

**Electronic Supplementary Information**

**Nanocarrier-pesticide delivery system with promising benefits in a case of dinotefuran: strikingly enhanced bioactivity and reduced pesticide residue**

Qinhong Jiang,<sup>a</sup> Yonghui Xie,<sup>b</sup> Min Peng,<sup>c</sup> Zhijiang Wang,<sup>b</sup> Tianjiao Li,<sup>d</sup> Meizhen Yin,<sup>c</sup> Jie Shen,<sup>\*a</sup> and Shuo Yan<sup>\*a</sup>

<sup>a</sup> *Department of Plant Biosecurity and MOA Key Laboratory of Pest Monitoring and Green Management, College of Plant Protection, China Agricultural University, Beijing 100193, P.R. China*

<sup>b</sup> *Kunming Branch of Yunnan Provincial Tobacco Company, Kunming 650051, P.R. China*

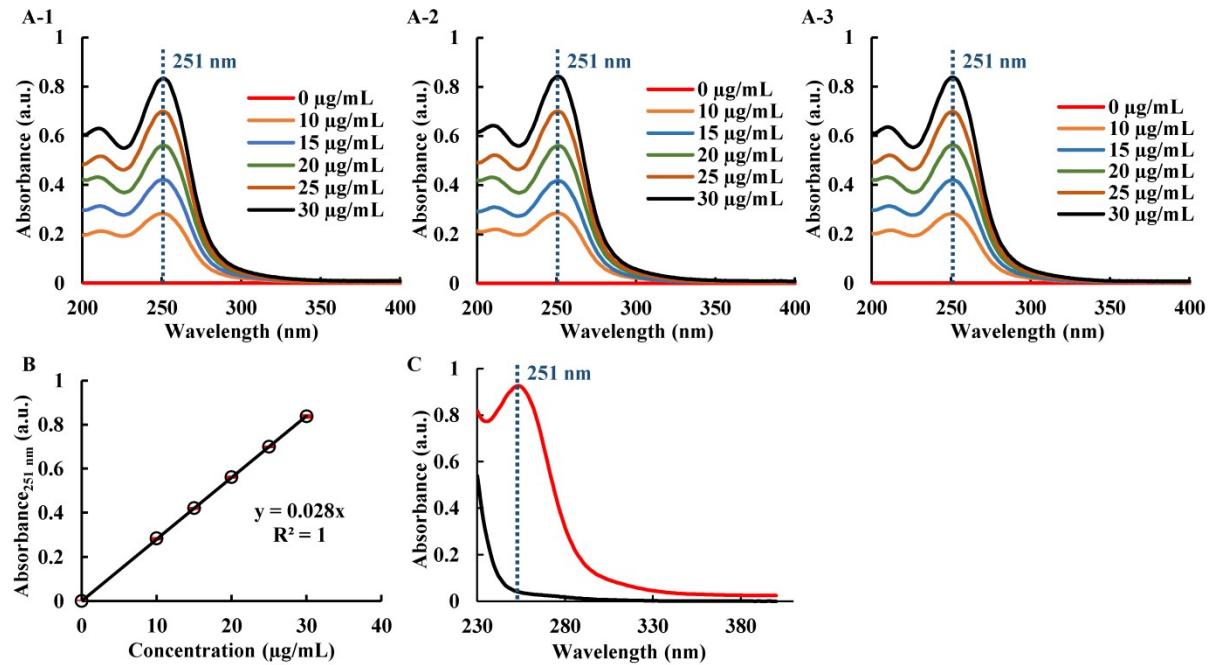
<sup>c</sup> *State Key Laboratory of Chemical Resource Engineering, Beijing Lab of Biomedical Materials, Beijing University of Chemical Technology, Beijing 100029, P.R. China*

<sup>d</sup> *National Agricultural Technology Extension and Service Center, Beijing 100125, P.R. China*

