

Supplementary material

Formulations	Functional groups	Frequency (cm ⁻¹)
A	NH ₂ and OH groups	2900-3500
	Carbonyl group (C=O)	1000-1300
D	C=O group	1600-1700
	OH group	3400
AD	NH ₂ and OH groups of A	3500
	C=O group of D	1700
B	CH and OH groups	2900-3500
	C=O group	1700
BD	OH group of B	3400
	C=O groups of B and A	1700
K	NH ₂ and OH groups	2900-3500
	C-O group	1000-1200
AK	OH group of K and A	3500
	OH and NH ₂ groups of K and A	2900-3500
	C=O group of A	1700
	C=O group of A and K	1000-1200
BK	OH group of K and B, NH ₂ group of K	2800-3500
	NH ₂ group of K	2900-3000
	C=O group of B	1700
	C-O group of K	1000-1200

Table S1 The FTIR spectra of various formulations

Table S2 HNMR spectra related to various formulations

Formulations	Region (ppm)
AD	2-3, related to carbonyl groups (CH-C=O) of D and A
	3-4, related to C-O group of A and D
	5-6, related to C=C group of A
AK	2-3, related to carboxyl group (CHCOOH) of A
	3-4, related to CH-O group of K or A
	6-7, related to alkene group (C=C) of A
BD	2-3, related to CH-C=O of D
	3-4, related to C-O group of D
	4-5, related to C=C group of B
BK	2-3, related to NH_2 and OH (alcoholic group) of K
	3-4, related to CH group of K, NH_2 and alcoholic group (OH) of B and K
	4-5, related to C=C group of B
	12, related to OH of C=O group of B

Figure S1 The standard curve of amphotericin B. The curve was prepared by using different concentrations of amphotericin B at the wavelength of 405 nm.

