

## Electronic Supplementary Information

### $\beta$ -Cyclodextrin functionalised gold nanoclusters as a luminescent probe for the ultrasensitive detection of dopamine

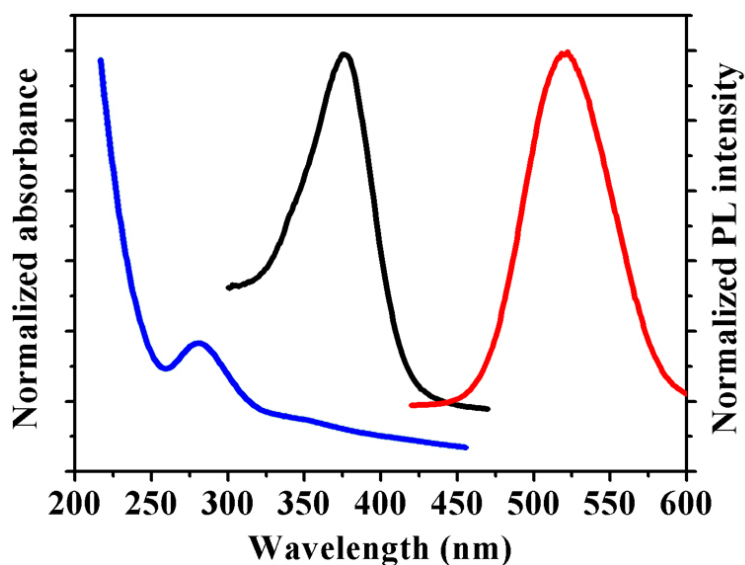
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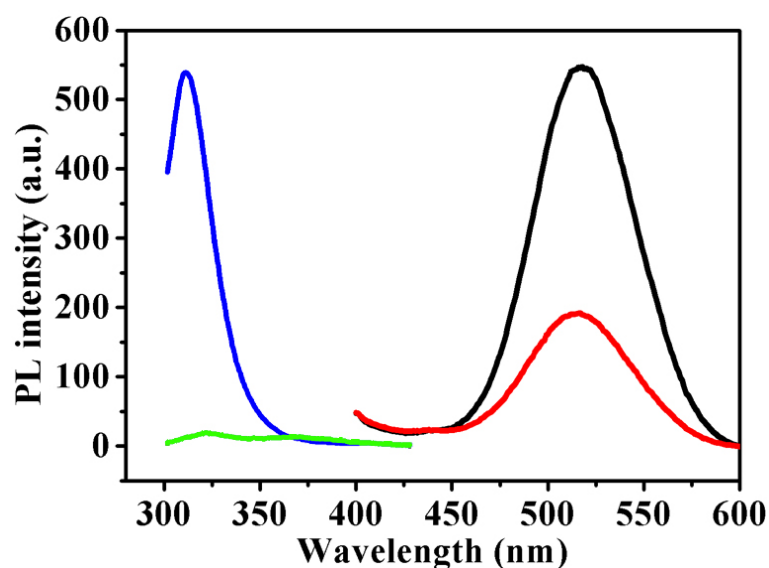
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**Fig. S1.** UV-vis absorption spectra of DA (blue), fluorescence excitation (black) and emission (red) spectra of the  $\beta$ -CD-AuNCs.



**Fig. S2.** The fluorescence spectra of DA (blue) under excitation of 290 nm,  $\beta$ -CD-AuNCs (black) under excitation of 370 nm, the mixture of  $\beta$ -CD-AuNCs and DA under excitation of 290 nm (green) and 370 nm (red).

**Table S1.** Comparison of different methods for DA detection.

Detection technique	Probe	Linear range	LOD	Ref.
Electrochemistry	GS-Au <sub>25</sub> nanoparticles	1–15 $\mu$ M	0.29 $\mu$ M	[1]
Electrochemistry	cyclodextrin functionalized carbon nanotubes	10–80 $\mu$ M	6.7 $\mu$ M	[2]
ECL	Ag <sub>2</sub> Se QDs	0.5–19 $\mu$ M	0.1 $\mu$ M	[3]
ECL	CdSe QDs	0.5–50 $\mu$ M	0.5 $\mu$ M	[4]
Fluorescence	adenosine capped CdSe/ZnS	0.1–20 $\mu$ M	29.3 nM	[5]
Fluorescence	fluorescent PDA nanoparticles	0.1–20 $\mu$ M	40 nM	[6]
Fluorescence	carbon nanoparticles	0.1–10 $\mu$ M	68 nM	[7]
Fluorescence	fluorescent graphene oxide	0.25–50 $\mu$ M	94 nM	[8]
Fluorescence	3-aminophenylboronicacid functionalized CuInS <sub>2</sub> QDs	0.5–40 $\mu$ M	0.2 $\mu$ M	[9]
Fluorescence	silica-coated CdTe QDs	0.5–100 $\mu$ M	0.24 $\mu$ M	[10]
Fluorescence	CD-AuNCs	0.005–1 $\mu$ M	2 nM	This work

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