Supporting information

Construction of a luminescent sensor based on lanthanide complex for the highly efficient detection of methyl parathion

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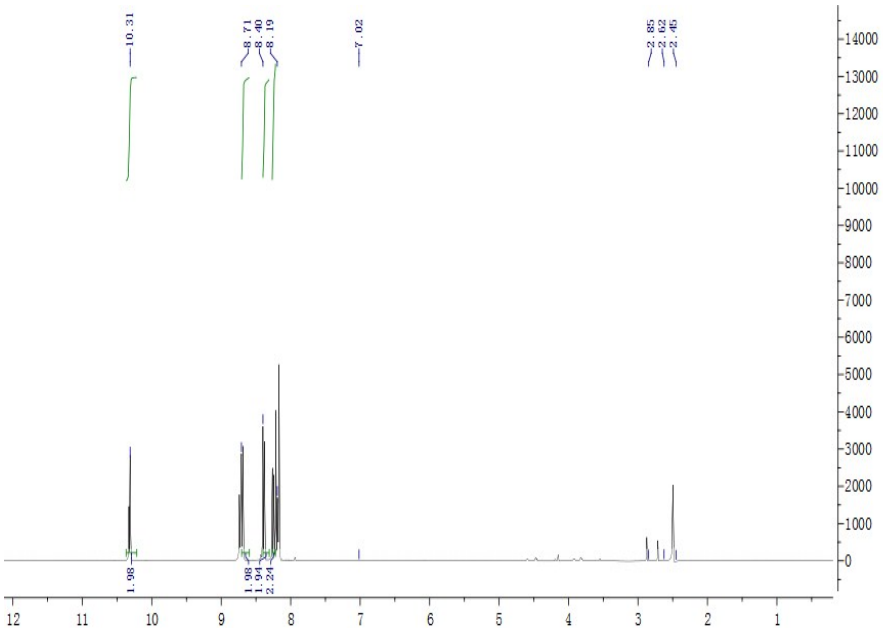

