

Supporting Information

Identification and Application of Two Promising Peptide Ligands for the Immunodetection of Imidacloprid Residue

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Table S1. Phage titer among panning.

Rounds	Input (cfu/mL)	Output (cfu/mL)	
		Peptidomimetics	Anti-immunocomplex peptides
1	3.0×10^{11}	6.0×10^5	2.2×10^5
2	3.0×10^{10}	1.6×10^8	4.1×10^5
3	3.0×10^{10}	2.0×10^8	4.5×10^7

Table S2. Optimization of mAb concentrations and phage inputs in competitive P-ELISA.

Clone name	Concentration of antibody ($\mu\text{g/mL}$)	Input of phage particles (pfu)	OD ₄₅₀
1-9-G	2.5	1.56×10^8	1.0148
1-11-H	2.5	7.81×10^7	1.2772
1-10-F	2.5	1.95×10^7	1.3974
1-12-A	2.5	1.95×10^7	1.1289
1-9-H	2.5	3.91×10^7	1.2429
1-12-C	1.25	6.25×10^8	1.4145
1-10-H	2.5	1.95×10^7	1.2585

Table S3. Comparison of reported ELISAs for IMI.

Methods	IC ₅₀ /SC ₅₀ (ng/mL)	Detection range (ng/mL)	References
Competitive P-ELISA	0.067	0.024-0.4	[9]
Competitive P-ELISA	96	8.0-906	[27]
Competitive ELISA	35	Not shown	[19]
Competitive ELISA	17.3	5-125	[20]
Competitive ELISA	0.3	0.03-4.0	[21]
Competitive ELISA	1.2	Not shown	[22]
Competitive ELISA	121.6	Not shown	[23]
Competitive ELISA	1.3	Not shown	[24]
Competitive P-ELISA	0.55	0.30-1.00	Present work
Noncompetitive P-ELISA	0.35	0.15-0.8	Present work

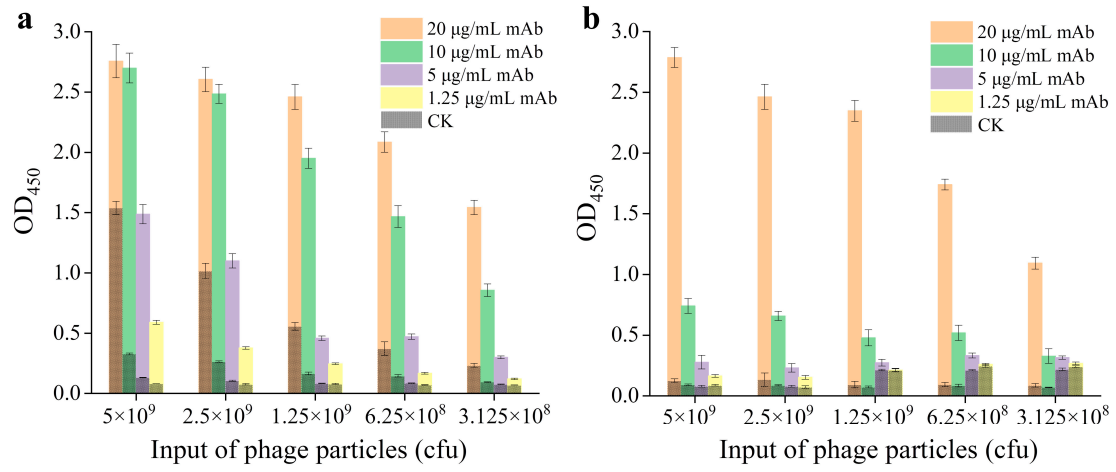


Figure S1. Optimization of mAb concentration and phage input in noncompetitive P-ELISA.

(a) Peptide 2-1-A. (b) Peptide 2-1-H.

