Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Extracellular retention of cyclopamine nanoformulation leveraging larger size and more negative charge for improved breast cancer treatment

Chan Feng,[a] Kun Wang,[b] Yun Lin,[a] Zhiwang Song,[a] Yonglin Lu,[a] Jie Liu,[a] Donglei Zhu,[a] Yongyong Li*[b] and Chunyan Dong* [a]

Supporting Information for Publication

Additional Figures

To support the results presented in the main article, additional figures are shown in this supporting document.

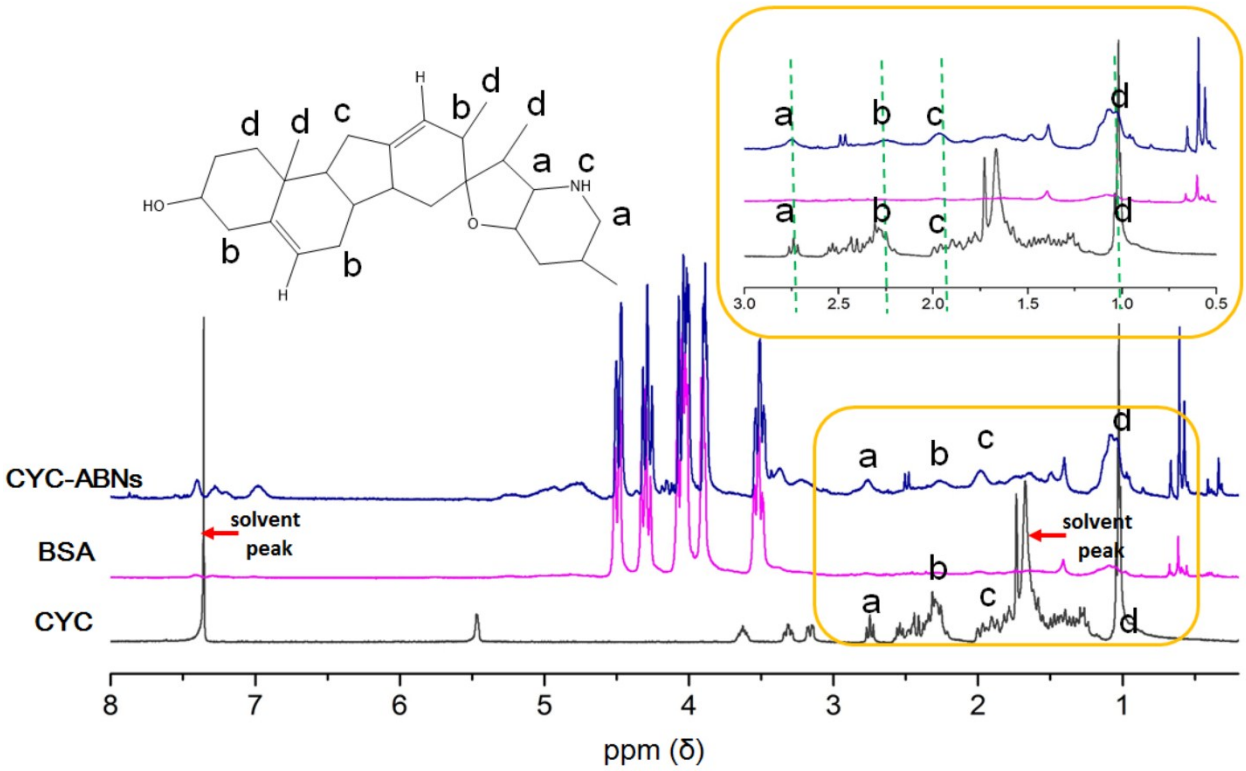

Figure S1. ^{1}H NMR spectroscopy of BSA, CYC and CYC-ABNs.

[a] *Cancer center, Shanghai East Hospital, Tongji University, Shanghai 200120, P. R. China. *Email: cy_dong@tongji.edu.cn*
[b] *The Institute for Biomedical Engineering & Nano Science (iNANO), Tongji University School of Medicine, Shanghai 200092, P. R. China. *Email: yongyong_li@tongji.edu.cn*