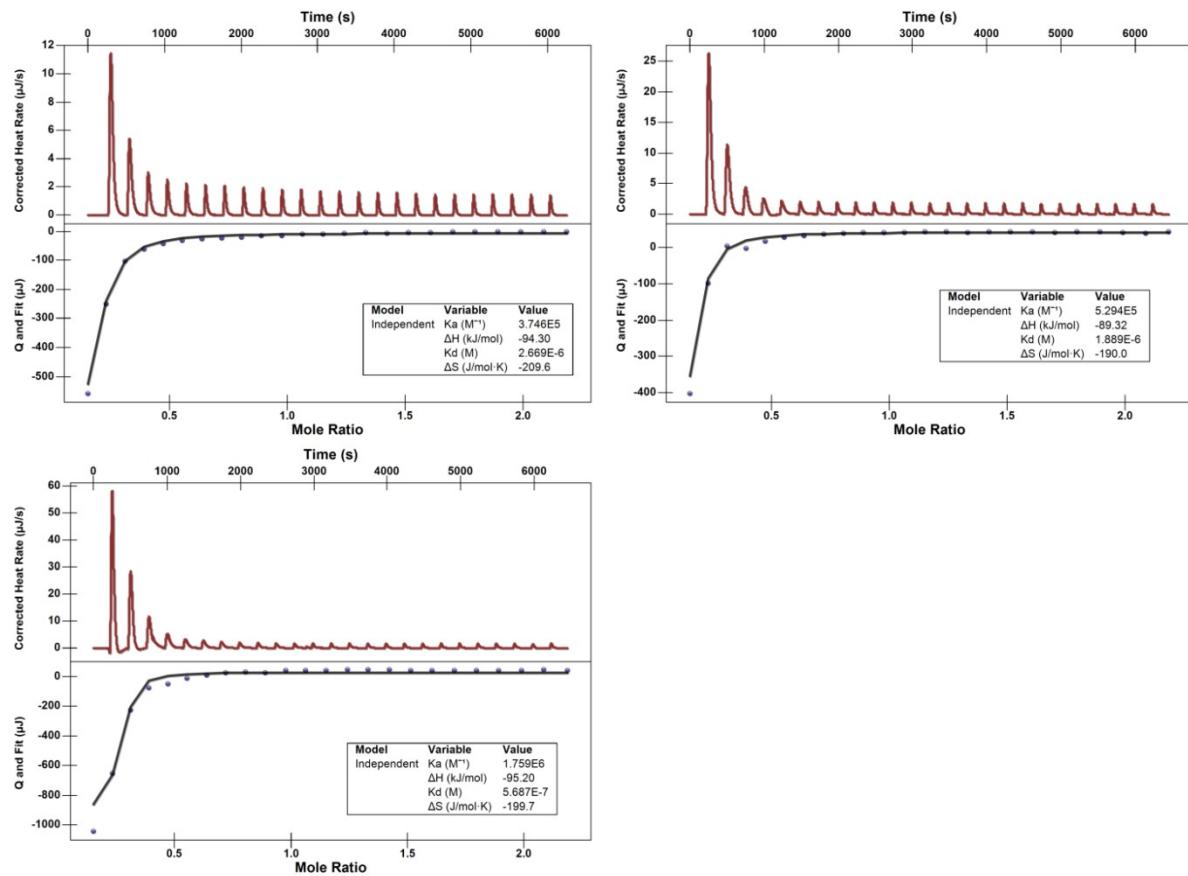
\* Corresponding author. E-mail address: yanshuo2011@foxmail.com or shenjie@cau.edu.cn

*Qinhong Jiang and Yonghui Xie have contributed equally to this work*

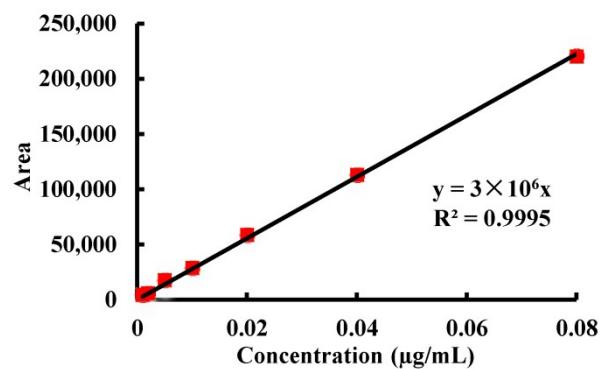
**Fig. S1** Loading capacity of SPc toward dinotefuran. (A) Absorbance spectrum of dinotefuran with various concentrations, which was repeated 3 times. (B) Standard calibration curve of dinotefuran. (C) Absorbance spectrum of dinotefuran/SPc complex and SPc.



