

Supplementary Data for:

Development of an ELISA microarray assay for the sensitive and simultaneous detection of ten biodefense toxins

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Supplemental Table 1. Multiplexed array-based assays for toxin detection

Detection system	Toxins	LOD (pg/mL) buffer	LOD (pg/mL) food ¹	LOD (pg/mL) serum	Ref
Planar arrays					
ELISA microarray	BoNT/A	1.3	8.2	8.2	This manuscript
	BoNT/B	1.3	8.2	3.3	
	BoNT/C	3.3	128	3.3	
	BoNT/D	8.2	320	128	
	BoNT/E	3.3	8.2	8.2	
	BoNT/F	3.3	8.2	8.2	
	Ricin	8.2	8.2	21	
	SEB	1.3	0.5	ND ²	
	Stx-1	1.3	3.3	8.2	
	Stx-2	1.3	0.5	1.3	
ELISA microarray	BoNT/A	0.8	0.8	0.9	1
	BoNT/B	0.5	0.8	0.8	
	BoNT/C	2.2	2.7	3.5	
	BoNT/D	0.9	1.1	5.1	
	BoNT/E	0.2	0.2	0.5	
	BoNT/F	1.4	2.2	1.7	
Sandwich immunoassay microarray with fluorescent nanoparticle	Ricin	100	1000	ND	2
	Cholera toxin	10	100	ND	
	SEB	10	100	ND	
Sandwich immunoassay microarray-Inca Bioanalytical System	BoNT/A	1000	1000	ND	3
	SEB	1000	≥50,000	ND	
	Ricin	1000	5000	ND	
Planar waveguide: NRL Array Biosensor	SEB	100	500	ND	4
	Cholera toxin	1600	ND	ND	
	Botulinum toxoid A	40,000	20,000	ND	
	Botulinum toxoid B	200,000	ND	ND	
	Ricin	8000	ND	ND	
ELISA microarray: ArrayTube	Ricin	100	ND	ND	5
	SEB	200	ND	ND	
Sandwich immunoassay - microfluidic chip	Ricin	1,320,000	ND	ND	6
	SEB	8,400	ND	ND	
	Stx-1	35,000	ND	ND	

Supplemental Table 1. Multiplexed array-based assays for toxin detection (continued)

Detection system	Toxins	LOD (pg/mL) buffer	LOD (pg/mL) food ¹	LOD (pg/mL) serum	Ref
Bead-based arrays					
xMAP	BoNT/A	21	SC ³	ND	7
	BoNT/B	73	SC	ND	
	Ricin	2	SC	ND	
	SEB	3	SC	ND	
	Abrin	546	SC	ND	
			SC	ND	
			SC	ND	
xMAP	SEB	200	SC	ND	8
	Ricin	30,000	SC	ND	
	Botulinum toxoid A	1,100	ND	ND	
	Cholera toxin	4	ND	ND	
Microflow cytometer	Ricin	3,300	ND	ND	9
	SEB	14	ND	ND	
	Cholera toxin	1	ND	ND	
xMAP	Ricin	1000	ND	ND	10
	SEB	1	ND	ND	
	Abrin	2,200	470	ND	
	BoNT/A	1,200	1,200	ND	
xMAP	Ricin	110	120	ND	11
	SEB	200	88	ND	
	Cholera toxin	10	20	ND	
	BoNT/A	10	40	ND	
	heat labile <i>E. coli</i> enterotoxin	100	3000	ND	
	Ricin	10	30	ND	
SEA	10	20	ND		
SEB	70	100	ND		

¹Food LOD values reported for milk

²Not determined

³Tested at single concentration, LODs not determined

References

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