Fig.S1 [1]HNMR of Compound1

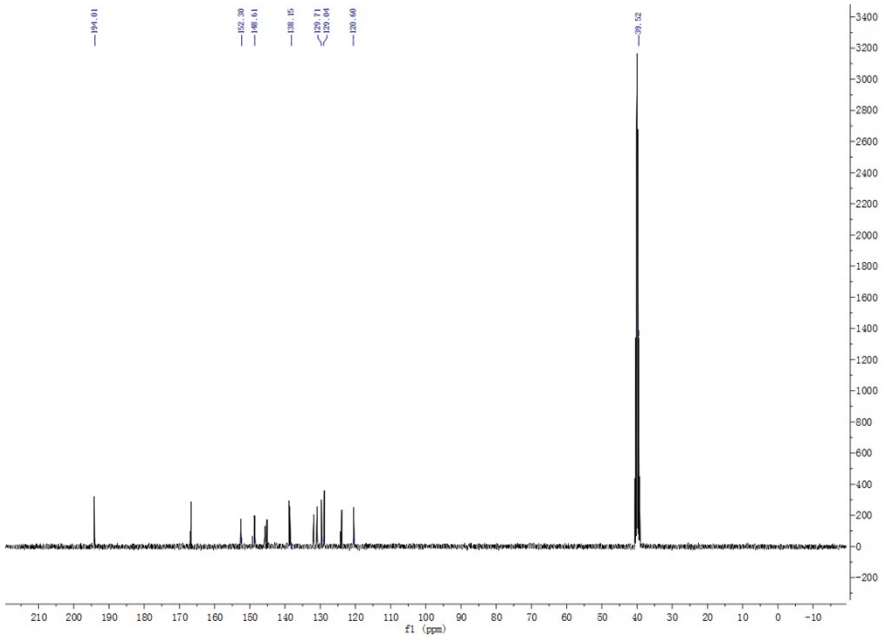

Fig.S2 [13]CNMR of Compound1

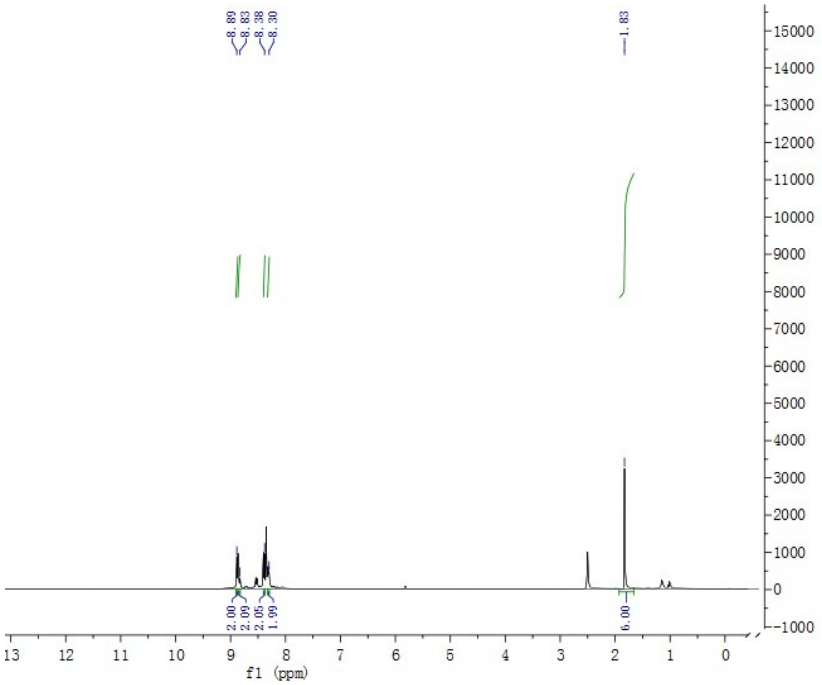

Fig.S3 [1]HNMR of Compound2

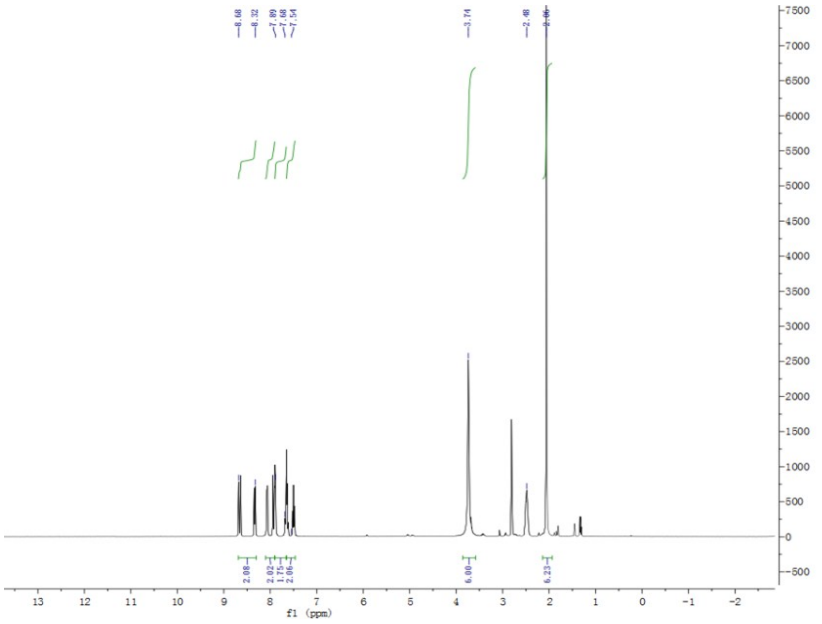

