

Electronic Supporting Information

Glutathione S-transferase templated copper nanoclusters as fluorescent probe for turn-on sensing of chlorotetracycline

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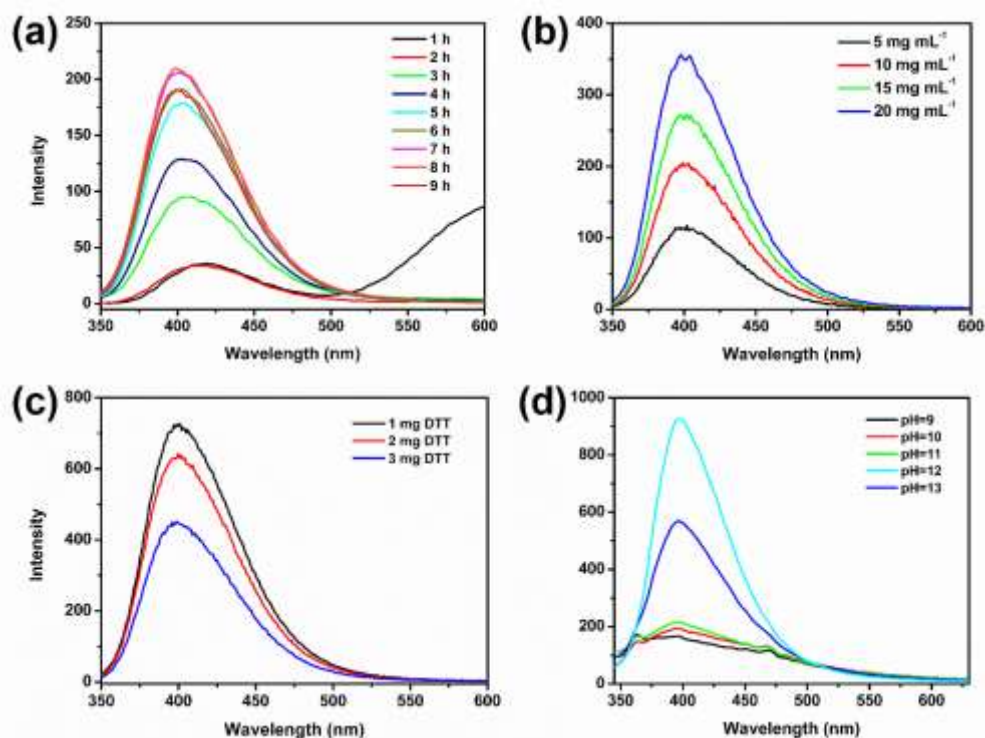


Fig. S1 Fluorescence intensity of GST-CuNCs being synthesized (a) for different reaction times, (b) at different concentration of GST (5.0-20.0 mg mL⁻¹), (c) with different amount of DTT and (d) at different pH value. All fluorescence spectra were measured under excitation of 325 nm.

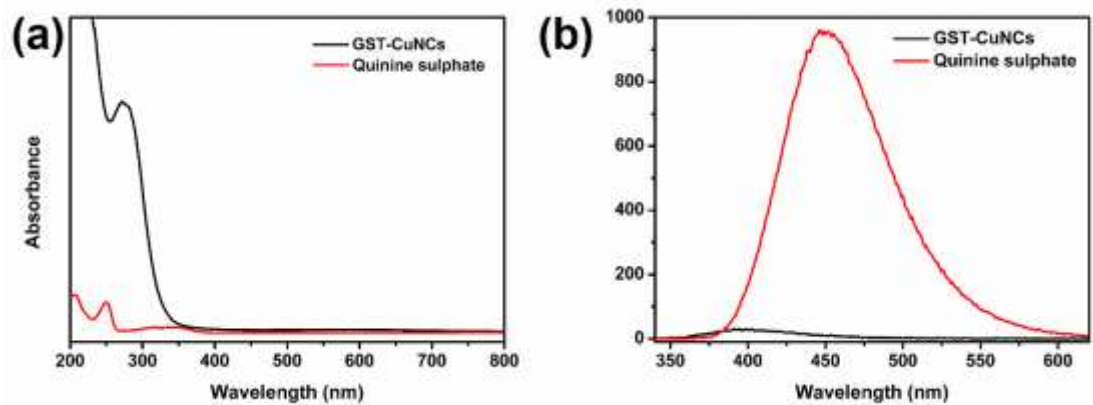


Fig. S2 (a) UV-vis absorption spectrum and (b) fluorescence emission spectra of the prepared GST-CuNCs (black) and the standard fluorophore, quinine sulphate (red), respectively.