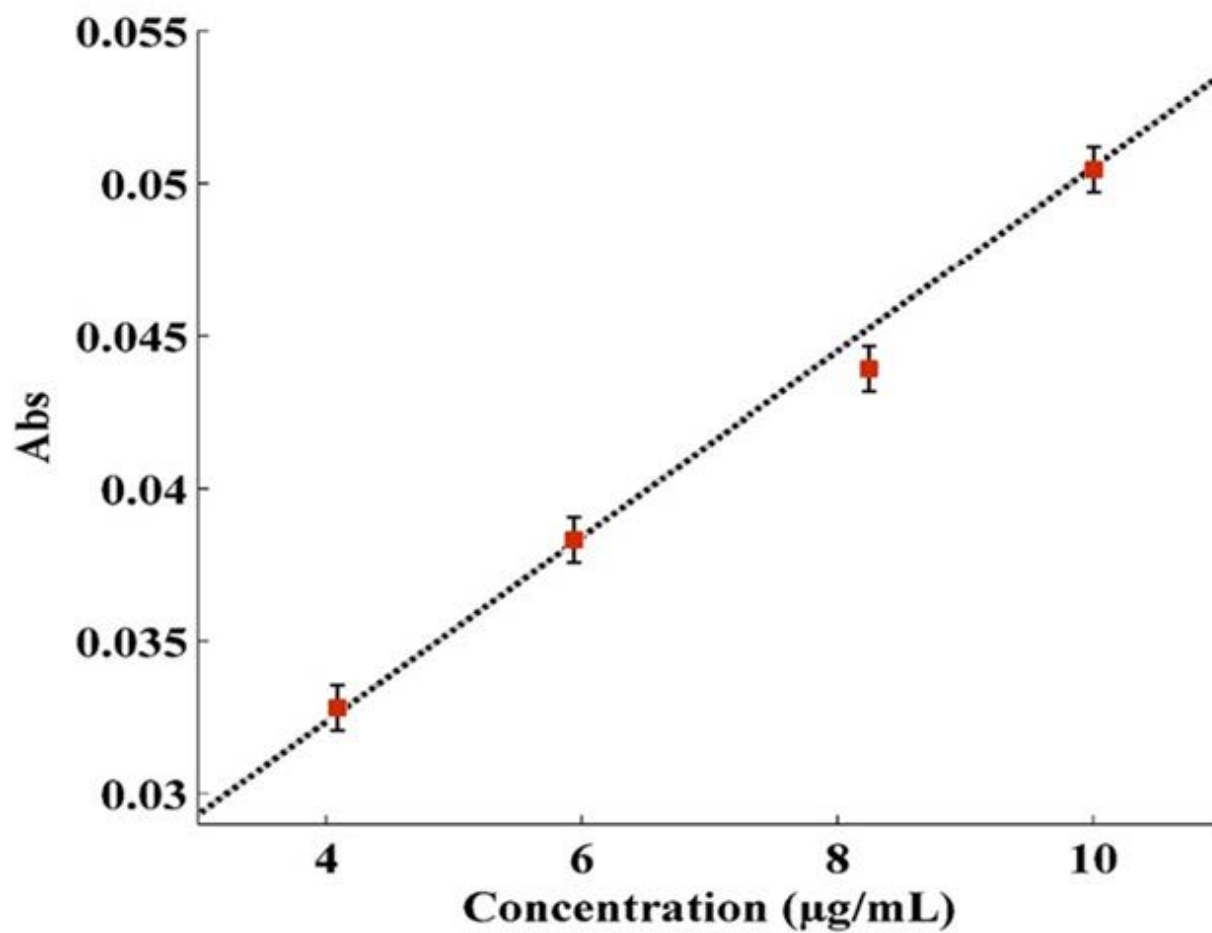


Figure S2 The standard curve of betulinic acid. The curve was prepared by using different concentrations of betulinic acid at the wavelength of 254 nm.

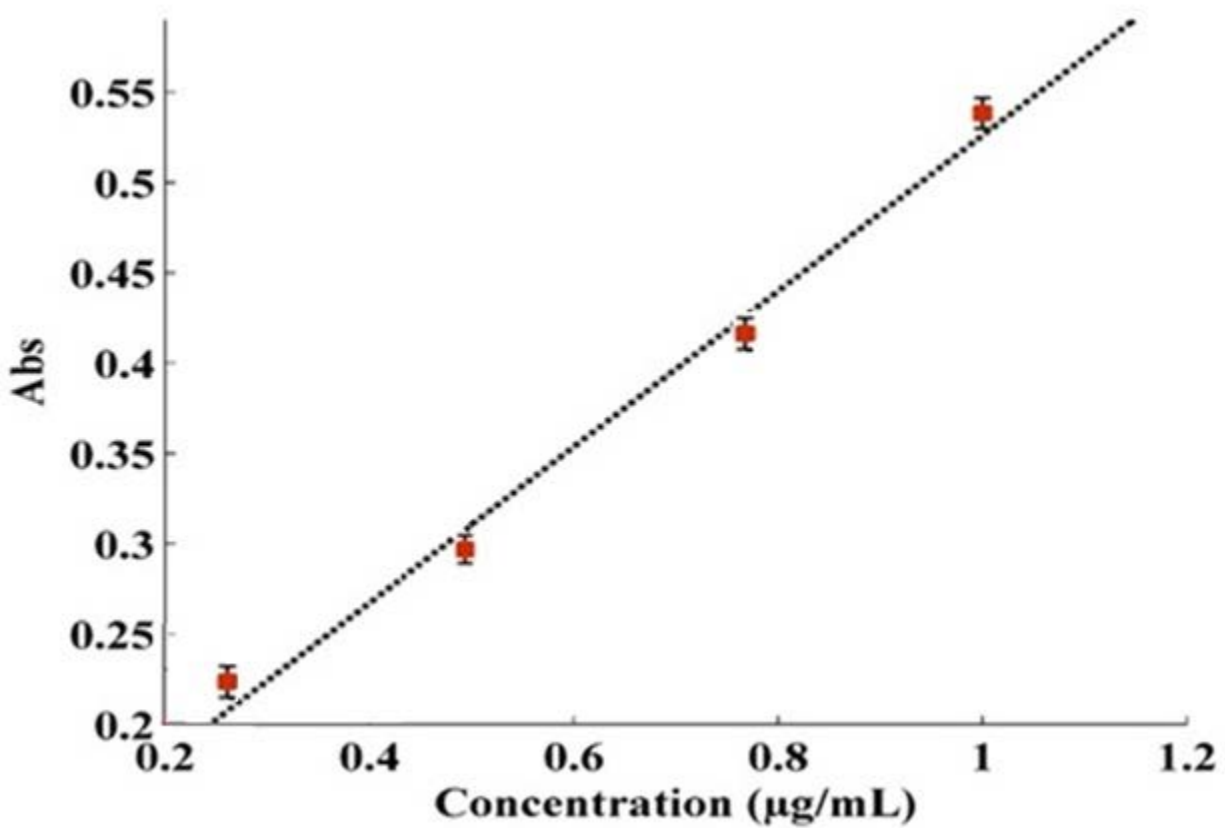


Figure S3 TEM micrograph of nanochitosan.