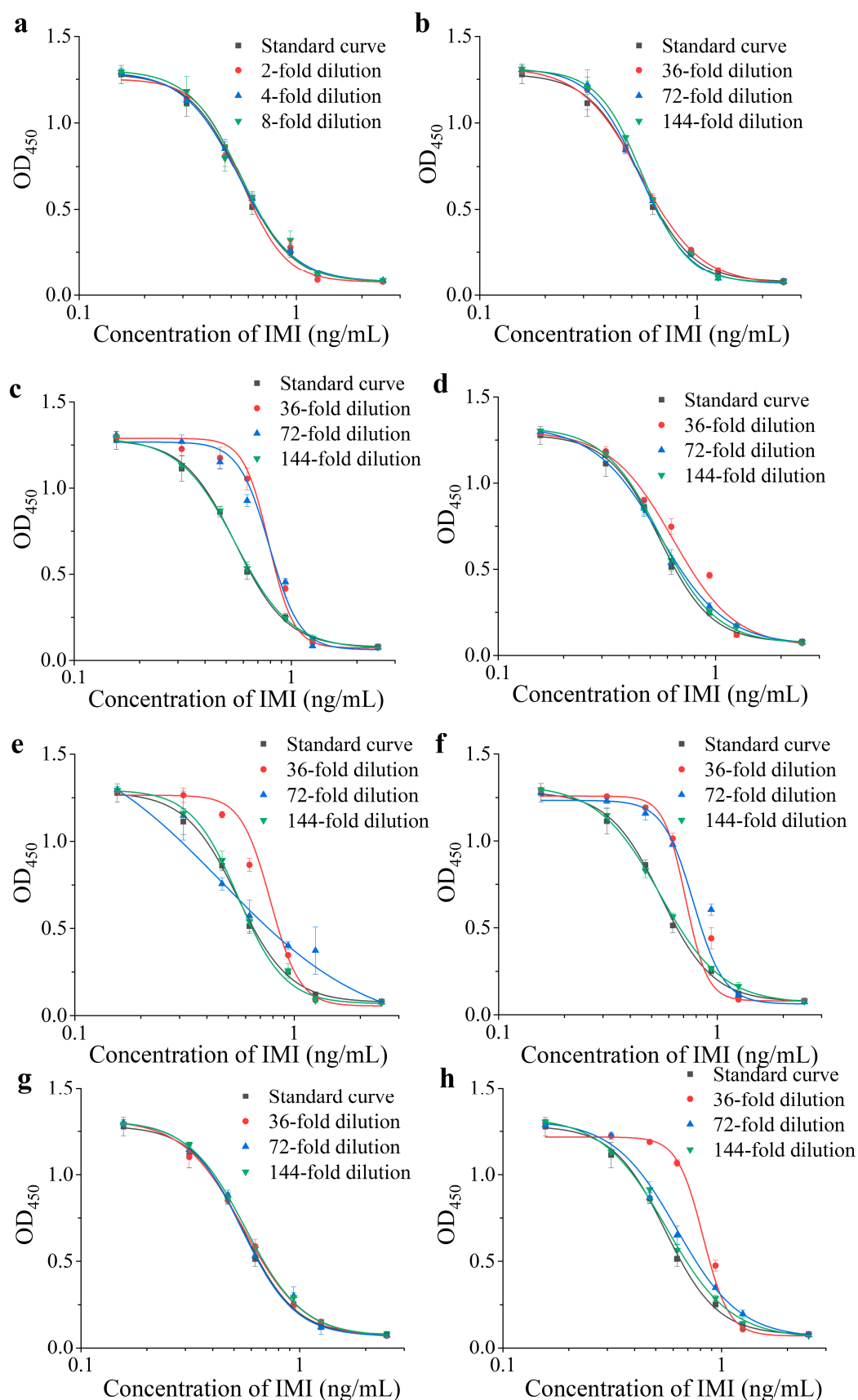


Figure S2. Matrix effects on competitive P-ELISA. (a) Paddy water. (b) soil. (c) wheat. (d) brown rice. (e) cabbage. (f) potato. (g) pear. (h) orange.

