Supporting Information For

Simple construction of ratiometric fluorescent probe for the detection of dopamine and tyrosinase by the naked eye

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Fig. S1 Fluorescence spectra of Rox-DNA functionalized CdZnTeS QDs added different amounts of Rox-DNA.



Fig. S2 (A) TEM image of CdZnTeS QDs ($\lambda_{em} = 527$ nm). Inset: HRTEM image and Size distribution of CdZnTeS QDs.



Fig. S3 Dynamic light scatting histogram of Rox-DNA functionalized CdZnTeS QDs



Fig. S4 (A) XRD of DNA functionalized CdZnTeS QDs. The line spectra show the cubic CdS and CdTe reflections with their relative intensities. (B) Representative X-ray photoelectron spectra (XPS) of DNA functionalized CdZnTeS QDs.



Fig. S5 FT-IR spectra of CdZnTeS QDs and DNA functionalized CdZnTeS QDs.



Fig. S6 Fluorescence spectra of the Rox-DNA functionalized CdZnTeS QDs in the Tris buffer with different pH.



Fig. S7 (A) Fluorescence spectra of the Rox-DNA functionalized CdZnTeS QDs with 1000 ng/mL TYR and 2000 nM DA under different time. Inset: the ratio versus the different time upon addition of DA and TYR. (B) Fluorescence intensity ratio of the Rox-DNA functionalized CdZnTeS QDs upon the addition of DA and TYR under different incubation temperature.



Fig. S8 Fluorescence lifetime decay of Rox-DNA functionalized CdZnTeS QDs in the absence or present of DA and TYR.



Fig. S9 UV-vis absorption spectra of DA, TYR, and DA + TYR at the same concentration.



Fig. S10 Fluorescence spectra of the CdZnTeS QDs ($\lambda_{em} = 645 \text{ nm}$) with 1000 ng/mL TYR and different concentrations of DA.

Targets	Linear range	LOD	References
Dopamine	1.0 nM-1.0 mM	1.0 nM	1
	5-100 nM	2.9 nM	2
	10-3000 nM	3.0 nM	3
	0.15-3.0 μM	7.8 nM	4
	10-1000 nM	1.93 nM	This work
Tyrosinase	23.2-793.5 U/L	7 U/L	5
	6-3600 U/L	6 U/L	1
	45.0-319.5 U/L	13.5 U/L	6
	0.5-60 U/mL	7 U/L	7
	10-100 ng/mL	1.05 ng/mL (2.96 U/L)	This work

Table S1 Comparison of different methods for determination of DA and TYR.

References

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