

## Supporting Information

### **The temperature-sensitive HA-anchoring supramolecular nanocarriers for targeted delivery of anti-liver cancer drug doxorubicin**

Hong-Xia Wang <sup>a</sup>, Bi-Lian Li <sup>a</sup>, Jian-Mei Yang <sup>a</sup>, Jun-Nan He <sup>a</sup>, Dan-Dan Wang <sup>a</sup>, Xiao-Qing Liu <sup>b</sup>, Yan Zhao <sup>\*a</sup>, Jin Zhang <sup>\*a</sup>

<sup>a</sup>College of Chemistry and Chemical Engineering, Yunnan Normal University, Kunming 650500, China

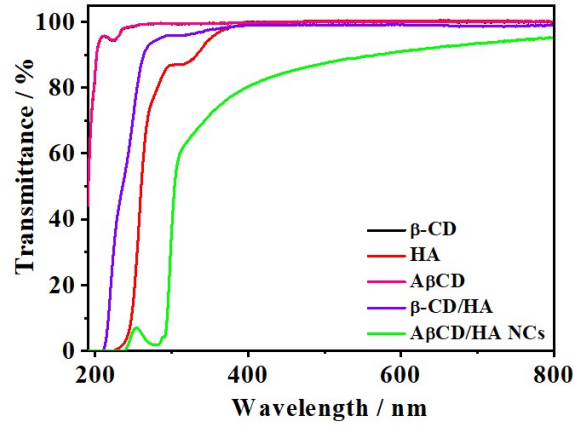
<sup>b</sup>Shenzhen Kewode Technology Co., Ltd, Shenzhen, China

Corresponding author: College of Chemistry and Chemical Engineering, Yunnan

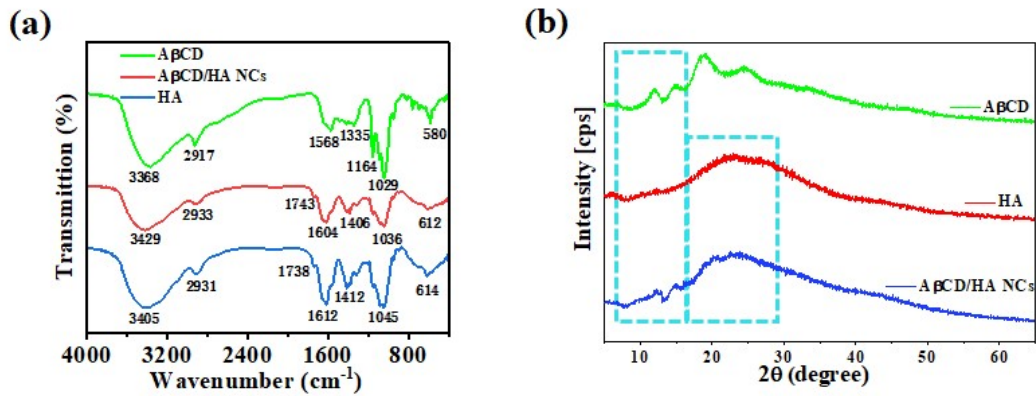
Normal University, Kunming, 650500, China. Tel./fax: +86 0871 65941089.

E-mail: [zhaoyann@163.com](mailto:zhaoyann@163.com)