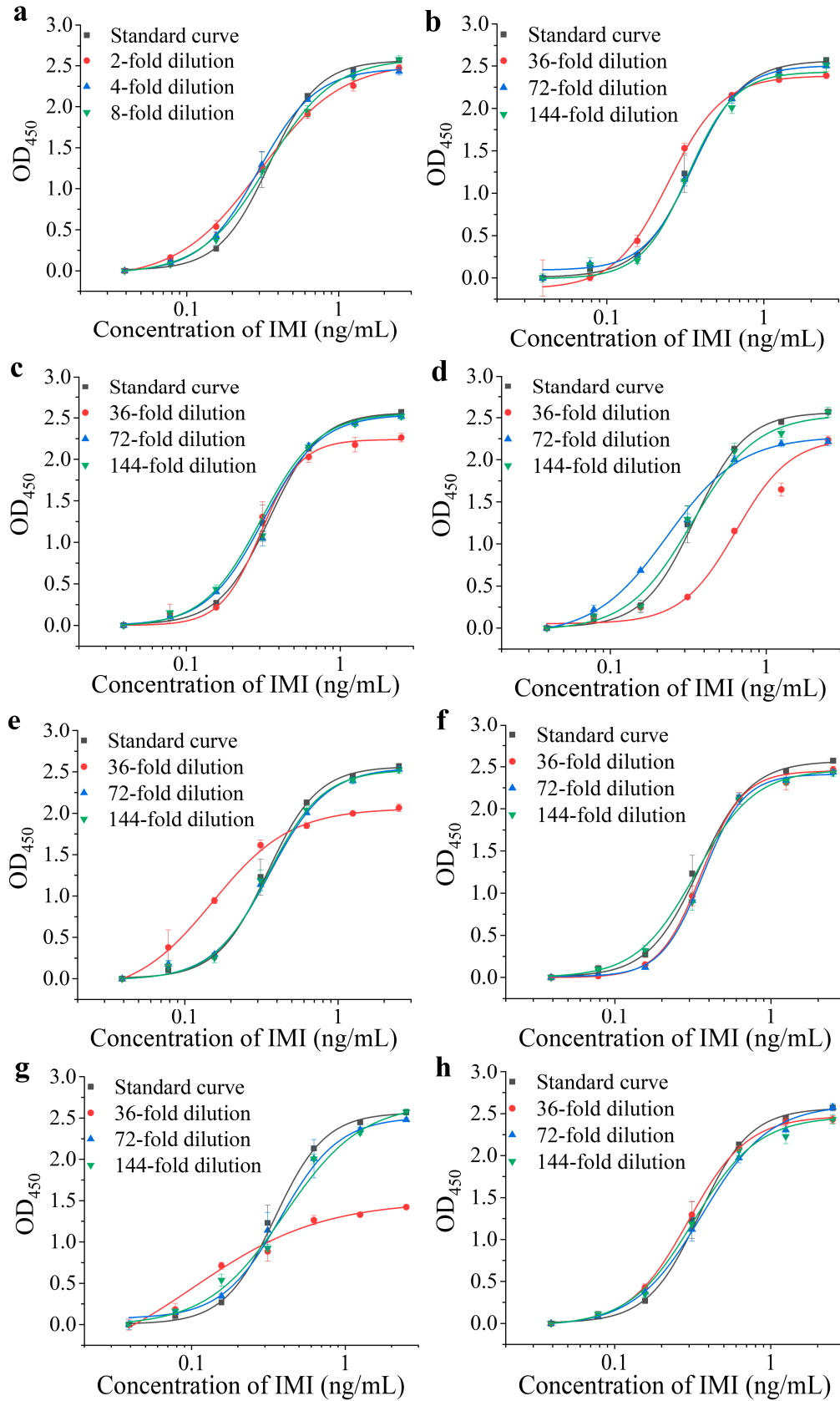


Figure S3. Matrix effects of noncompetitive P-ELISA. (a) Paddy water. (b) soil. (c) wheat. (d) brown rice. (e) cabbage. (f) potato. (g) pear. (h) orange.