Fig.S4 [1]HNMR of HL

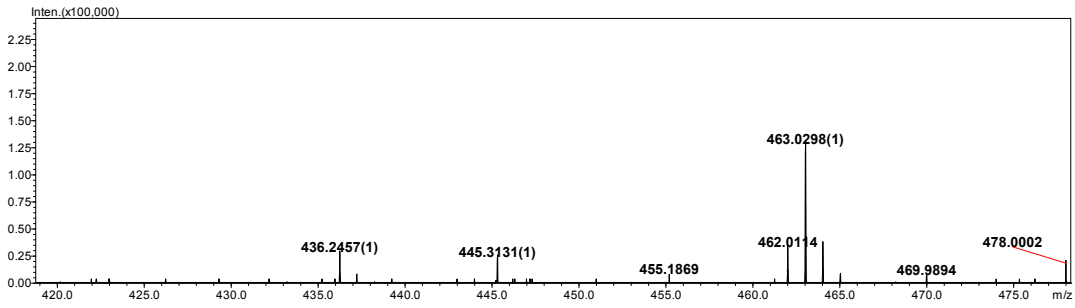

Fig.S5 ESI-MS spectrum of HL

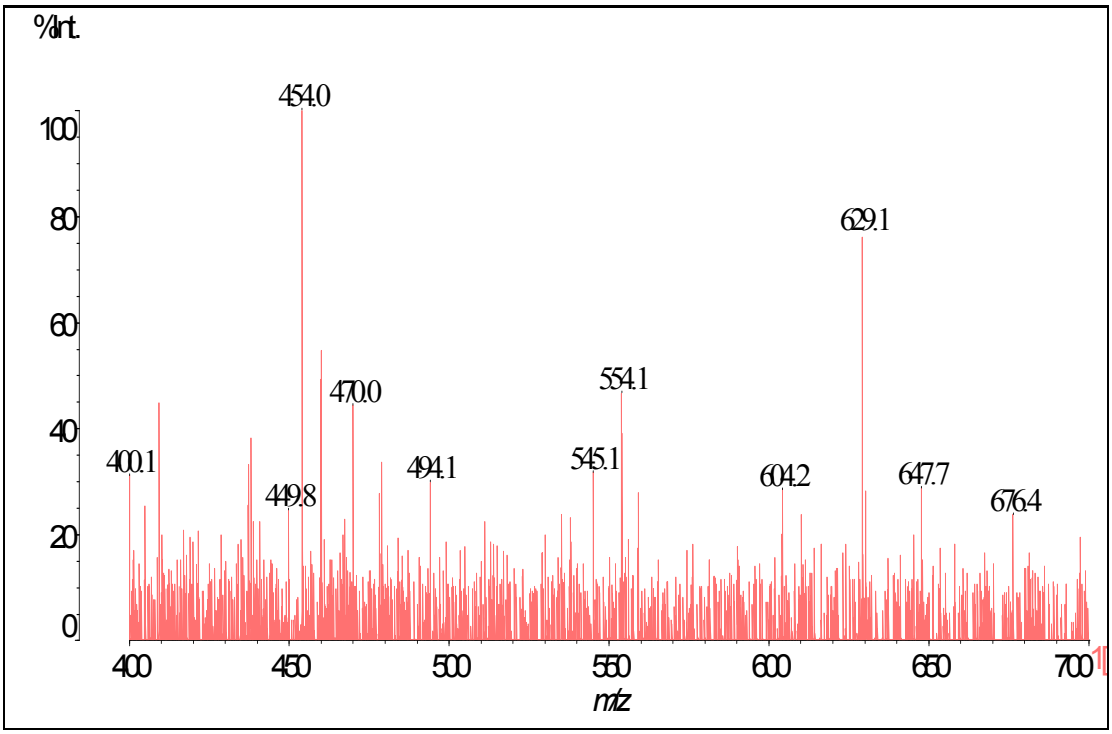

Fig.S6 MALDI-TOF MS of HL-Eu^{3+}