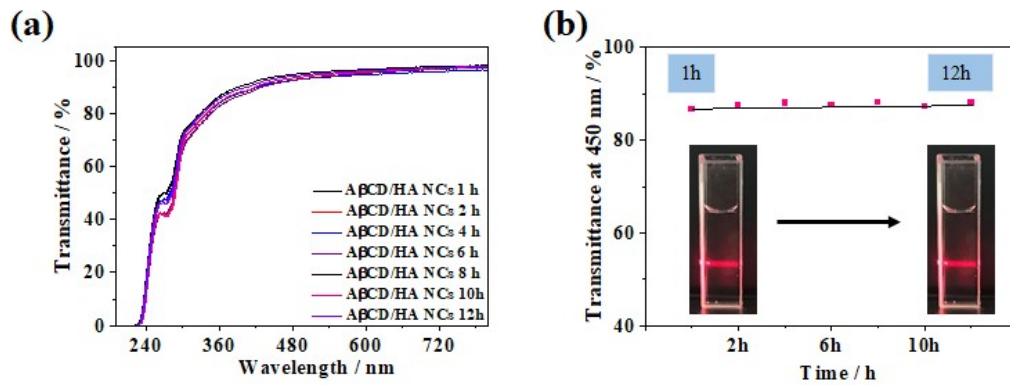
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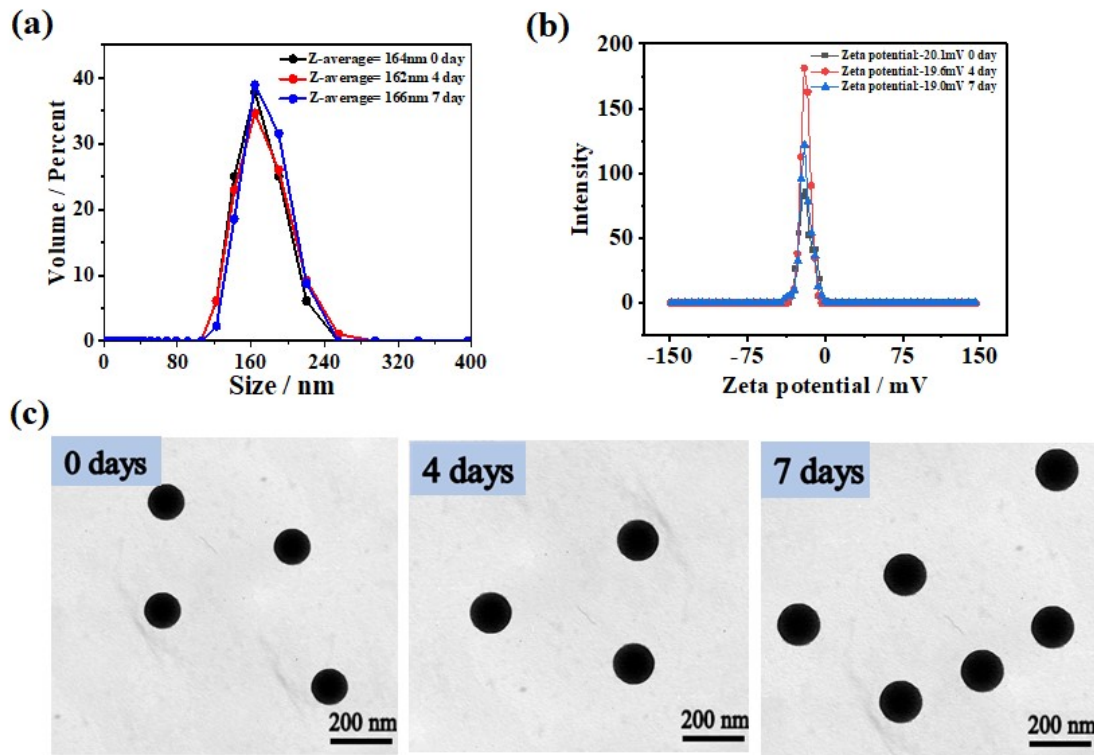
**Figure S1.** Transmittance of natural  $\beta$ -CD, HA,  $\alpha\beta$ CD,  $\beta$ -CD/HA, and  $\alpha\beta$ CD/HA NCs. [ $\beta$ -CD] = 4  $\mu\text{g/mL}$ , [HA] = 12  $\mu\text{g/mL}$ , [ $\alpha\beta$ CD] = 4  $\mu\text{g/mL}$ .



