

# Supporting information

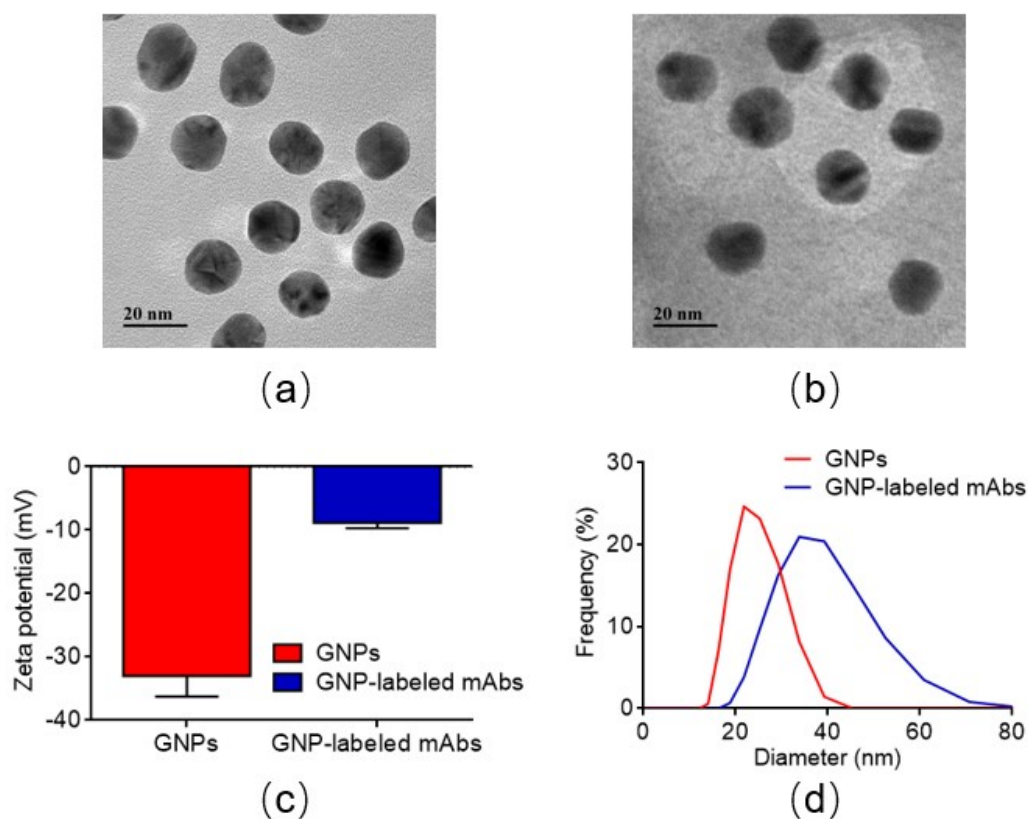
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## 2 *LC-MS/MS conditions and methods*

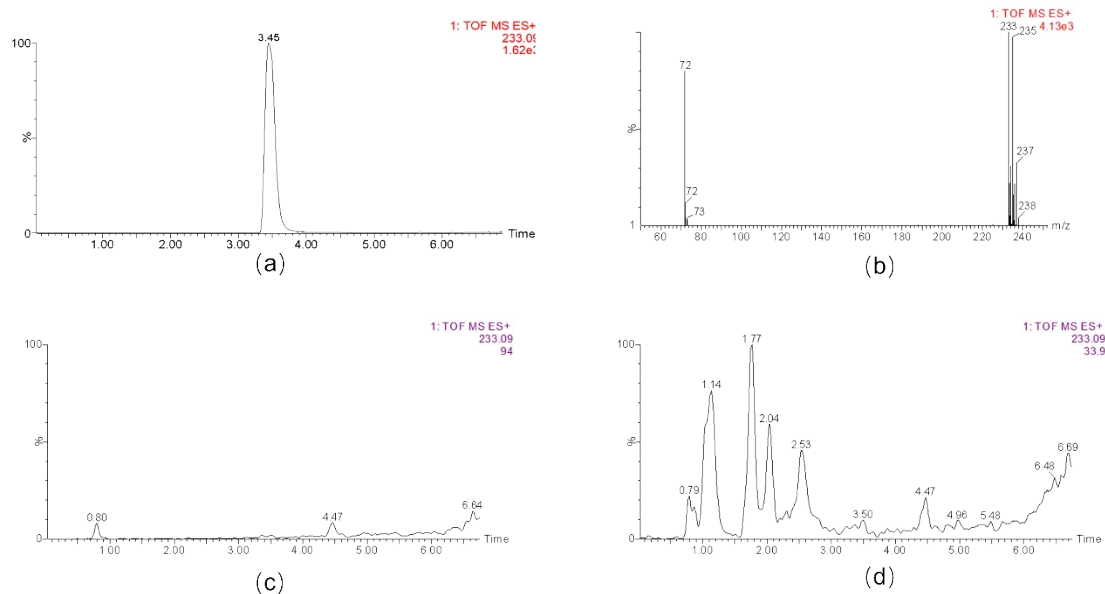
3 LC-MS was performed on a Waters Quattro Premier XE, equipped with an  
4 electrospray ionization (ESI) source. The analytical column used was a BEH C18  
5 column (150 mm × 2.1 mm, 1.7 μm). The operation conditions were as follows: flow  
6 rate, 0.3 mL/min; injection volume, 5 μL; and column temperature, 45°C. The mobile  
7 phases were 100% acetonitrile (A) and 0.1% formic acid in ultrapure water (v/v) (B): 0  
8 min, 95% B; 6 min, 5% B; 7 min, 5% B; 7.1 min, 95% B; 10 min, 95% B. All  
9 chromatographic separation processes are carried out under a gradient elution program.