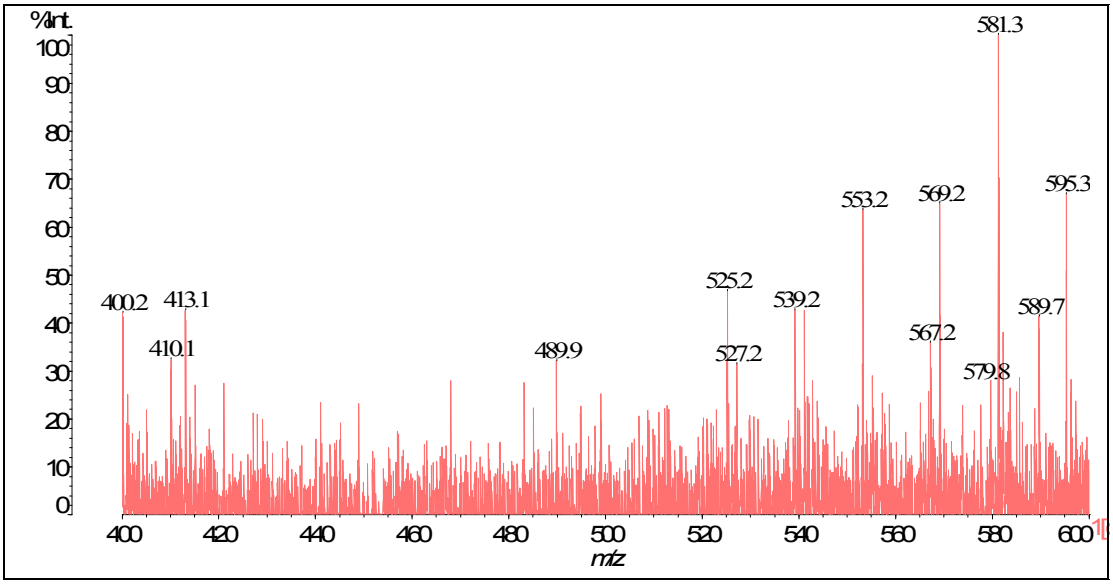

Fig.S7 MALDI-TOF MS data of the Eu-MP

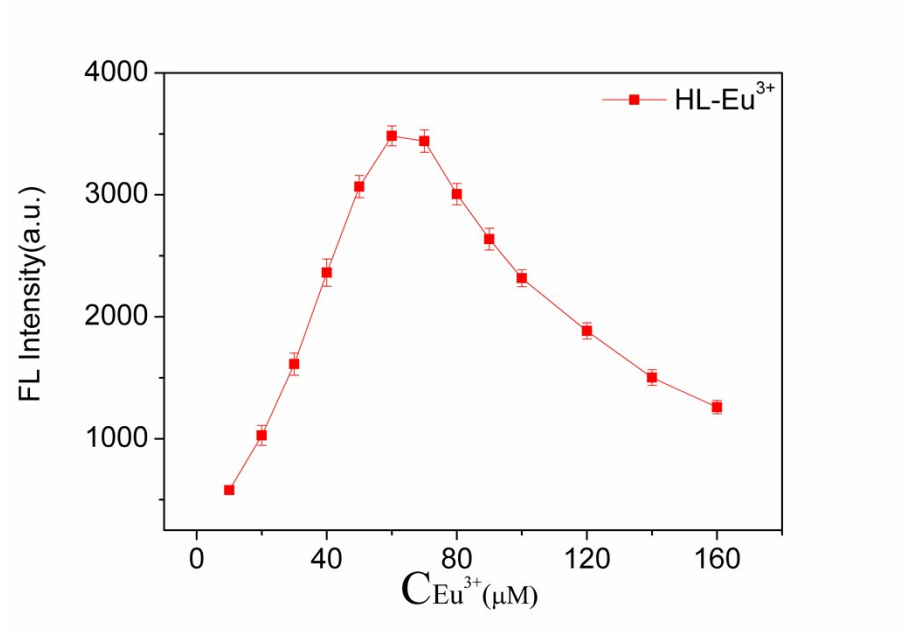

Fig.S8 The relationship between Eu^{3+} concentration and the fluorescence intensity of HL-Eu^{3+}