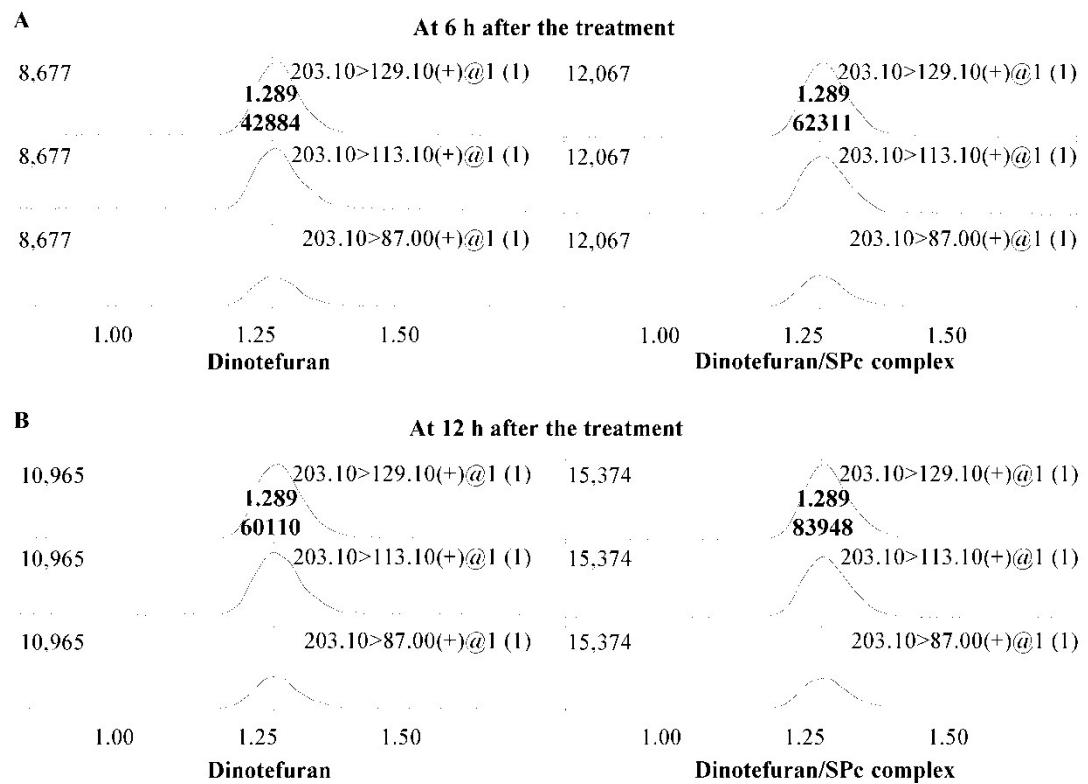
**Fig. S2** ITC titration of SPc into dinotefuran solution for three times.