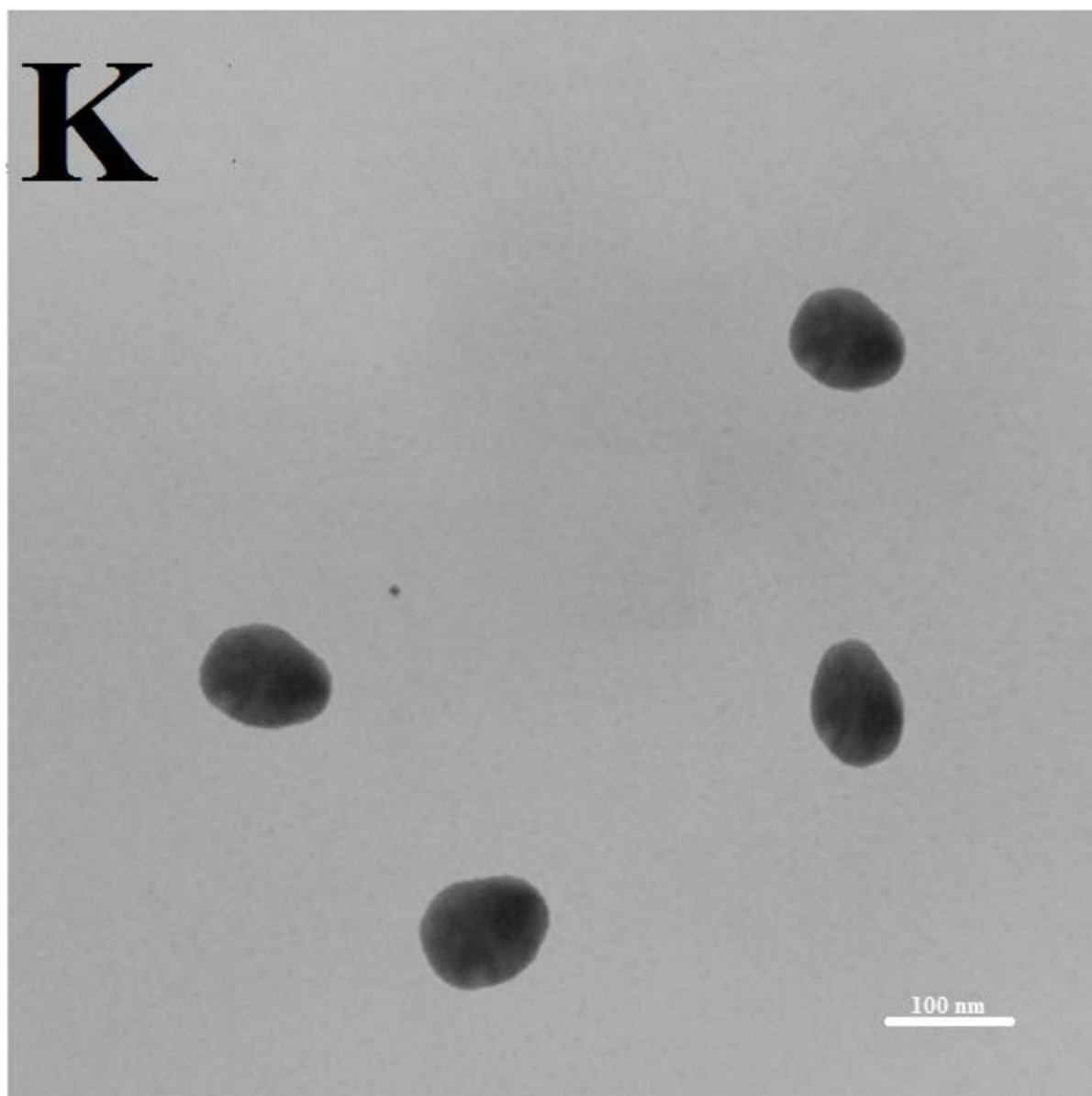


Figure S4 The three dimensional of AFM micrograph for nanochitosan (K) and ALGD (D).