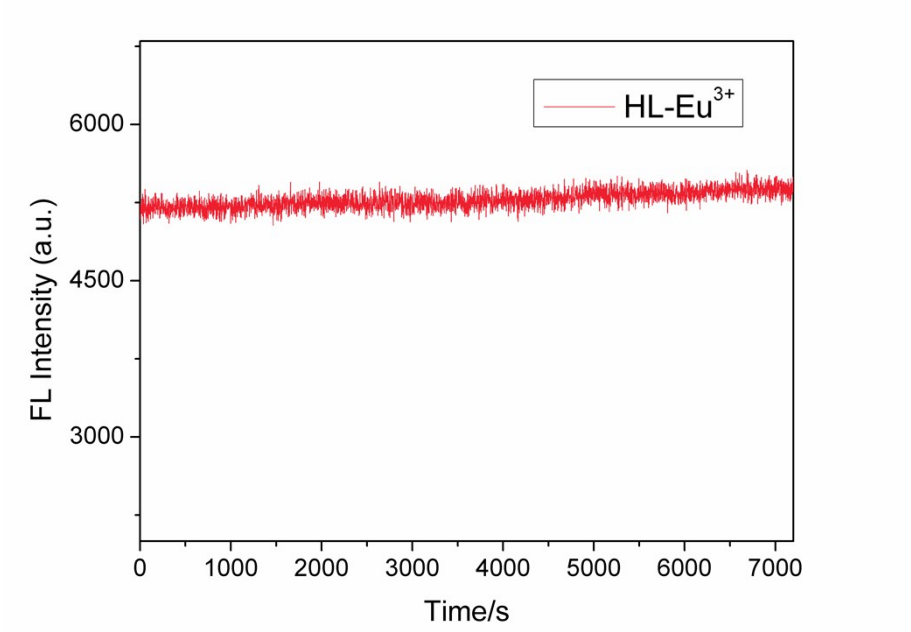

Fig.S9 The time-dependent fluorescence intensity of HL-Eu^{3+}

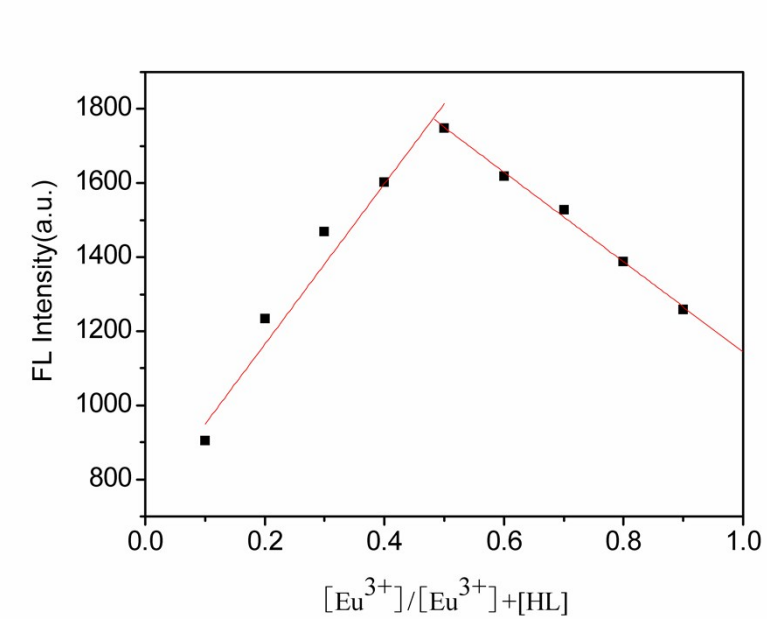

Fig. S10 Job's plot of the complex formed by HL and Eu^{3+} at an invariant total concentration of 0.1 mM, where the intensity at 617 nm was plotted against the mole fraction of Eu^{3+}