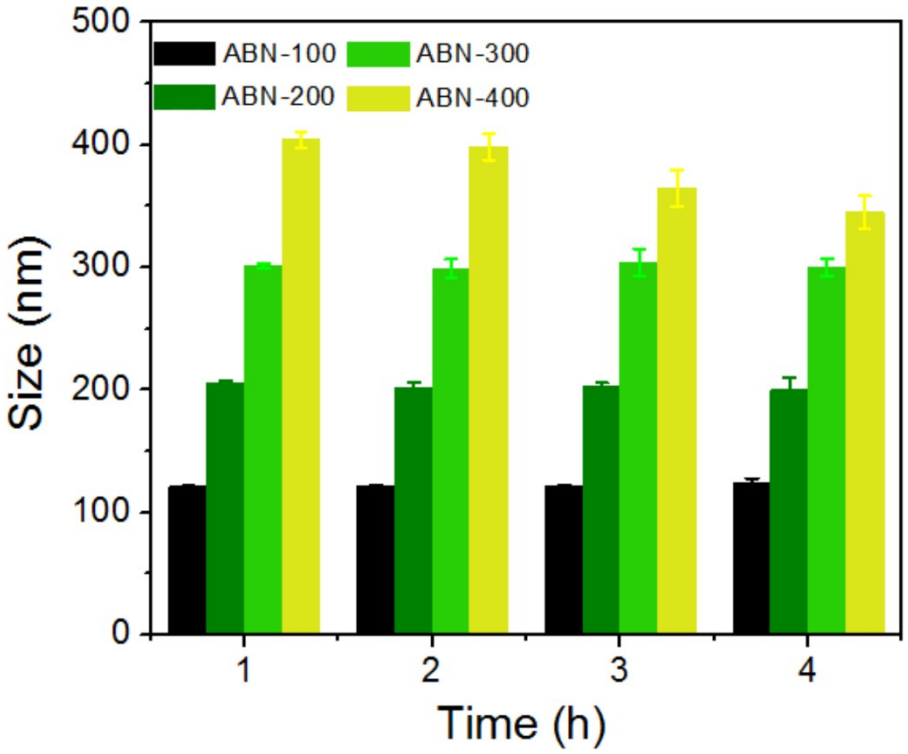

Figure S2. Size of CYC-ABNs with different size incubating with PBS with different time.

Table S1. Size and charge of CYC-ABNs.

Formulation	ABN-100	ABN-200	ABN-300	ABN-400
Size [nm]	100	200	300	400
Surface potential	-7±1	-11±2	-13±1	-15±1

