Table S1 Average IC_{50} and mP_{max}/IC_{50} values of FPIA in BB solutions containing different concentrations of NaCl (n = 3)

Ionic strength (M)	mP_{max}	IC_{50} (ng mL^{-1})	mP_{max}/IC_{50}
0.1	105	18.74	5.60
0.2	99.3	21.52	4.61
0.4	104	24.65	4.22
0.6	103	30.37	3.39
0.8	106	23.03	4.60
1.0	108	22.86	4.72

Table S2 Average IC_{50} and mP_{max}/IC_{50} values of FPIA in BB solutions with various pH (n = 3)

pH	mP_{max}	IC_{50} (ng mL^{-1})	mP_{max}/IC_{50}
4.4	650	151.20	4.30
5.4	208	16.93	12.29
6.4	98.7	38.46	2.57
7.4	106	19.21	5.52
8.4	102	29.07	3.51
9.4	104	22.55	4.61

Table S3 Average IC_{50} and mP_{max}/IC_{50} values of FPIA in BB solutions containing different concentrations of methanol (n = 3)

Concentrations of methanol	mP_{max}	IC_{50} (ng mL^{-1})	mP_{max}/IC_{50}
0%	196	18.26	10.73
5%	202	16.13	12.52
10%	189	23.87	7.92
20%	137	27.04	5.07
30%	168	19.80	8.48

