Electronic Supplementary Material (ESI) for Analytical Methods. This journal is © The Royal Society of Chemistry 2021

Supporting Information

A facile aptasensor based on polydopamine nanospheres for the high-sensitivity sensing of T-2 toxin

Ting Guo^{a#}, Changchang Wang^{d#}, Hongyuan Zhou^a, Yuhao Zhang^{a,c}, Liang Ma^{a,b,c*} and Shuo Wang^e

- a Ministry of Education, College of Food Science, Southwest University, Chongqing, 400715, P.R. China
- key Laboratory of Luminescence Analysis and Molecular Sensing (SouthwestUniversity), Ministry of Education, Chongqing 400715, P. R. China
- c Biological Science Research Center, Southwest University, Chongqing, 400715, P.R.China
- d Institute of Environment and Safety, Wuhan Academy of Agricultural Science, Wuhan 430207, P. R. China.
- e Medical College, Nankai University, Tianjin, 300457, P. R. China

*Corresponding author: Liang Ma

Email: zhyhml@163.com

[#] Ting Guo and Changchang Wang contributed equally to this work.

Methods	LOD (µg L ⁻¹)	LOD Linear range (μg L ⁻¹) (μg L ⁻¹)	
LC with fluorescence	5	10-150	[1]
GO-based aptasensor	186.63	233.29-17496.75	[2]
PDANSs-based aptasensor	7.23	10-180	This work
Imaging surface plasmon resonance (iSPR) biosensor	12	42-1836	[3]
Electrochemical sensor	0.14	0.51-979.82	[4]

Table S1. Comparison of our methods with developed methods for T-2.

Table S2. Recoveries of T-2 toxin in spiked samples by the aptamer-based fluorescent assay.

Sample	Spiked T-2 (µg L ⁻¹)	% Recovery	% RSD
Rice	40	81.57	3.15
	100	85.05	3.77
	160	88.72	2.23
Wine	40	86.29	3.76
	100	88.85	4.32
	160	92.24	3.08
Malt	40	96.98	6.43
	100	86.27	3.66
	160	101.07	3.01

Table S3. Comparison between aptasensor and LC-MS.

Sample	Rice		Wine			
LC-MS (µg L ⁻¹)	ND	ND	16.25	9.27	33.22	46.72
Aptasensor (µg L-1)	ND	ND	23.71	11.66	31.14	53.93

Note: samples rice and wine were suspected positive samples from a company.

Reference

- [1] M. Pascale, M. Haidukowski, A. Visconti, Journal of Chromatography A, 2003, 989, 257-264.
- [2] X. Chen, Y. Huang, N. Duan, S. Wu, X. Ma, Y. Xia, C. Zhu, Y. Jiang, Z. Wang, *Journal of Agricultural and Food Chemistry*, 2014, **62**, 10368-10374.
- [3] M.Z. Hossain, C.M. Maragos, Biosensors and Bioelectorincs, 2018, 101, 245-252.
- [4] X. Gao, W. Cao, M. Chen, H. Xiong, X. Zhang, S. Wang, *Electroanalysis*, 2014, 26, 2739-2746.