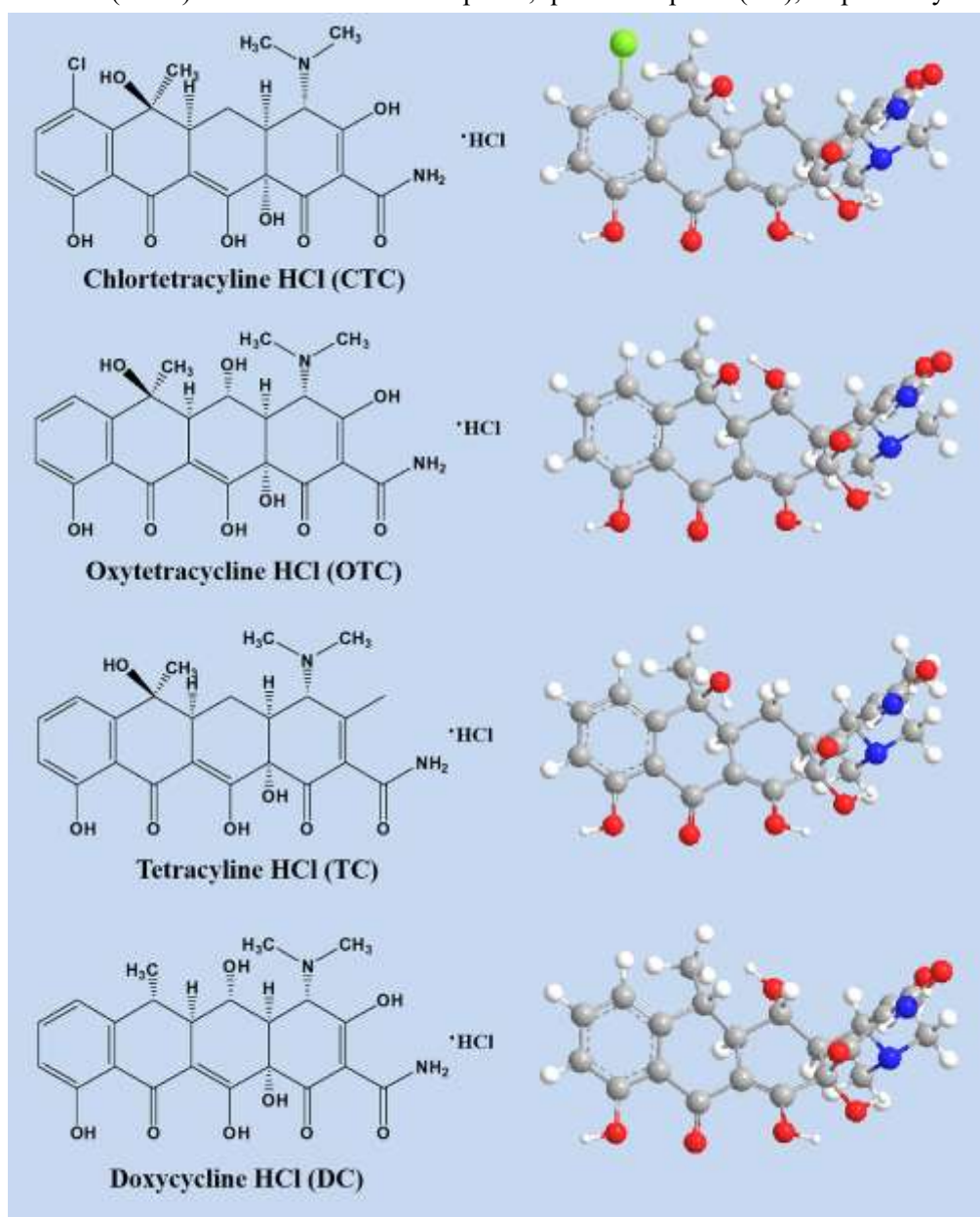


Fig. S3 The molecular structural of chlortetracycline (CTC), and its analogues.

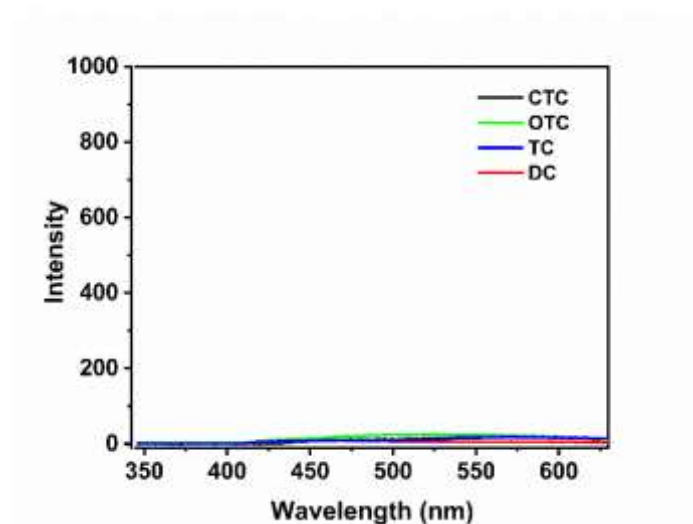


Fig. S4 Fluorescence spectra of tetracycline antibiotics in PBS under excitation at 325 nm.