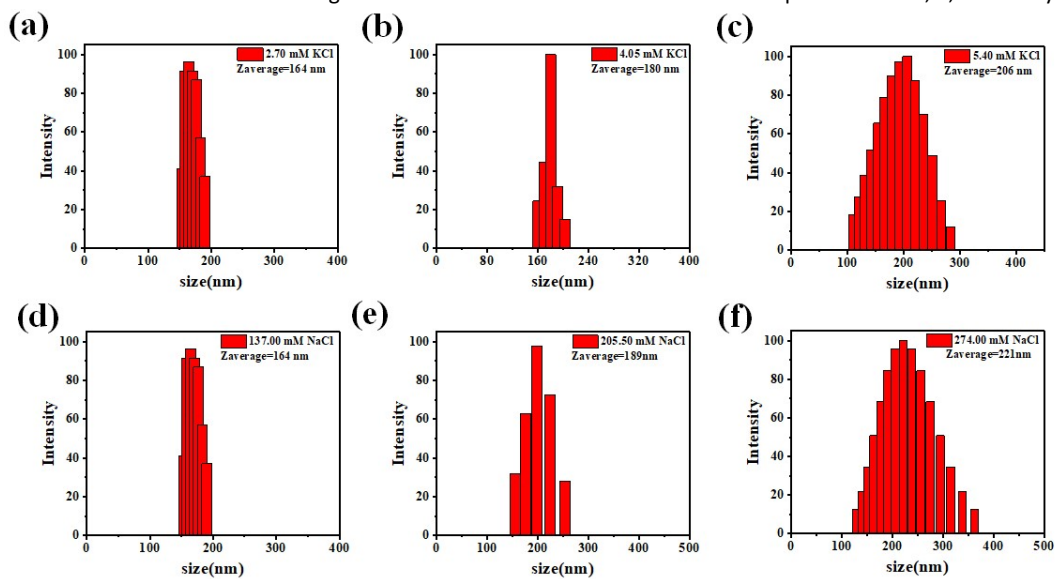
**Figure S2.** (a) FT-IR of  $\alpha\beta$ CD, HA and  $\alpha\beta$ CD/HA NCs. (b) XRD patterns of  $\alpha\beta$ CD, HA and  $\alpha\beta$ CD/HA NCs.



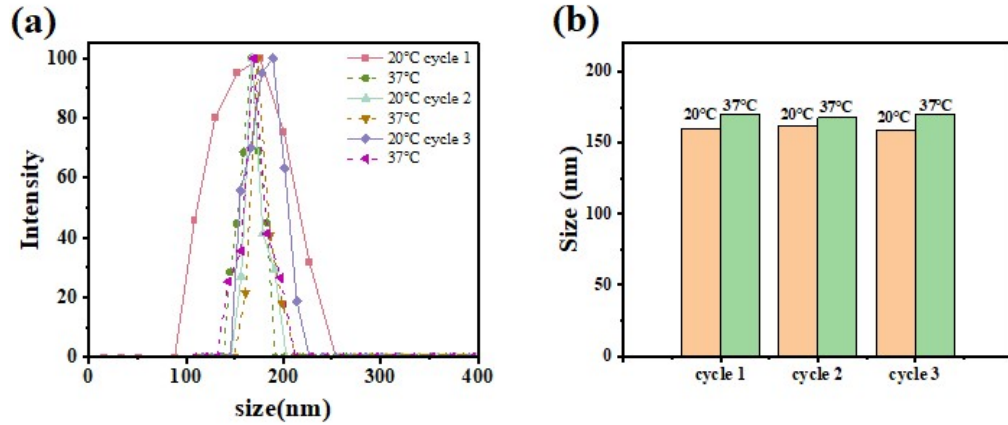
**Figure S3.** (a) The UV-Vis spectrum of  $\alpha\beta$ CD/HA NCs remains stationary for 1h to 12 h. (b) The change in transmittance at 450 nm with placement time is obtained from (a), inset: Tyndall effect from 1 h to 12 h.



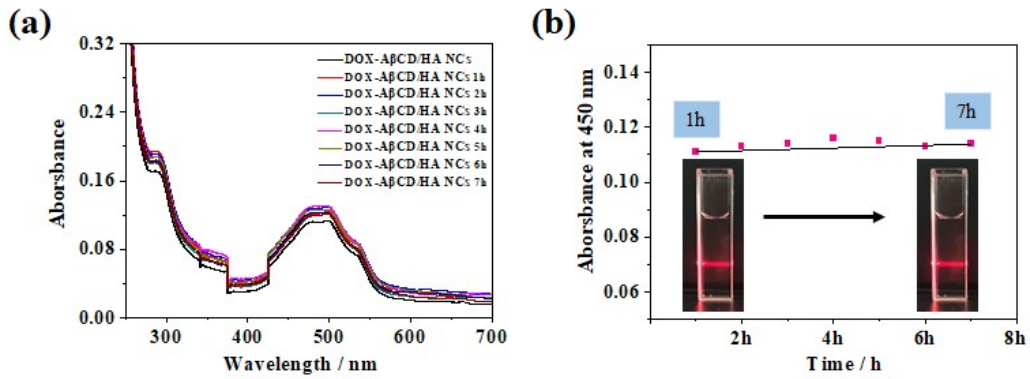
**Figure S4.** The DLS (a), Zeta potential (b), and TEM images (c) of A $\beta$ CD/HA NCs were obtained by keeping A $\beta$ CD/HA NCs in PBS buffer solution containing KCl of 2.70 mM and NaCl of 137.00 mM with pH of 7.4 for 0, 4, and 7 day.



