

Supplementary material

Simultaneous Detoxification of Aflatoxin B₁, Zearalenone and Deoxynivalenol by Modified Montmorillonites

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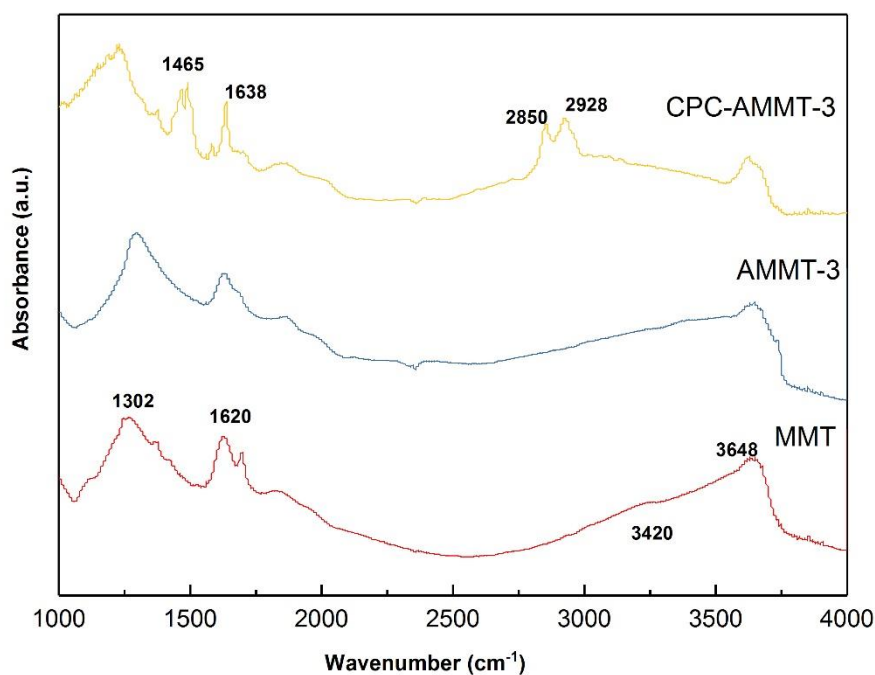


Figure S1. DRFTIR spectra of MMT, AMMT-3 and CPC-AMMT-3.

Figure S1 are the diffuse reflectance infrared spectra of MMT, AMMT-3 and CPC-AMMT-3 in the wavenumber range of 4000-1000 cm^{-1} . It can be seen from **the** Figure S1 that the strong absorption peak at 1302 cm^{-1} in the infrared spectra of MMT and AMMT-3 samples is attributed to the stretching vibration of montmorillonite Si-O, including two forms of in-plane and out-of-plane

vibration. The absorption peak at 1620 cm^{-1} is attributed to the -OH bending vibration peak of the interlayer water of montmorillonite, while the stretching vibration peak appears at 3420 cm^{-1} . The absorption peak at 3648 cm^{-1} is produced by the -OH stretching vibration connected to aluminum in the octahedron. By comparing MMT and AMMT-3, it can be seen that the intensity of -OH peaks in the CPC-AMMT-3 at 1620 cm^{-1} and 3420 cm^{-1} was obviously weakened, which means that the interlayer water in the organic-modified montmorillonite is greatly reduced. Moreover, many new absorption peaks related with CPC in CPC-AMMT-3 can be observed. The absorption peak at 1465 cm^{-1} can be attributed to the bending vibration of -CH_2 in the alkyl chain, and its symmetrical and asymmetrical stretching vibration peaks are located at 2850 cm^{-1} and 2928 cm^{-1} , respectively. The peak at 1638 cm^{-1} is formed by the C=C and C=N stretching vibrations on the pyridine ring. The result indicates that AMMT-3 was modified by CPC, resulting in the hydrophobicity being obviously enhanced.

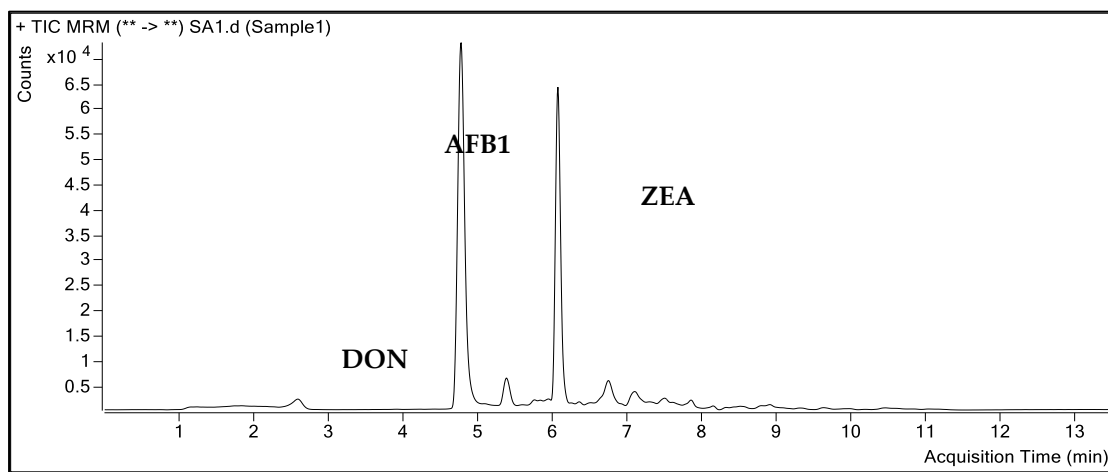


Figure S2. Sample Chromatogram.

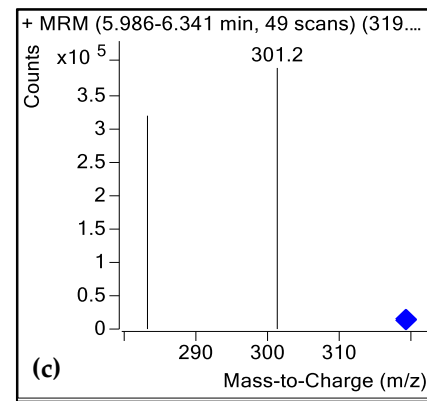
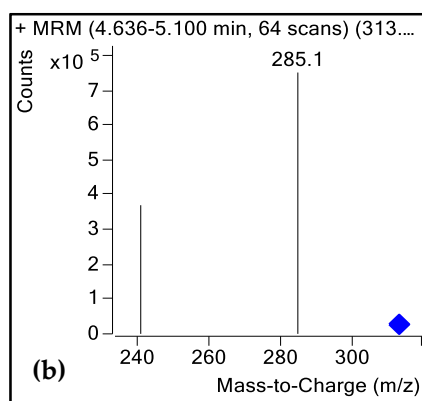
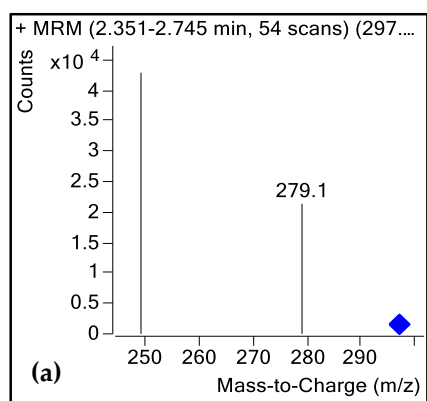


Figure S3. Mass spectras of DON (a), AFB1 (b) and ZEA (c).