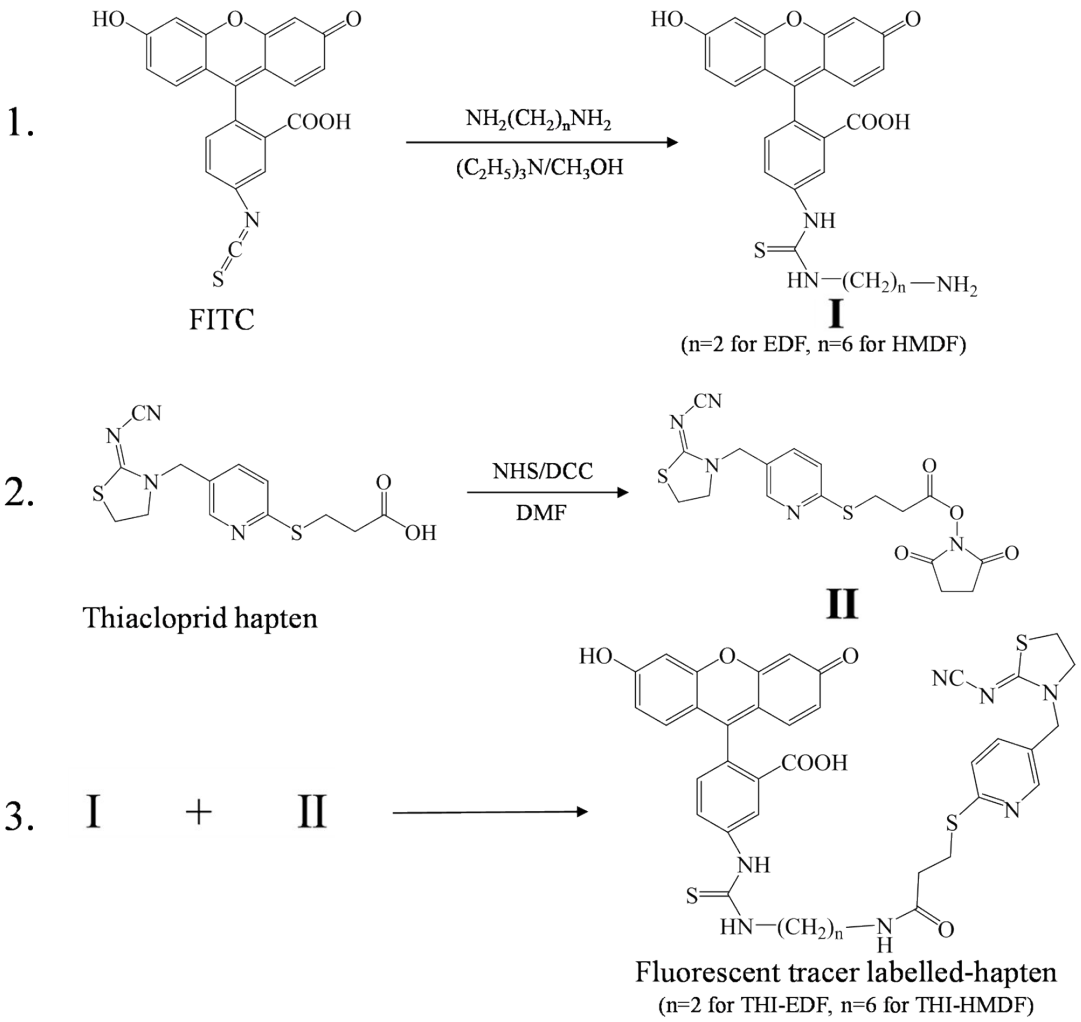

Fig. S1 The synthetic route of fluorescent tracer-labeled haptens.

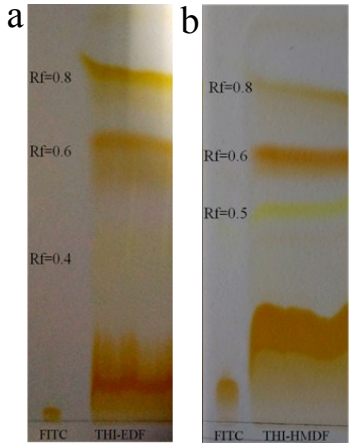

Fig. S2 The purification results of fluorescent tracer-labeled haptens using TLC. (a) THI-EDF, (b) THI-HMDF.

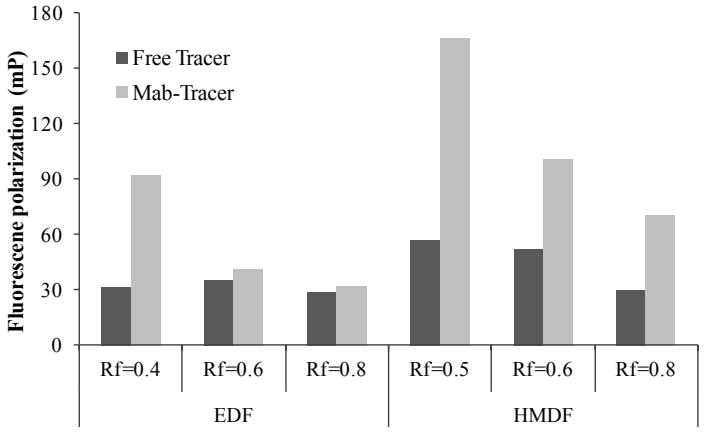

Fig. S3 The characterization of the compounds in three bands of EDF and HMDF. One hundred milliliter compounds (100-fold dilution) that was extracted from different bands reacted with 100 μL mAb C9 (300 μg mL^{-1}) for 20 min in black microtiter plate respectively. The value of FP was measured by SpectraMax M5 with the 492 nm for excitation wavelength and 526 nm for emission wavelength.