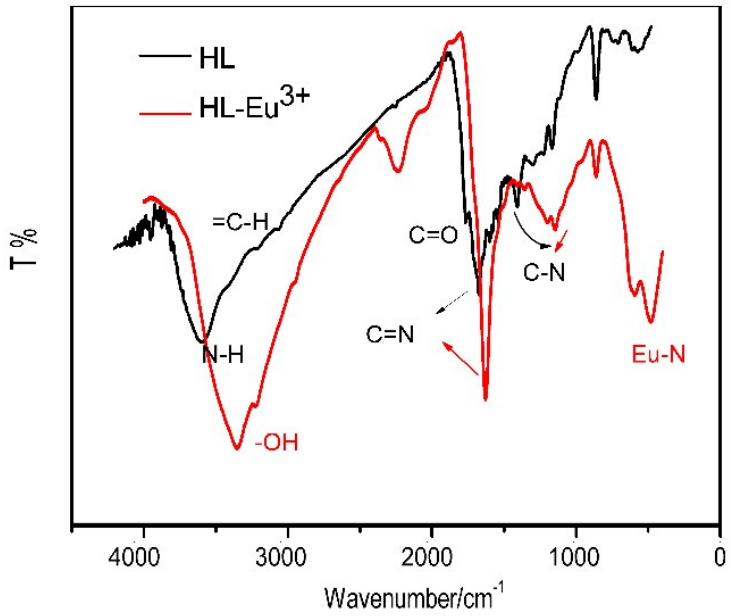

Fig.S11 FT-IR of HL and HL-Eu^{3+}

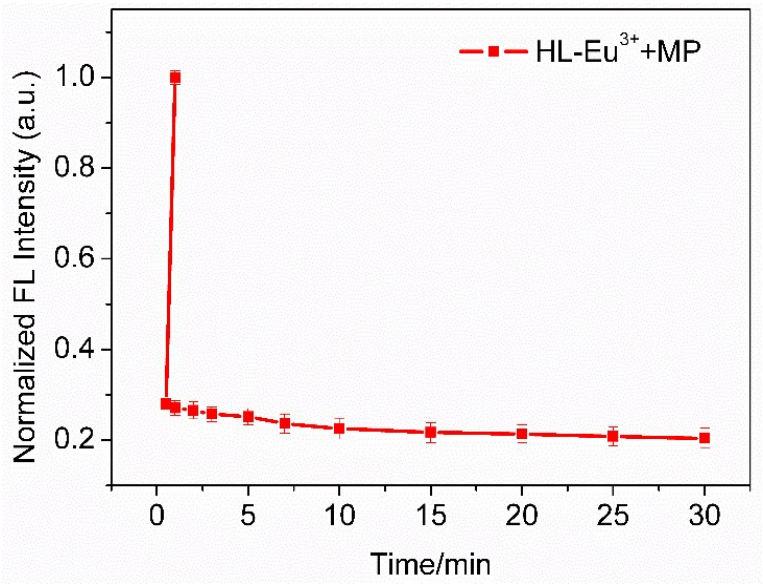

Fig.S12 Time-dependent fluorescence response of HL-Eu^{3+} to MP

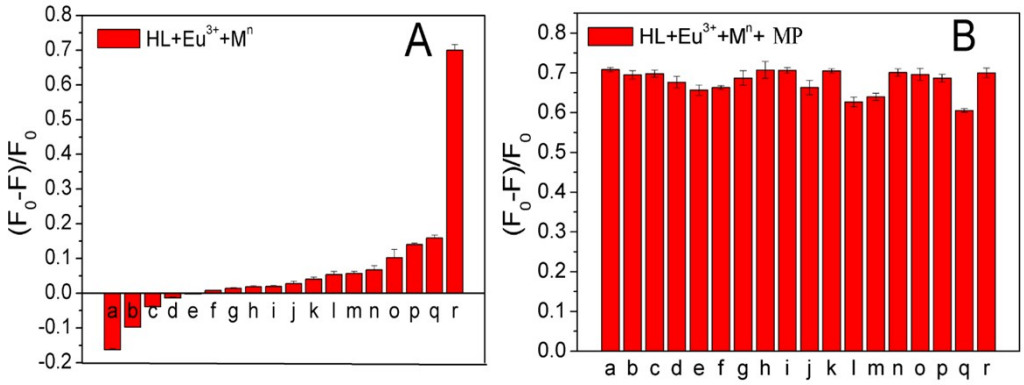

Fig.S13 the fluorescence intensities of HL-Eu^{3+} at 617 nm were measured the presence of different metal ions (100 μM) and anions (100 μM). A: (a) Mg^{2+}, (b) Ca^{2+}, (c) Hg^{2+}, (d) Na^{+}, (e) Fe^{3+},(f) Pb^{2+}, (g) Cd^{2+}, (h) Zn^{2+},(i) Ba^{2+}, (j) PO_4^{3-},(k) Ac^{-}, (l) Br^{-}, (m) HPO_4^{2-}, (n) SO_4^{2-}, (o) F^{-}, (p) $H_2PO_4^{-}$, (q) NO_3^{-},(r) MP. B: The fluorescence intensity of HL-Eu^{3+} to 20 μM MP in the presence of different metal ions (100 μM) and anions (100 μM). (a) Mg^{2+}, (b) Ca^{2+}, (c) Hg^{2+}, (d) Na^{+}, (e) Fe^{3+},(f) Pb^{2+}, (g) Cd^{2+}, (h) Zn^{2+},(i) Ba^{2+}, (j) PO_4^{3-},(k) Ac^{-} (l) Br^{-}, (m) HPO_4^{2-}, (n) SO_4^{2-},(o) F^{-}, (p) $H_2PO_4^{-}$, (q) NO_3^{-},(r) MP.

