

Supplementary Information

In-situ synthesis of fluorescent copper nanoclusters for rapid detection of ascorbic acid in biology samples

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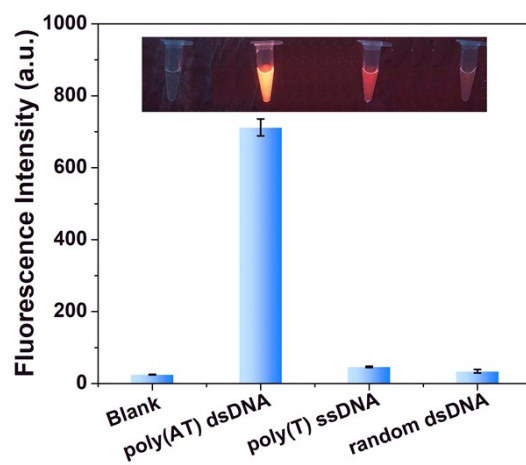


Fig. S1 Fluorescence intensity of the resulted MOPS buffer solutions in the presence of different oligonucleotides. [oligonucleotide] = 500 nM, [AA] = 3 mM, [Cu²⁺] = 0.3 mM.

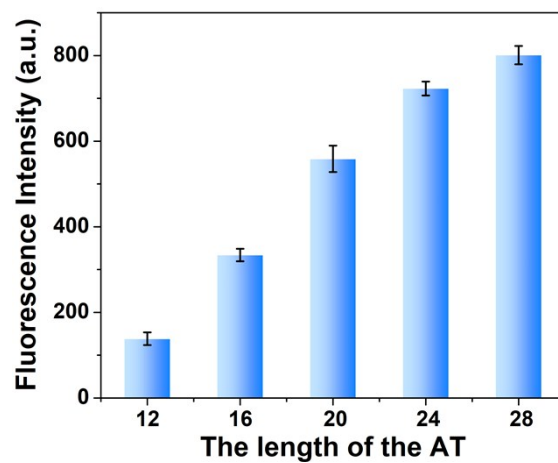


Fig. S2 Fluorescence intensity of the resulted MOPS buffer solutions in the presence of (AT) of different length. $[(AT)] = 500 \text{ nM}$, $[AA] = 3 \text{ mM}$, $[Cu^{2+}] = 0.3 \text{ mM}$.

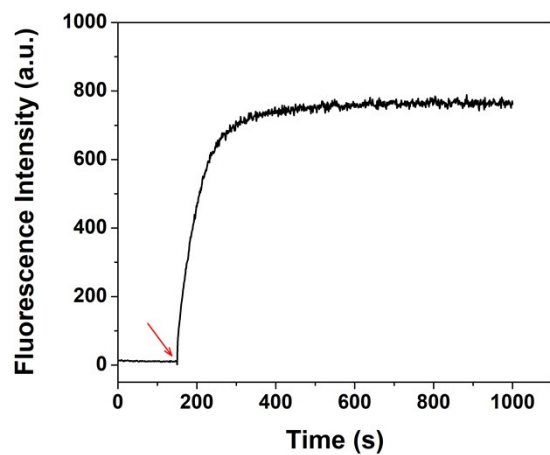


Fig. S3 Real-time fluorescence scans to demonstrate the fast response for AA sensing. The arrow marks the addition of AA. [(AT)₂₄ dsDNA] = 500 nM, [AA] = 3 mM, [Cu²⁺] = 0.3 mM.

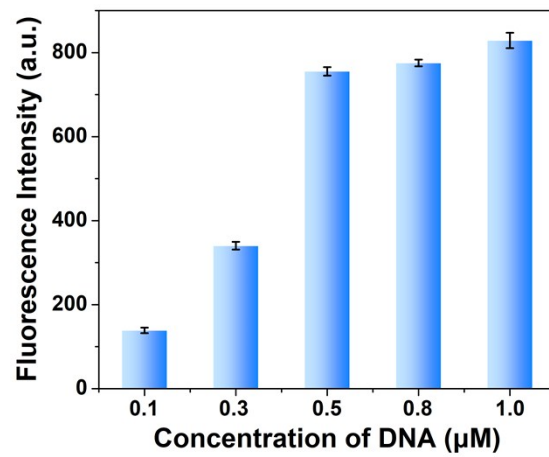


Fig. S4 Fluorescence intensity of the detection system at different concentration of (AT)₂₄ dsDNA. [AA] = 3 mM, [Cu²⁺] = 0.3 mM.

Table S2. Comparison of the present methods with some of the previously published methods in determination of AA

Detection probe	Method	Linear range (μM)	Detection limit (μM)	Ref.
Multi-wall carbon nanotubes	Electrochemistry	100-1000	49.8	1
Boron-doped diamond electrode	Electrochemistry	10-200	19	2
Mesoporous Carbon/Nafion composite film	Electrochemistry	40-800	20	3
CdSe quantum dots	Electrochemistry	100-1500	64.5	4
Au-PANI-GCE	Electrochemistry	10-12000	8.2	5
Graphene-zinc oxide	Electrochemistry	50–2350	3.71	6
Enzyme functional metal-organic framework	Colorimetry	2.57-10.1	1.03	7
Mesoporous silica-coated gold nanorods	Colorimetry	0-10	0.049	8
Co ₃ O ₄ /crumpled graphene microsphere	Colorimetry	30-140	0.19	9
Reduced graphene oxide nanosheets	Colorimetry	0.8-60	0.15	10
Carbon dots	Fluorescence	10-200	4.69	11
Graphitic carbon nitride nanosheets	Fluorescence	0.5-200	0.13	12
Graphene quantum dots	Fluorescence	1.11-300	0.32	13
Two-photon nanoparticles	Fluorescence	1-20	0.17	14
LaF ₃ :Ce,Tb nanoparticles	Fluorescence	8-100	2.4	15
Copper nanoclusters	Fluorescence	50-1000	41.9	This work

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