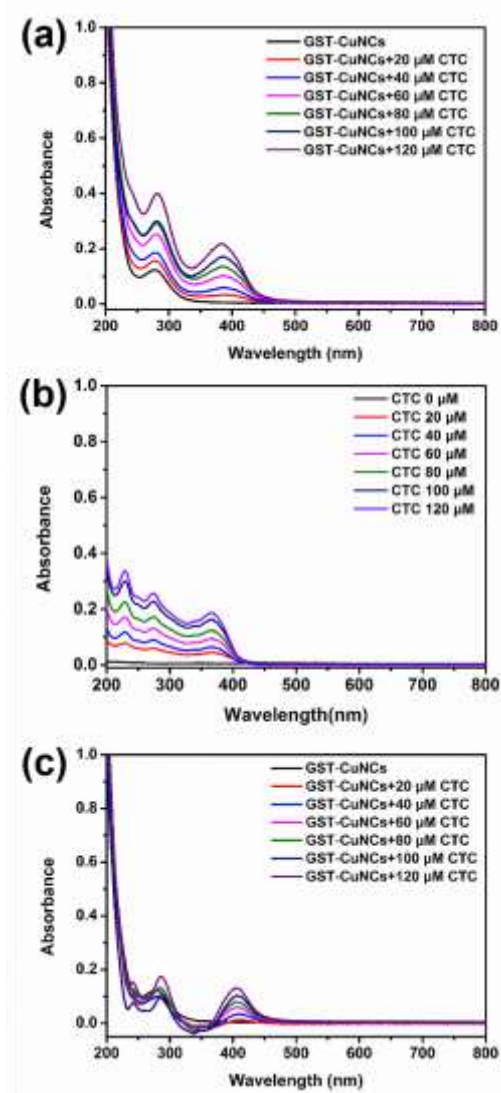


Fig. S5 The UV-Vis absorption spectrum of (a) the GST-CuNC with different amount of CTC, (b) The UV-Vis absorption spectrum of different amount of CTC and (c) subtract the absorption of CTC at the corresponding concentration.

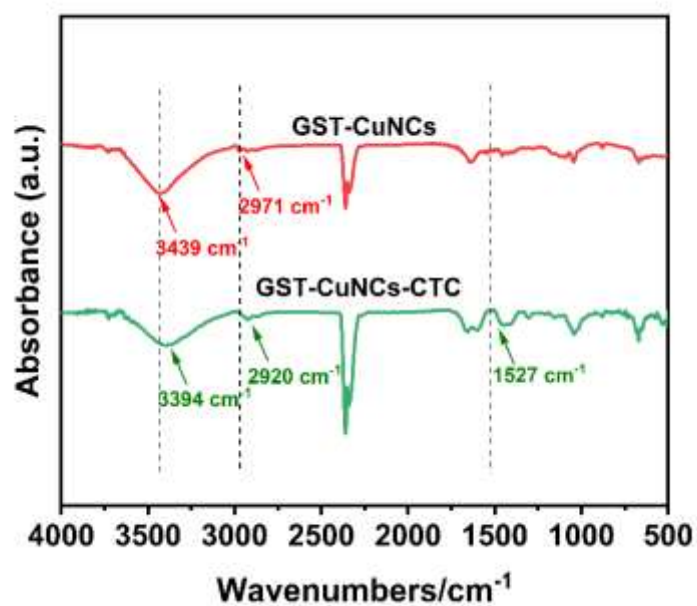


Fig. S6 The comparison of FT-IR spectra between GST-CuNCs and GST-CuNCs-CTC.

Table S1 A summary of nanoclusters synthesized with different ligands.

Stabilizing agent	Synthesis Methods	Temperature (°C)	Reaction time	QY (%)	$\lambda_{ex}/\lambda_{em}$ (nm)	Ref.
BSA	Microwave	---	40 S	6.4	320/405	1
BSA	Stirring	55	6-8 h	0.15	325/410	2
lysozyme	Stirring	40	2 h	5.6	365/600	3
Ovalbumin	Heating	85	4 h	NP	370/440	4
Transferrin	Stirring	37	10 h	7.5	375/460	5
HSA	Stirring	40	12 h	4	330/414	6
Chicken egg white	Stirring	55	8 h	0.98	337/417	7
GST	Stirring	25	8 h	1.36	325/400	This paper

Table S2 The lifetime of GST-CuNC and addition of CTC (60 μ M and 120 μ M)

Components	Lifetimes&percentage			
	τ_1/ns	a_1	τ_2/ns	a_2
1.0 mg mL ⁻¹ GST-CuNCs	1.43	54.28	7.06	45.72
+60 μ M OTC	3.77	49.25	9.84	50.75
+120 μ M OTC	4.38	69.12	13.41	30.88

References:

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