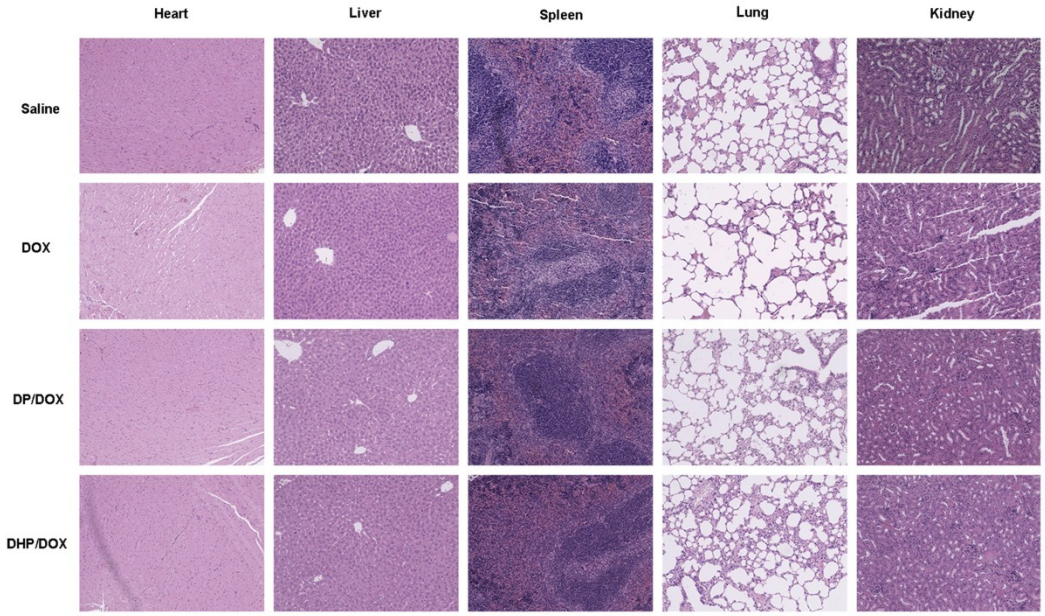


Fig. S6 Representative H&E sections of various organs of tumor-bearing nude mice after treatment with various drug formulations (DSPE-PEG represented by DP, DSPE-Hy-PEG represented by DHP).