10 The MS detection was performed by electrospray in positive ion mode (ESI+).  
11 The ions were detected by MSE with a scan range of  $m/z$  50-2000 and the parameters  
12 were set as follow: the ion source block temperature, 100°C; capillary voltage, 3500 V;  
13 desolvation gas temperature, 400°C; desolvation gas flow, 700 L/h; the cone voltage,  
14 30 V and the collision energies were 6e V and 20e V.

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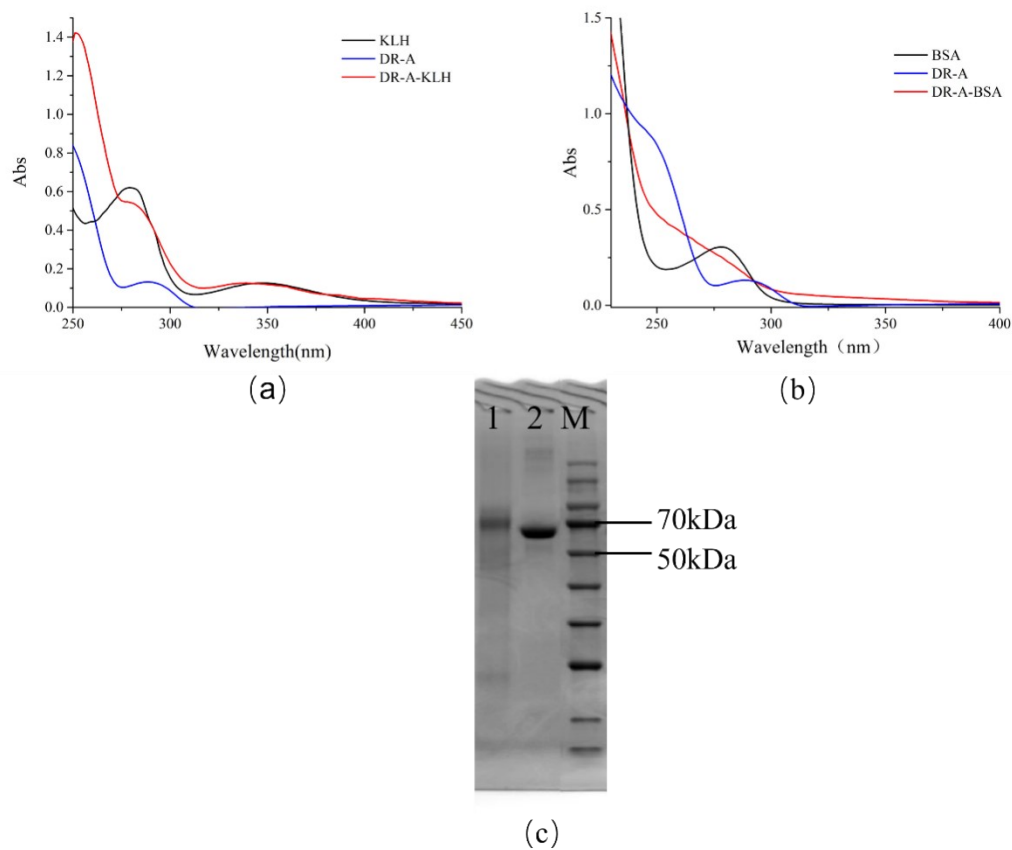


**Figure S1.** (a) characterization of colloidal GNPs; (b) characterization of GNP-labeled mAbs; (c) zeta potential of GNPs and GNP-labeled mAbs; (d) DLS size of GNPs and GNP-labeled mAbs.



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2 **Figure S2.** The detection results of blank samples by LC-MSMS. (a) and (b) the  
3 detection results of standard solution; (c) the detection results of water samples; (d)  
4 the detection results of sugarcane samples.

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2 **Figure S3.** UV-Vis absorption spectra of DR-A, proteins and conjugates. (a)  
3 confirmation of immunogen(DR-A-KLH); (b) confirmation of coating antigen (DR-A-  
4 BSA); (c) the result of SDS-PAGE for DR-A-BSA(M, maker;1, DR-A-BSA; 2, BSA).  
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