A photoluminescent nanocrystal-based signaling protocol highly sensitive to nerve agents and highly toxic organophosphate pesticides

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Electronic Supplementary Information (ESI)

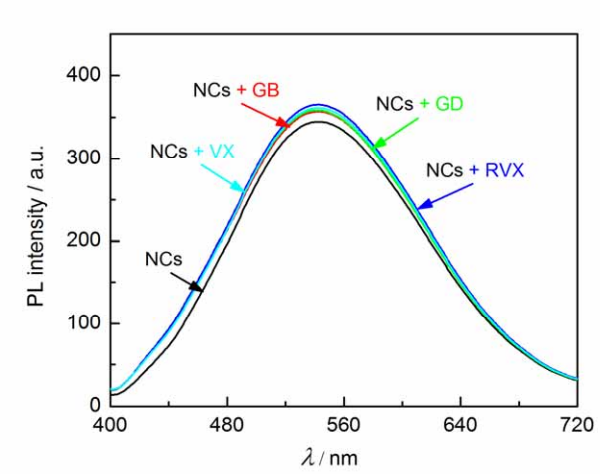

Fig. S1 PL spectra of TGA-CdS NCs in the absence (black) and presence of 100 nM GB (red), 100 nM GD (green), 100 nM VX (cyan), and 100 nM RVX (blue). The buffer used was 20 mM Tris-HCl of pH 7.6, [NCs] = 500 nM, [ATCh] = 75 μM, λ_{ex} = 370 nm.

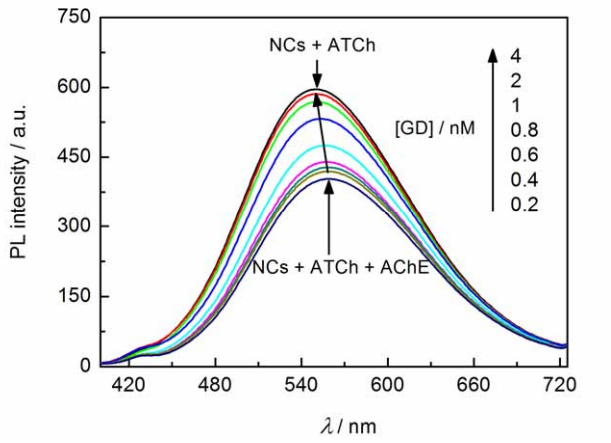

Fig. S2 PL spectra of TGA-CdS NCs in ATCh/AChE enzyme catalytic reaction solution with varying concentration of GD. The buffer used was 20 mM Tris-HCl of pH 7.6, [NCs] = 500 nM, [ATCh] = 75 μM, [AChE] = 0.016 units mL^{-1}, λ_{ex} = 370 nm.

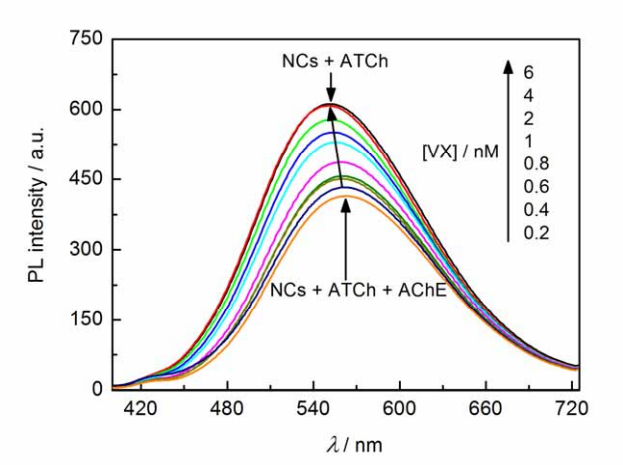

Fig. S3 PL spectra of CdS NCs in ATCh/AChE enzyme catalytic reaction solution with varying concentration of VX. The buffer used was 20 mM Tris-HCl of pH 7.6, [NCs] = 500 nM, [ATCh] = 75 μM, [AChE] = 0.016 units mL^{-1}, λ_{ex} = 370 nm.

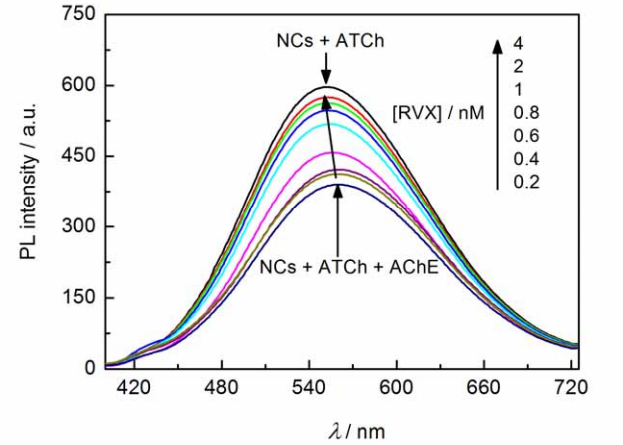

Fig. S4 PL spectra of CdS NCs in ATCh/AChE enzyme catalytic reaction solution with varying concentration of RVX. The buffer used was 20 mM Tris-HCl of pH 7.6, [NCs] = 500 nM, [ATCh] = 75 μM, [AChE] = 0.016 units mL^{-1}, λ_{ex} = 370 nm.

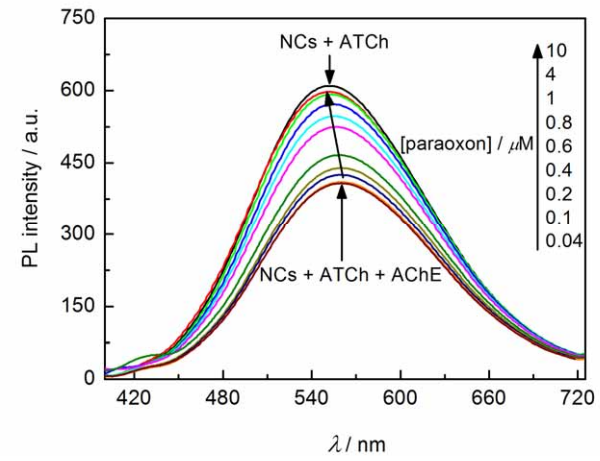

Fig. S5 PL spectra of CdS NCs in ATCh/AChE enzyme catalytic reaction solution with varying concentration of paraoxon. The buffer used was 20 mM Tris-HCl of pH 7.6, [NCs] = 500 nM, [ATCh] = 75 μM, [AChE] = 0.016 units mL^{-1}, λ_{ex} = 370 nm.