

Supporting Information

A Novel Fluorescent Sensor Based on Aptamer and qPCR for Determination of Glyphosate in Tap Water

Yong Shao ^{1,2,†}, Run Tian ^{1,2,†}, Jiaqi Duan ³, Miao Wang ^{1,2,*}, Jing Cao ^{1,2}, Zhen Cao ^{1,2}, Guangyue Li ³, Fen Jin ^{1,2}, A. M. Abd El-Aty ^{4,5,6} and Yongxin She ^{1,2,*}

¹ Institute of Quality Standardization & Testing Technology for Agro-Products, Chinese Academy of Agricultural Sciences, Beijing 100193, China

² Key Laboratory of Agrofood Safety and Quality (Beijing), Ministry of Agriculture and Rural Areas, Beijing 100081, China

³ State Key Laboratory for Biology of Plant Diseases and Insect Pests, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing 100193, China

⁴ State Key Laboratory of Biobased Material and Green Papermaking, Shandong Academy of Sciences, Qilu University of Technology, Jinan 250353, China

⁵ Department of Pharmacology, Faculty of Veterinary Medicine, Cairo University, Giza 12211, Egypt

⁶ Department of Medical Pharmacology, Medical Faculty, Ataturk University, 25240 Erzurum, Turkey

* Correspondence: wm0510@126.com (M.W.); 0891syx@163.com (Y.S.)

† These authors contributed equally to this work.

Table S1 Sequences of Oligonucleotides Used in This Work

Oligo	Sequence(5'-3')
polyA	AAAAAAAA-NH ₂
polyT-Aptamer ¹	TTTTTTTGCTAGACGATATTCGTCCATCCGAGCCCGTGGCGGGCTTTAGGACTCTGCGGGCTTCGCGGCGCTGTCAGACTGAATATGTC
complementary DNA	GACATATTCAGTCTGACAGCGCCGCGAAGCCCGCAGAGTACTAAAGCCCGCCA CGGGCTCGGATGGACGAATATCGTCTAGC
upstream primer	GCTCGGATGGACGAATATCGTCTAG
downstream primer	TATTCGTCCATCCGAGCCCGTGGCG

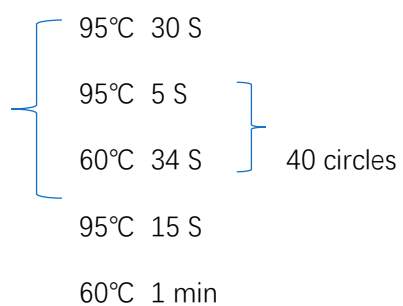
Table S2 qPCR conditions


Diagram illustrating the qPCR conditions:

- 95°C 30 S
- 95°C 5 S
- 60°C 34 S
- 95°C 15 S
- 60°C 1 min

The first three conditions (95°C 30 S, 95°C 5 S, and 60°C 34 S) are grouped by a bracket and labeled "40 circles".

Table S3 Estimation of glyphosate recovery based on this method

Sample	Standard Amount	Addition (ppm)	Recovery Rate(%)		RSD(%)
Tap water	1.4	105.4	96.1	113.1	0.58
	0.7	109	96.9	104.3	0.40
	0.35	104.9	91.5	114.4	0.73

References

1. Chen, F.; Li, G.; Liu, H.; Leung, C.-H.; Ma, D.-L., G-quadruplex-based detection of glyphosate in complex biological systems by a time-resolved luminescent assay. *Sensors and Actuators B: Chemical* **2020**, 320.