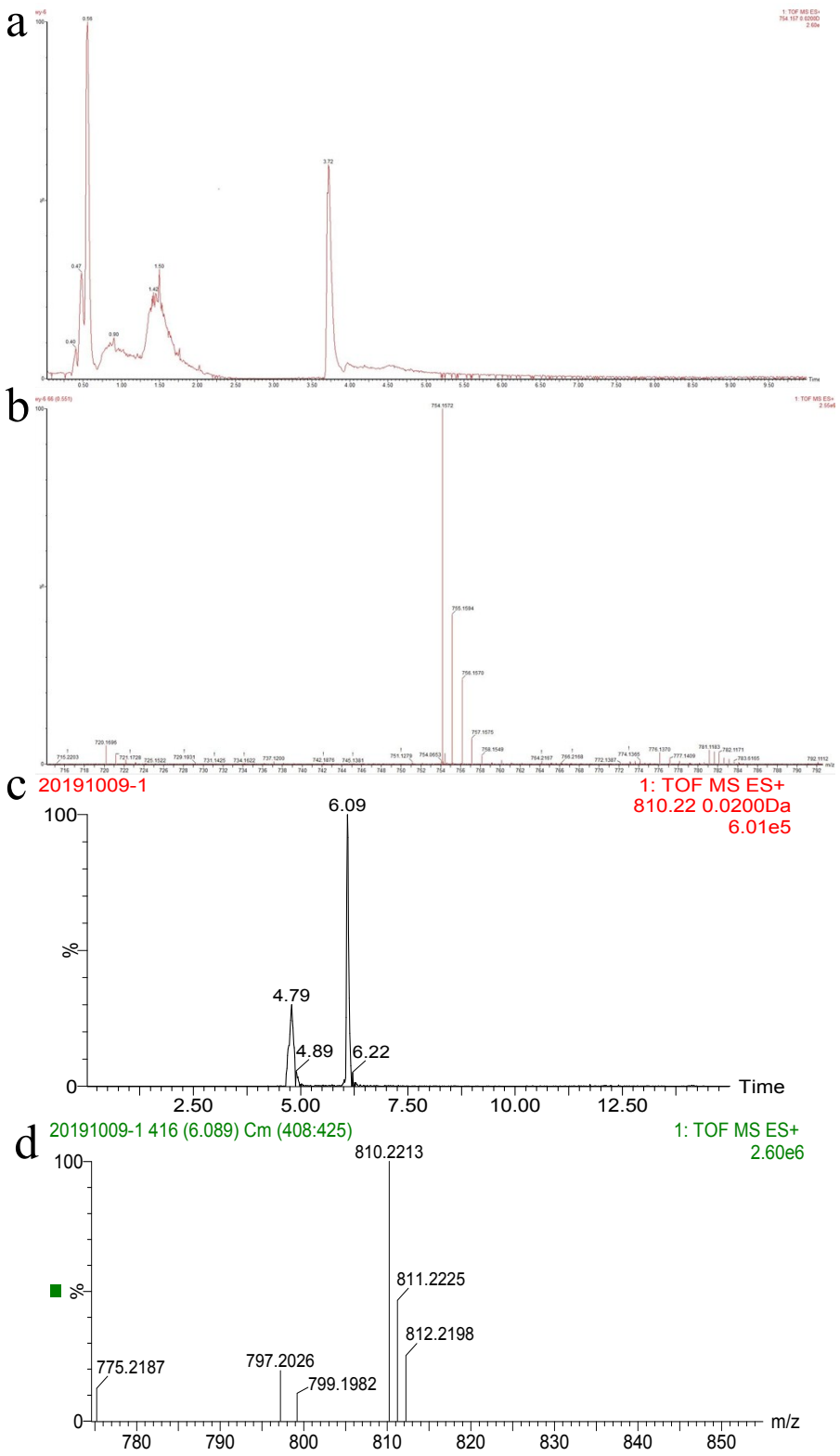

Fig. S4 The mass spectrometry for THI-EDF and THI-HMDF. Ion current (a) and analysis for m/z=754.1576 (b) for THI-EDF; ion current (c) and analysis for m/z=810.2202 (d) for THI-HMDF.