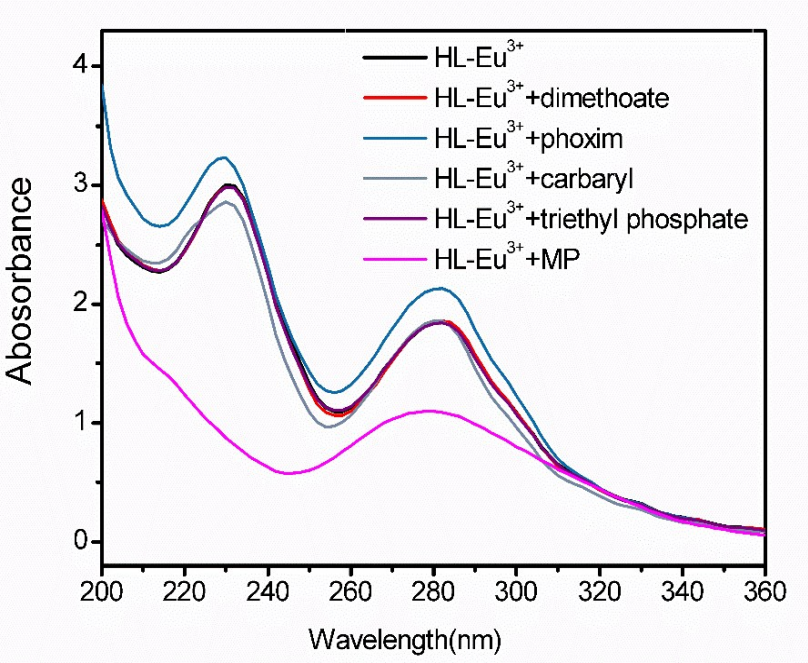

Fig.S14 the absorption spectra of HL-Eu^{3+} with the addition of different OPs, including carbaryl, phoxim, triethyl phosphate, dimethoate and MP (20 μM)

Table S1 Comparison of the present method with the literature for the determination of MP

Fluorescent probes	Linear range	Detection limit	Reference
CdTe QDs/CTAB	25-3000 ng·mL^{-1}	18.0 ng·mL^{-1}	[1]
AChE/Silica sol-gel flim/CPE	0.1-0.5 ppb	0.08 ppb	[2]
Try-CDs	10^{-10}-10^{-4} M	4.8×10^{-11} M	[3]
Methyl parathion hydrolase biosens	0.2-100 ppb	0.07 ppb	[4]
Fe_3O_4 imprinted polymers	15-2500 ng/g	5.2 ng/g	[5]
screen printed carbon electrode	2.0-80 μM	500 nM	[6]
HPLC	1.03-75.99 μM	0.38 μM	[7]
Optical microbial biosensor	4-80 μM	0.3 μM	[8]
Lipase@ZIF-8 nanoparticles GCE	0.1-38 μM	0.28 μM	[9]
NCDs-MPH system	2.38-73.78 μM	0.338 μM	[10]
HL-Eu^{3+}	0.75-20 μM	95 nM	This work

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