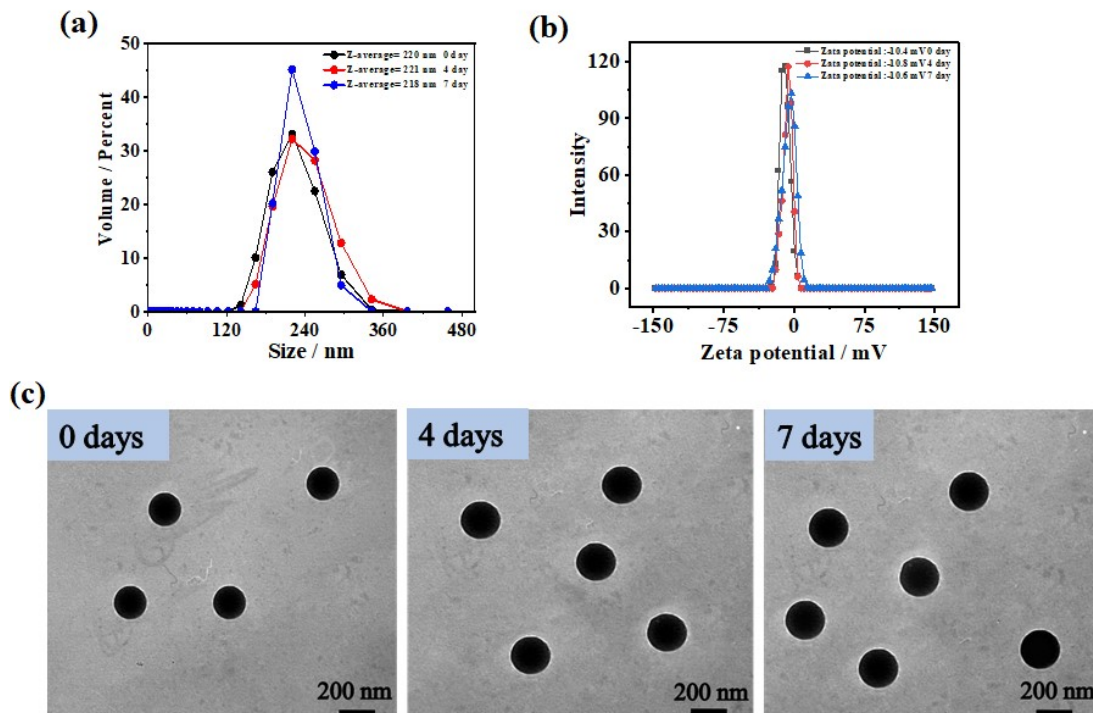
**Figure S5.** The stability study of A $\beta$ CD/HA NCs. The DLS results of A $\beta$ CD/HA NCs were achieved by immersing A $\beta$ CD/HA NCs in PBS buffer solution containing KCl and NaCl of 2.70 (a) to 4.05 (b) and 5.40 mM (c), 137.00 (d) to 205.50 (e) and 274.00 mM (f), respectively.



**Figure S6.** (a) Temperature-responsive properties of AβCD/HA NCs. (a) DLS results of AβCD/HA NCs were achieved by alternating temperature of AβCD/HA NCs solution between 20°C and 37°C. (b) Temperature-responsive cyclicality of AβCD/HA NCs were obtained according to (a). Note: each rising and lowering temperature procedure was adjusted for 30 min.