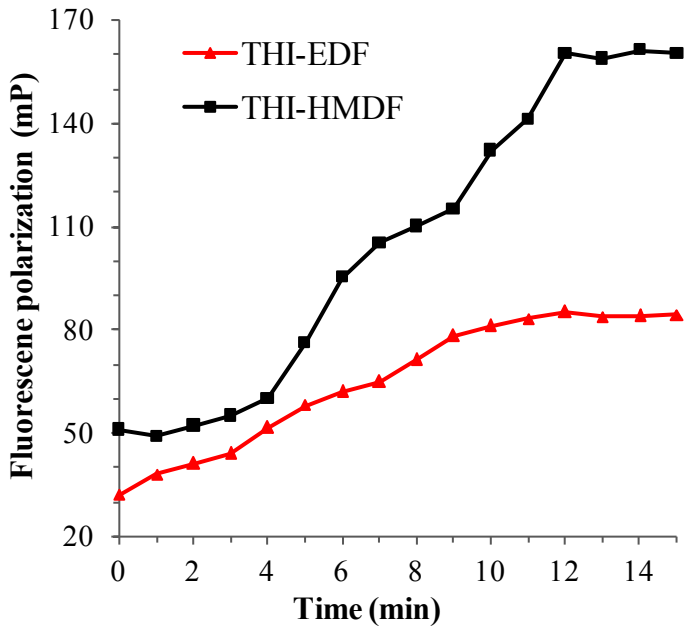

Fig. S5 The binding kinetic curves of mAb C9 with fluorescent tracer-labeled haptens. One hundred milliliter THI-EDF and THI-HMDF (50-fold dilution) reacted with 100 μL mAb C9 (300 μg mL^{-1}) in black microtiter plate respectively. The value of FP was measured by SpectraMax M5 every minute with the 492 nm for excitation wavelength and 526 nm for emission wavelength. The interactions reached equilibrium after 12 min incubation.

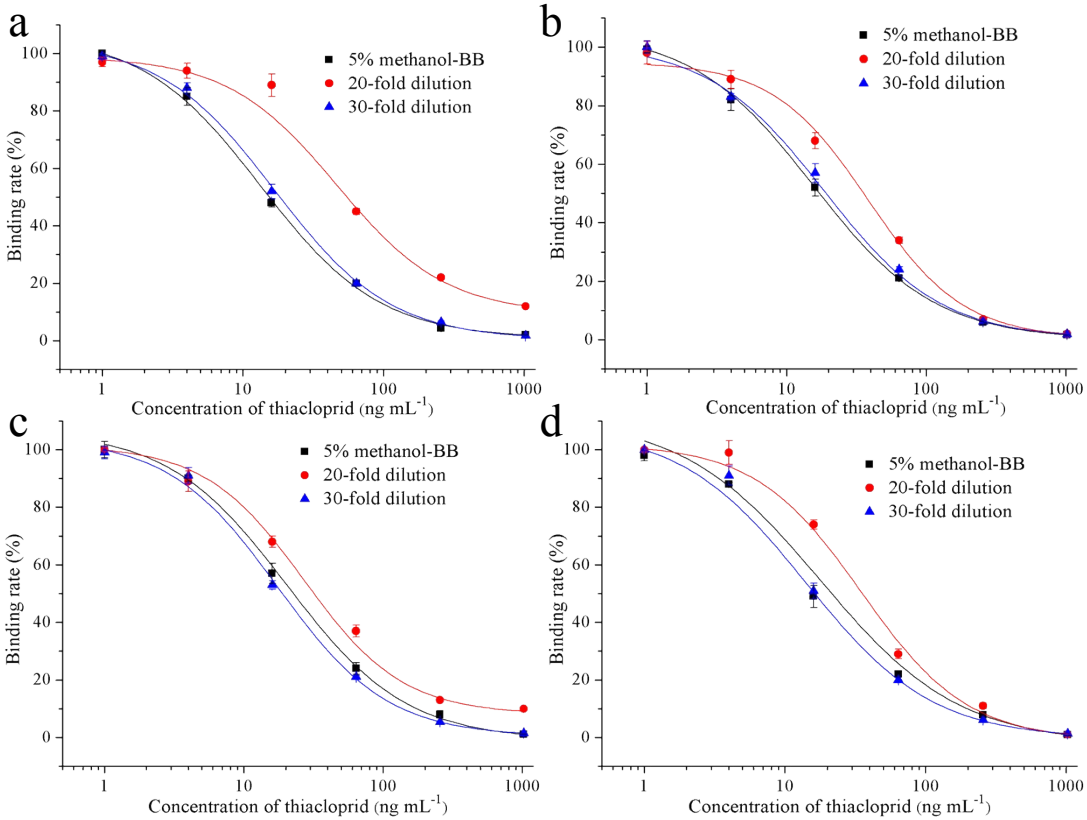

Fig. S6 Matrix interference on FPIA. Standard inhibition curves for thiacloprid in the buffer, soil (a), rice (b), tomato (c), cucumber (d) matrices using the FPIA.