

1 **Figure captions:**

2 Hongshan Liang, Huazhong Agriculture University.

3

4 Figure S1. The effect of pH from 2.6 to 11.0 on zein-CMC NPs prepared at zein :
5 CMC ratio of 1 : 3. Digital photographs and zeta potential of the NPs and CMC with
6 different pH were shown inset. Data displayed as mean±SD (n=3).

7

8 Figure S2. Fourier transform infrared spectroscopy (FTIR) spectra of different
9 samples. Zein, zein powder; CMC, sodium carboxymethyl cellulose powder; PTX,
10 paclitaxel powder; NPs, zein-CMC nanoparticles prepared using zein : CMC ratio of 1 :
11 3 w/w; PTX-NPs, paclitaxel-loaded zein-CMC nanoparticles prepared using zein :
12 CMC ratio of 1 : 3 w/w at paclitaxel concentration of 80µg ml⁻¹.

13

14 Figure S3. XRD patterns of different samples. Zein, zein powder; PTX, paclitaxel
15 powder; NPs, zein-CMC nanoparticles prepared using zein : CMC ratio of 1 : 3 w/w;
16 PTX-NPs, paclitaxel-loaded zein-CMC nanoparticles prepared using zein : CMC ratio
17 of 1 : 3 w/w at paclitaxel concentration of 80µg ml⁻¹.

18

19

20

21

22

23 **Table S1**

24

Table S1 Optimization of zein-CMC NPs.

Samples	particle size(nm)	PDI	Zeta potential(mV)
Z/CMC 2:1	141.0±3.5	0.27±0.00	-50.4±1.68
Z/CMC 1:1	166.9±2.1	0.27±0.01	-51.9±0.51
Z/CMC 1:2	199.5±4.0	0.31±0.02	-53.6±0.51
Z/CMC 1:3	135.3±1.4	0.26±0.01	-54.5±1.36
Z/CMC 1:4	208.9±4.2	0.27±0.01	-58.3±0.59

25 Samples represent formulations with different mass ratios of zein-CMC.PDI, polydispersity. Data

26 displayed as mean ± SD (n=3).

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41 **Table S2**

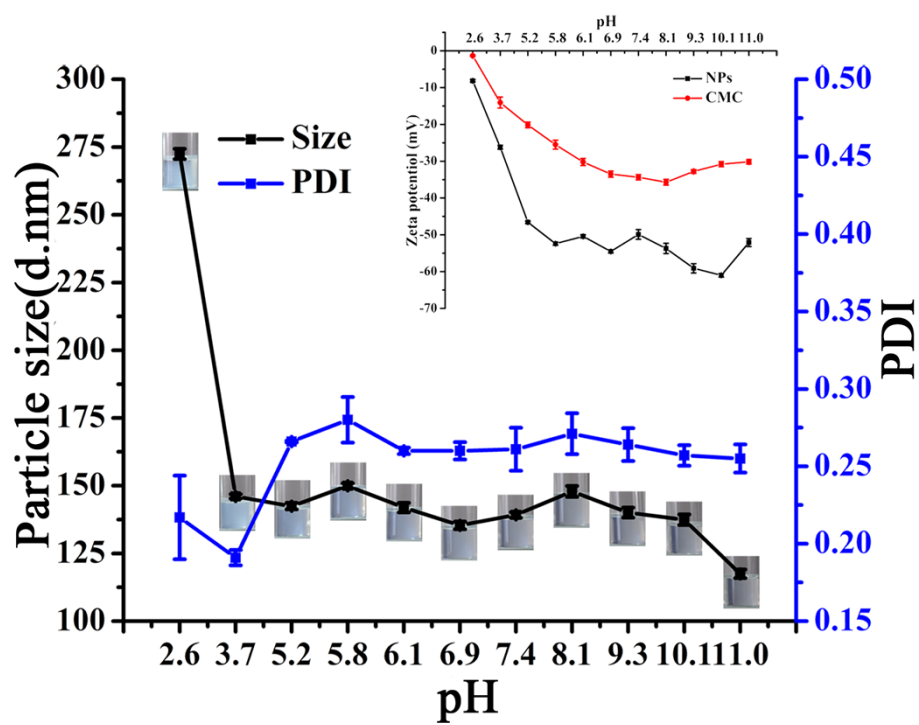
42 Table S2 IC₅₀ of HeLa and HepG2 cells after 24h or 48h of incubation with free PTX
 43 and PTX-NPs

Group		IC ₅₀ (μg/mL)	
		24 h	48 h
PTX	HeLa	1.85 ± 0.19	0.07 ± 0.01
	HepG2	0.39 ± 0.03	0.02 ± 0.01
PTX-NPs	HeLa	2.98 ± 0.32**	0.17 ± 0.01***
	HepG2	1.46 ± 0.16***	0.38 ± 0.05***