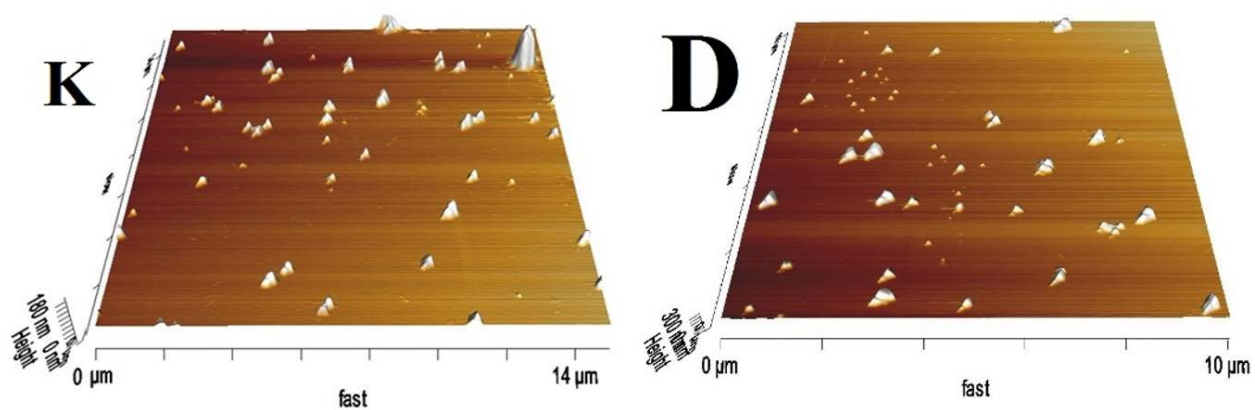


Figure S5 FTIR spectrum of dendrimer (D) and nanochitosan (K). The related peaks of the compounds are existed in the spectra.

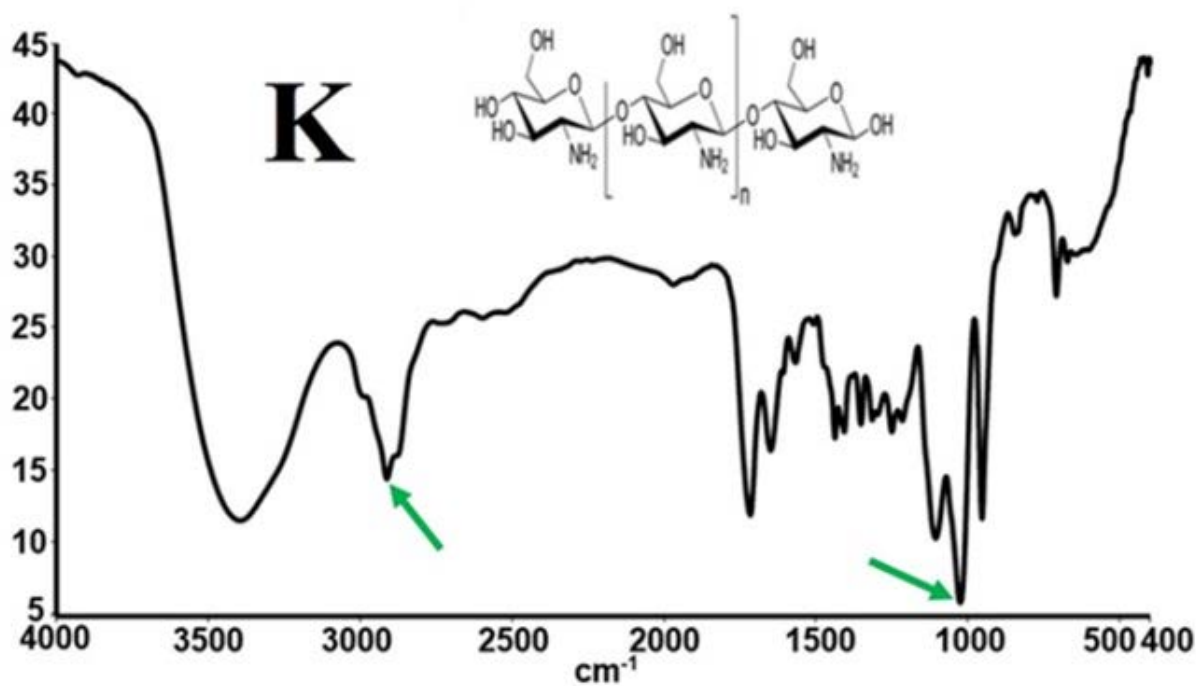
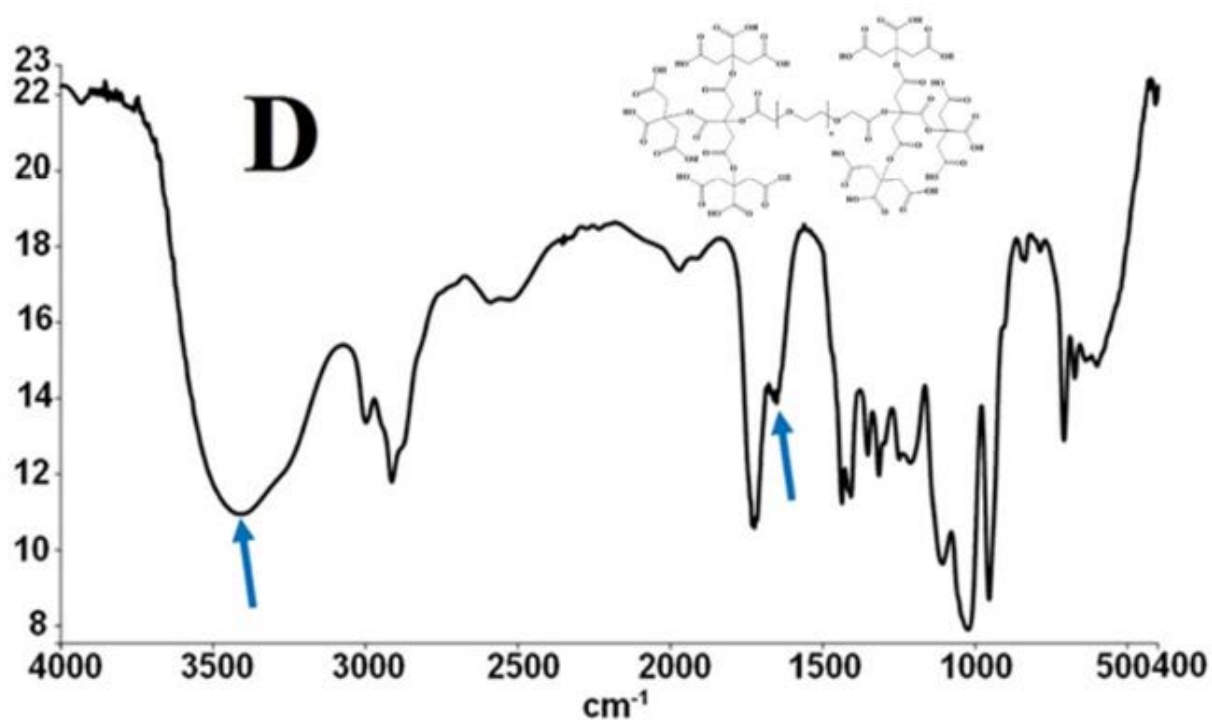


