

Supporting Information

A lanthanide-based ratiometric fluorescent biosensor with enzyme free for organophosphorus pesticide detection

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Table S1 DNA sequences used in the investigation

Strand name	DNA sequences (from 5'-terminal to 3'-terminal)
DNA (AS1411)	GGTGGTGGTGGTTGTGGTGGTGGTGG
DNA (T30695)	GGGTGGGTGGGTGGGT
DNA (PS2.M)	GTGGGTAGGGCGGGTTGG
DNA (24GT)	GGGTTTTGGGTTTTGGGTTTTGGG
DNA (21GT)	GGGTTTGGGTTTGGGTTTGGG
DNA (20GT)	GGGTGGGTGGGTGGGTGGGT
DNA (18GT)	GGGTTGGGTTGGGTTGGG
DNA (TR)	GGGTTAGGGTTAGGGTTAGGG

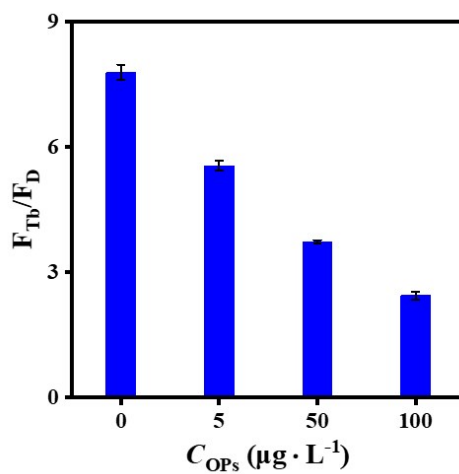


Fig. S1. The F_{Tb}/F_D as a function of OPs with different concentrations (0, 5 $\mu\text{g}/\text{L}$, 50 $\mu\text{g}/\text{L}$, 100 $\mu\text{g}/\text{L}$).

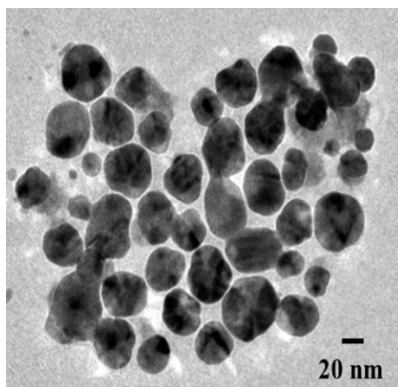


Fig. S2. Transmission electron micrograph of AgNPs

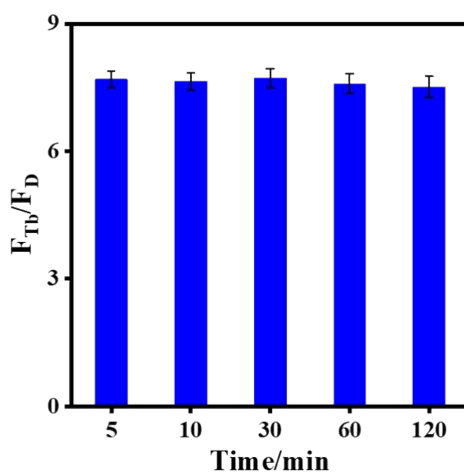


Fig. S3. The stability of DNA-Tb-Dured-AgNPs in the environment

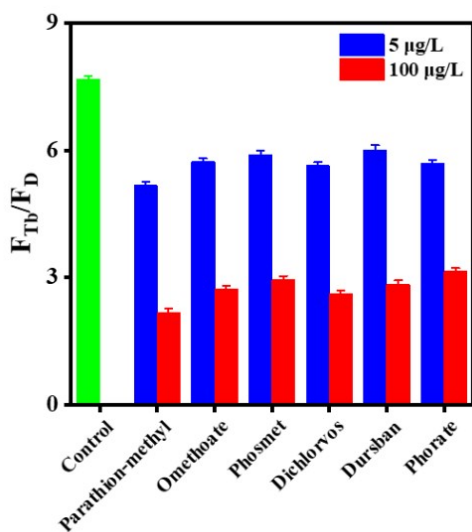


Fig. S4. The effect of other OPs on the fluorescence ratio (F_{Tb}/F_D) of the Dured-DNA-Tb/AgNPs sensing system.

Table S2 Comparison of the investigation with previous reports

Assays	Sensors	Linear range	LOD($\mu\text{g/L}$)	References
Fluorometry	BSPOTPE-SiO ₂ -MnO ₂	1-100 $\mu\text{g/L}$	1.0	[1]
Fluorometry	RB-Ag/Au NPs	3.3-28 $\mu\text{g/L}$	1.8	[2]
Fluorometry	MnO ₂ -AR/SC	5-500 $\mu\text{g/L}$	1.6	[3]
Colorimetry	PAA-CeO ₂	0.1-1 mg/L	26.73	[4]
Colorimetry	AChE-TMB-H ₂ O ₂	0.01-10 mg/L	4.0	[5]
Colorimetry	CDs-AgNPs	0.0298-29.8 mg/L	12	[6]
Fluorometry	Dured-DNA-Tb/AgNPs	0.03-5 $\mu\text{g/L}$ 10-160 $\mu\text{g/L}$	0.034	This work

References:

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