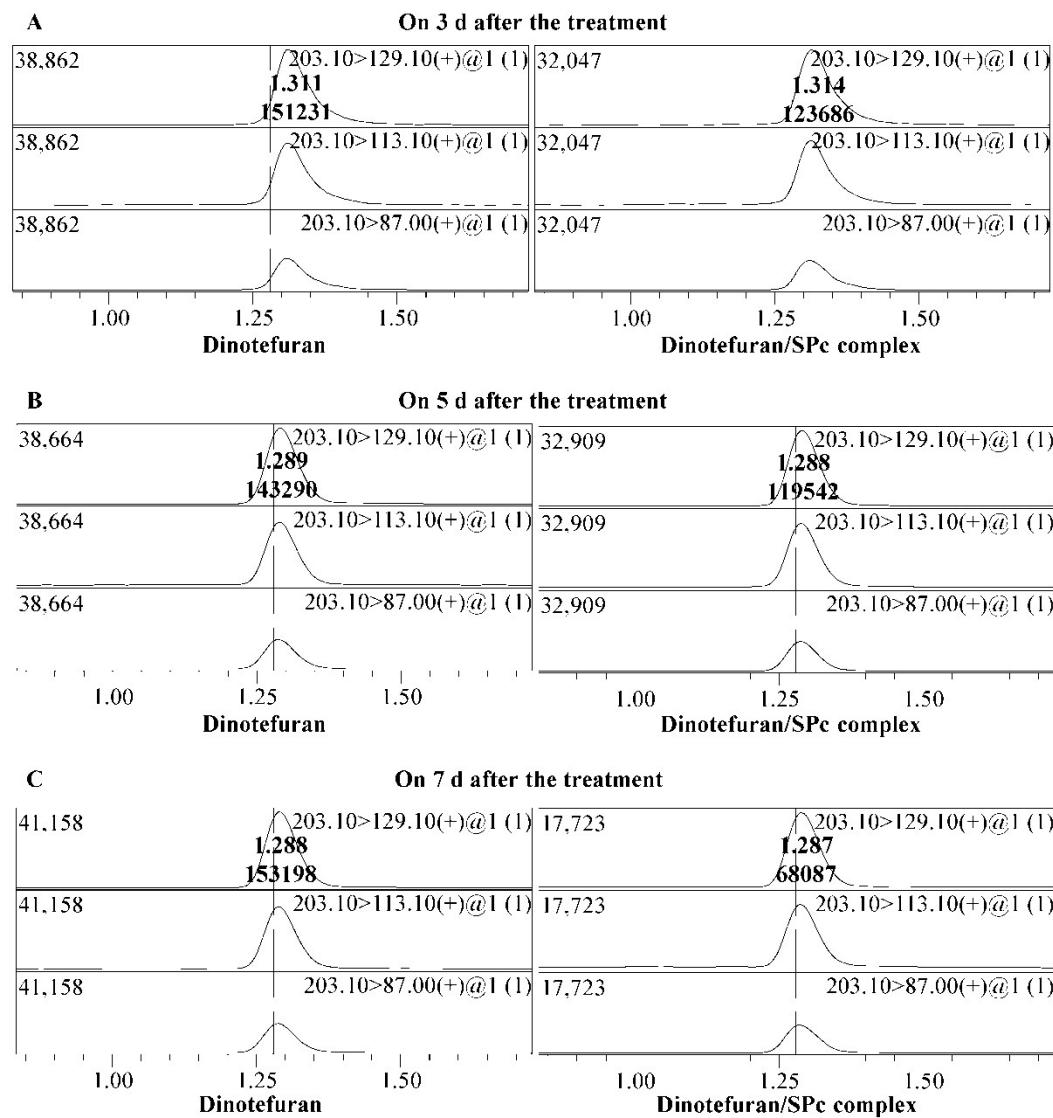
**Fig. S3** Standard calibration curve of dinotefuran for liquid chromatography-tandem mass spectrometry.



**Fig. S4** Original spectrum of liquid chromatography-tandem mass spectrometry data for determining dinotefuran content in oilseed rapes at 6 (A) and 12 h (B) after the treatment.



**Fig. S5** Original spectrum of liquid chromatography-tandem mass spectrometry data for determining dinotefuran residue in oilseed rapes on 3 (A), 5 (B) and 7 d (C) after the treatment.



**Fig. S6** Effects of dinotefuran/SPc complex on agronomic traits of oilseed rapes on 7 d after the treatment. Each treatment contained 4 oilseed rapes, which was repeated 4 times. The “ns” indicates no significant difference according to the independent *t* test ( $P > 0.05$ ).