Figure S6 The solubility rate of nanodrugs AK and BK in two solvents including spp and designed solvent containing acetic acid. SPP is the solvent prepared based on previous studies, A.A is representative of acetic acid.

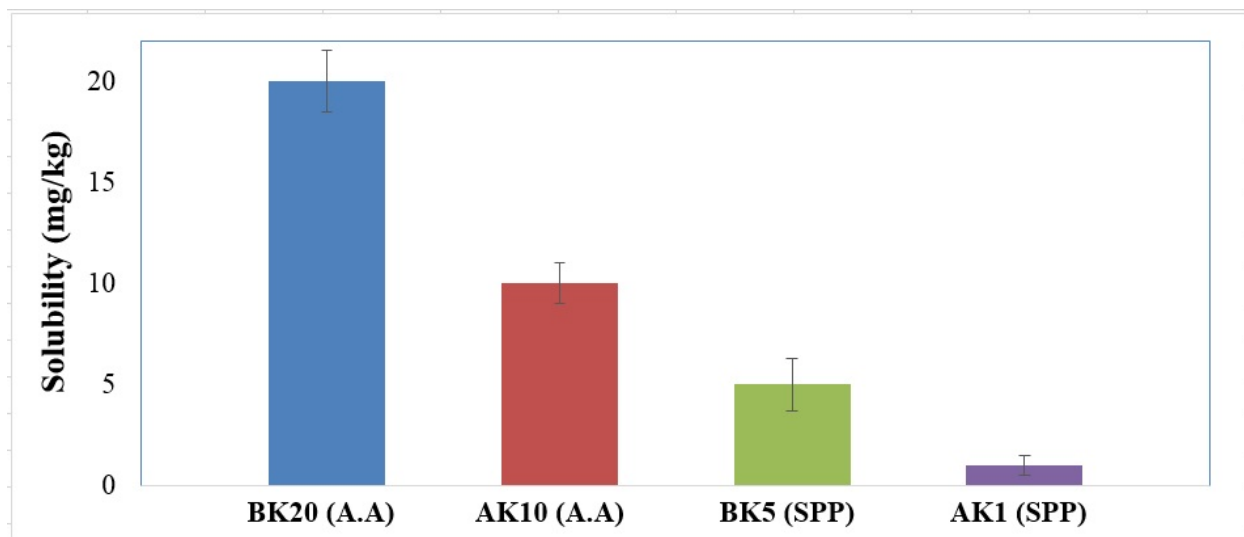


Figure S7 Melting curve of the amplified fragment of SODB1 gene.