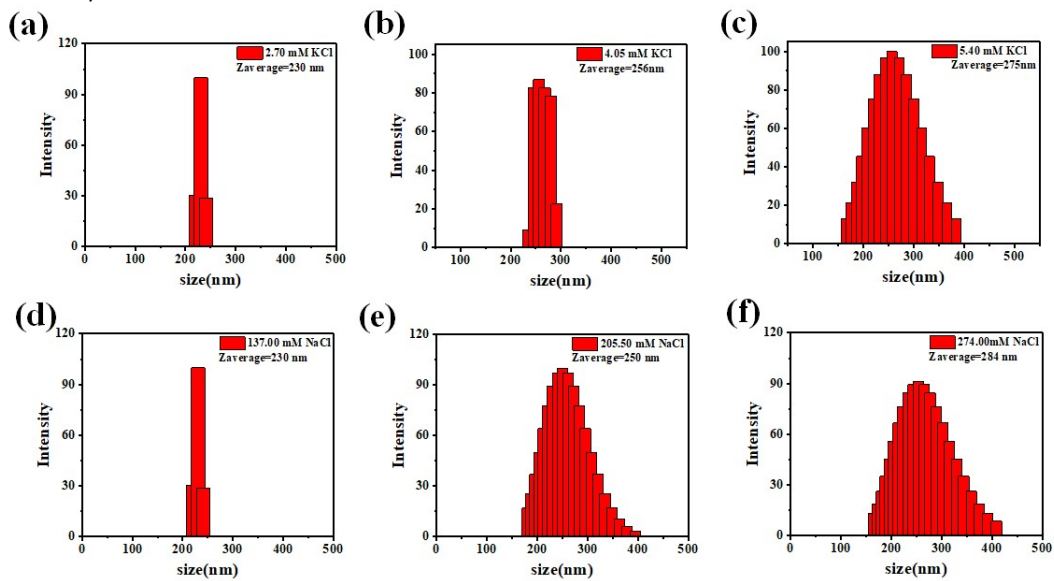


**Figure S7.** (a) The UV-Vis spectrum of DOX/AβCD/HA NCs remains stationary for 1 to 7 h. (b) The change in absorbance at 450 nm with placement time is obtained from (a), inset: Tyndall effect from 1 h to 7 h.

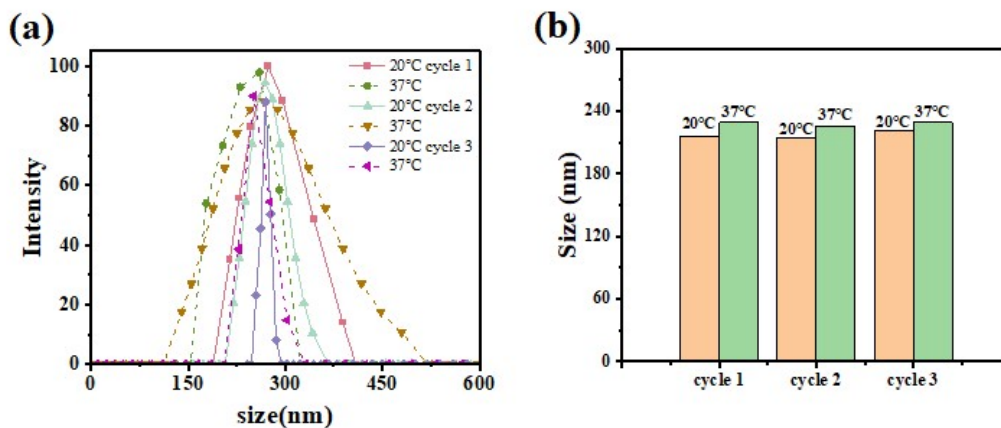


**Figure S8.** The DLS (a), Zeta potential (b), and TEM images (c) of DOX/AβCD/HA NCs were obtained by keeping

DOX/A $\beta$ CD/HA NCs in PBS buffer solution containing KCl of 2.70 mM and NaCl of 137.00 mM with pH of 7.4 for 0, 4, and 7 day.



**Figure S9.** The stability study of DOX/A $\beta$ CD/HA NCs. The DLS results of DOX/A $\beta$ CD/HA NCs were achieved by immersing DOX/A $\beta$ CD/HA NCs in PBS buffer solution containing KCl and NaCl of 2.70 (a) to 4.05 (b) and 5.40 mM (c), 137.00 (d) to 205.50 (e) and 274.00 mM (f), respectively.



**Figure S10.** (a) Temperature-responsive properties of DOX/A $\beta$ CD/HA NCs. (a) DLS results of DOX/A $\beta$ CD/HA NCs were achieved by alternating temperature of DOX/A $\beta$ CD/HA NCs solution between 20°C and 37°C. (b) Temperature-responsive cyclicality of DOX/A $\beta$ CD/HA NCs were obtained according to (a). Note: each rising and lowering temperature procedure was adjusted for 30 min.