Supporting information

GE11 peptide-decorated acidity-responsive micelles for improved drug delivery and enhanced combination therapy of metastatic breast cancer

Zhihao Guo^{a,b,c,1*}, Junhui Sui^{b,d,1}, Yumei Li^a, Qinchuan Wei^a, Cailing Wei^a, Linyun Xiu^a, Ruohua Zhu^a, Yong Sun^{b*}, Jianshe Hu^c, Ji-Liang Li^{a,e*}

^a School of Biomedical Engineering, School of Ophthalmology & Optometry, Eye Hospital, Wenzhou Medical University, 270 Xueyuan Road, Wenzhou, 325027, China.

^b National Engineering Research Center for Biomaterials, Sichuan University, 29 Wangjiang Road, Chengdu, 610064, China.

^c Center for Molecular Science and Engineering, College of Science, Northeastern University, 3-11
 Wenhua Road, Shenyang, 110819, China.

^d College of Life Science and Technology, Xinxiang Medical University, 601 Jinsui Road, Xinxiang, 453003, China.

^e Wenzhou Institute, University of Chinese Academy of Sciences, 1 Jinlian Road, Wenzhou, 325000, China.

Supplementary Fig. S1-S4 and Table S1-S2



Fig. S1. In vitro cytotoxicity of free DOX combination with CEL at a mass ratio of 1/5 for 24 h.



Fig. S2. Relative cell viability of 4T1 cells after treatment with the drug-loaded micelles for 48 h.



Fig. S3. Tumor inhibiting rate calculated by tumor volume.



Fig. S4. Histopathological analysis of major organs in 4T1 tumor-bearing mice after different treatments.

Drug-loaded micelles	Size (D. nm)	PDI	LC of DOX	LC of CEL	EE of CEL
			(%)	(%)	(%)
GE11-DOX-M	81.3 ± 3.5	0.21 ± 0.03	6.7		
DOX+CEL-M	92.5 ± 2.4	0.18 ± 0.02	5.3	28.4	83.1
GE11-DOX+CEL-M	100.6 ± 5.4	0.16 ± 0.03	4.3	23.2	71.9

 Table S1. Properties of drug-loaded micelles.

 Table S2. In vitro cytotoxicity of drug-loaded micelles against 4T1cells for 24 h or 48 h.

Micelles	IC ₅₀ /DOX (µg/mL) (24 h)	IC ₅₀ /DOX (µg/mL) (48 h)
GE11-DOX-M	3.50 ± 0.07	0.45 ± 0.05
DOX+CEL-M	1.14 ± 0.05	0.26 ± 0.06
GE11-DOX+CEL-M	0.22 ± 0.03	0.07 ± 0.01