44 Data displayed as mean ± SD (n=3). **p < 0.01; ***p < 0.001; versus PTX group.

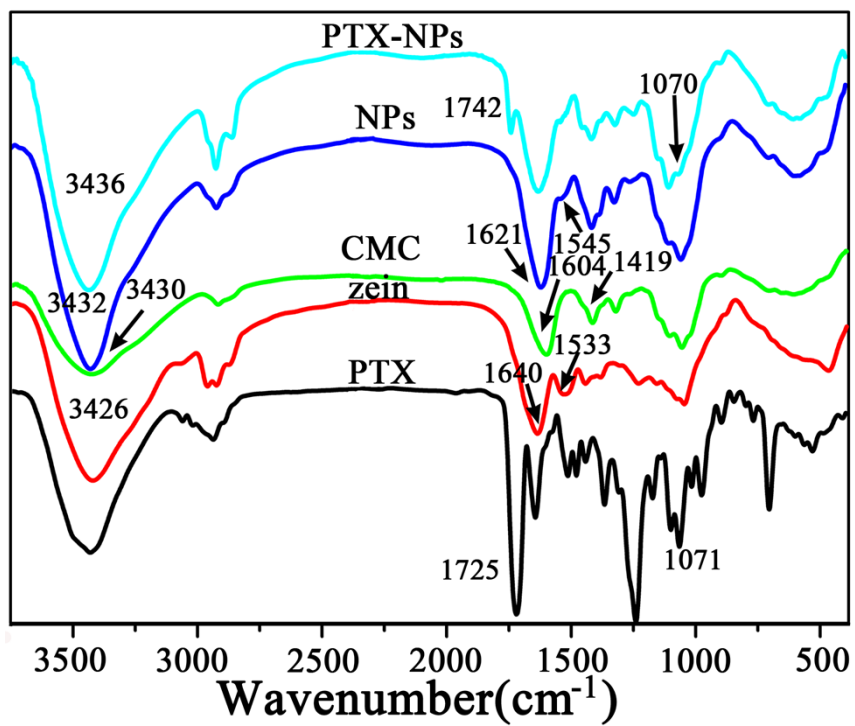
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77

78 **Figure S1.**



79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104

105 **Figure S2.**



106

107

108

109

110

111

112

113

114

115

116

117

118

119

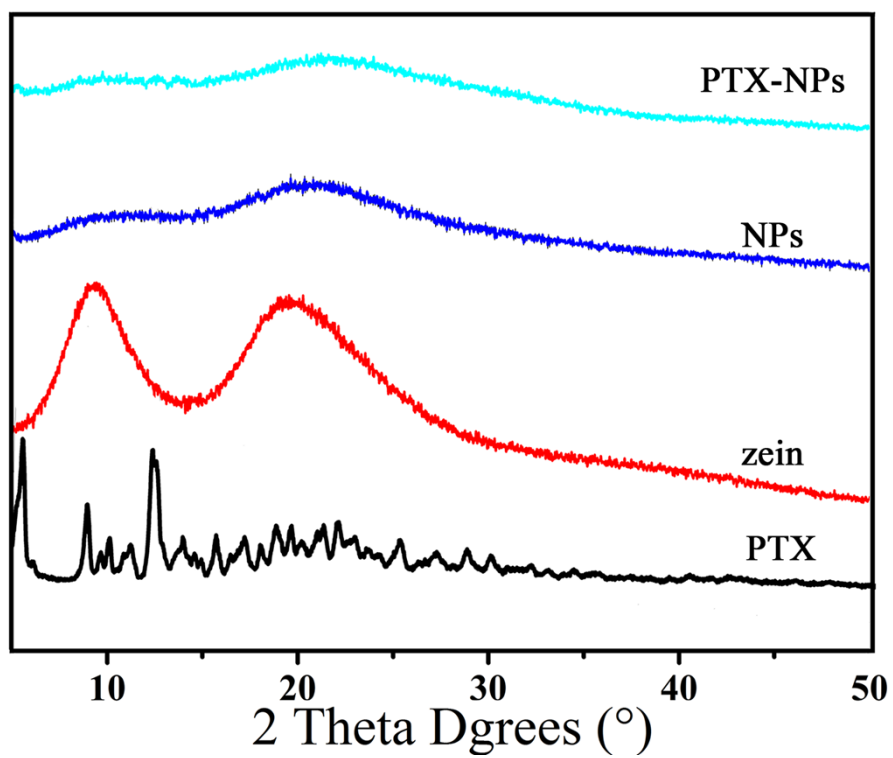
120

121

122

123

124 **Figure S3.**



125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144