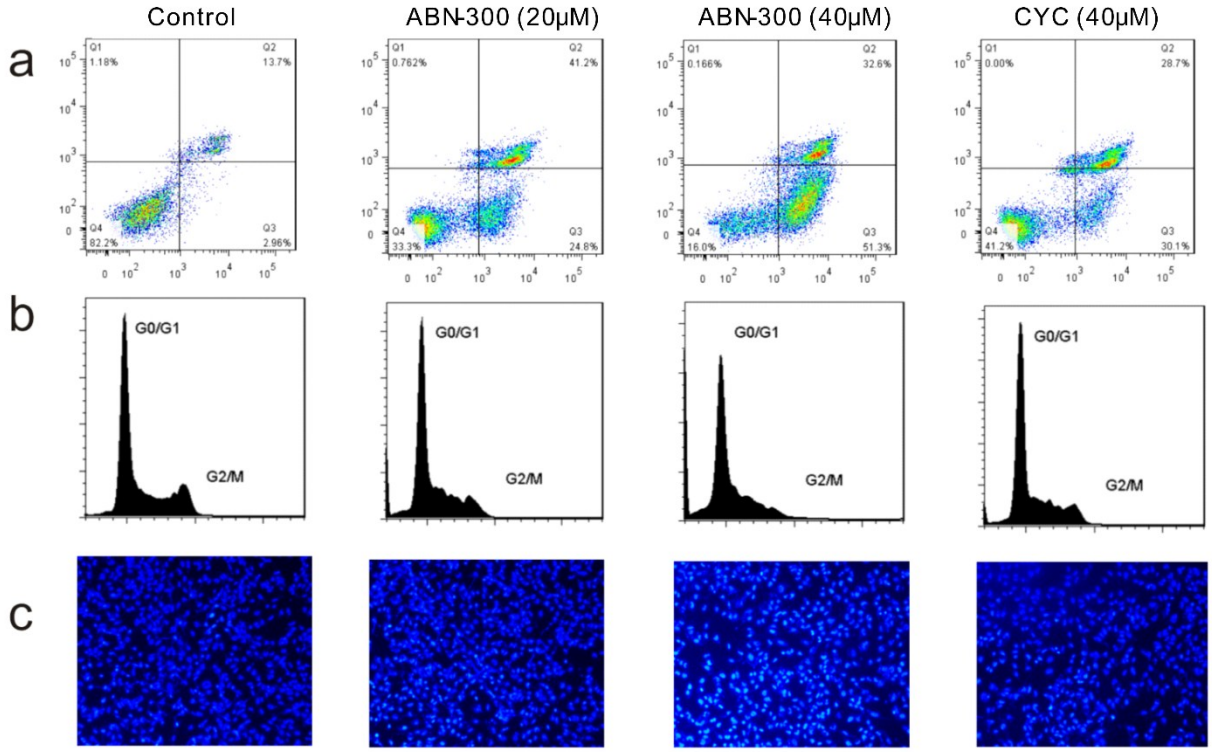

Figure S3. Comparison between the antitumor effect of free CYC and CYC-ABNs. a) Annexin V/PI staining assays of control, ABN-300 (20 μM), ABN-300 (40 μM), and CYC (40 μM). b) Cell cycle assays of control, ABN-300 (20 μM), ABN-300 (40 μM), and CYC (40 μM). c) Hoechst staining of control, ABN-300 (20 μM), ABN-300 (40 μM), and CYC (40 μM).

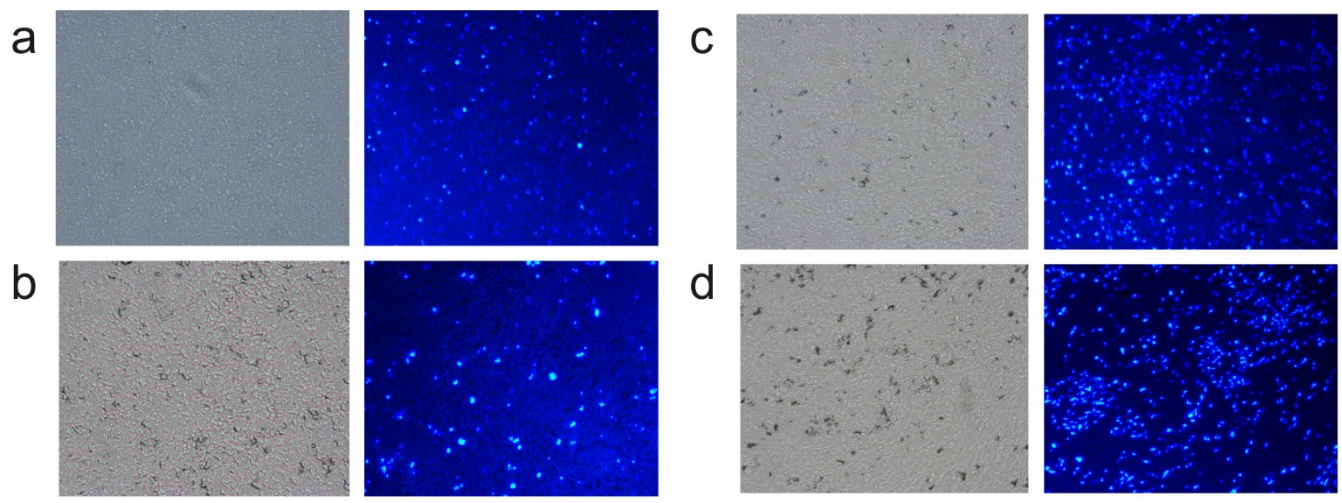

Figure S4. Hoechst staining of tumor tissues dissected from mice after treated with different treatment groups at day 14. a) PBS treated group b) CYC treated group c) ABN-100 treated d) ABN-300 treated.

Table S2. Blood biochemical indexes of mice treated with ABNs.

Test	Sex	Normal	Sham	ABNs
GOT/AST [U/L]	M	74–143	61.8 ± 1.1	60.8 ± 1.1
	F	65–203	73.6 ± 0.8	83.6 ± 0.8
GPT/ALT [U/L]	M	18–45	40.4 ± 0.5	45.4 ± 0.5
	F	16–48	22.6 ± 0.8	28.6 ± 0.8
Urea [mg/ dL]	M	12.3–24.6	16.5 ± 0.9	18.1 ± 0.8
	F	13.2–27.1	17.1 ± 1.8	13.3 ± 0.8
Creatinine [mg/ dL]	M	0.2–0.5	0.39 ± 0.1	0.44 ± 0.02
	F	0.2–0.6	0.36 ± 0.04	0.42 ± 0.06