

Supporting Information (SI)

Soft nanoballs-encapsulated carbon dots for reactive oxygen species scavenging and the highly sensitive chemiluminescent assay of nucleic acid biomarker

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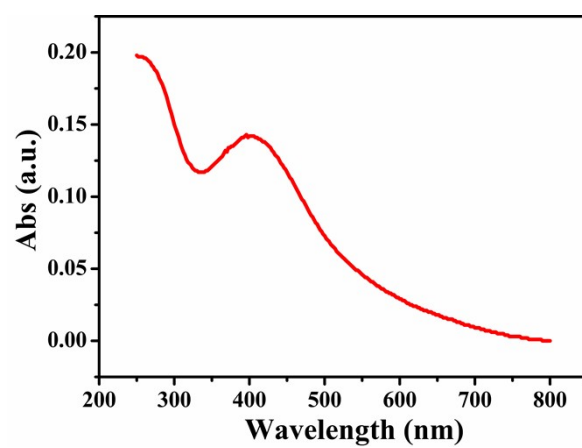


Figure S1 UV-vis absorption spectrum of CoOOH NFs.

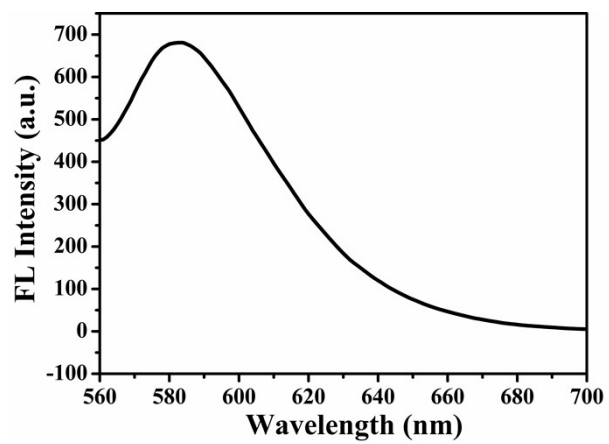


Figure S2 The fluorescence spectrum of broken SNBs.

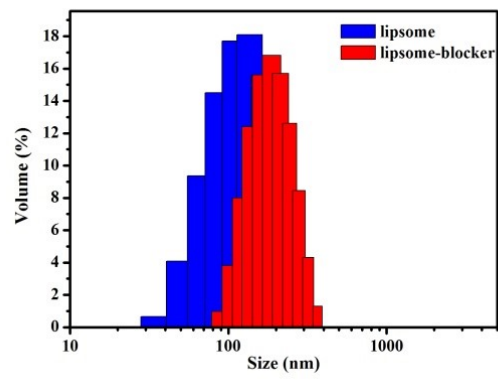


Figure S3 The average hydrodynamic diameter of liposome and liposome-blocker.

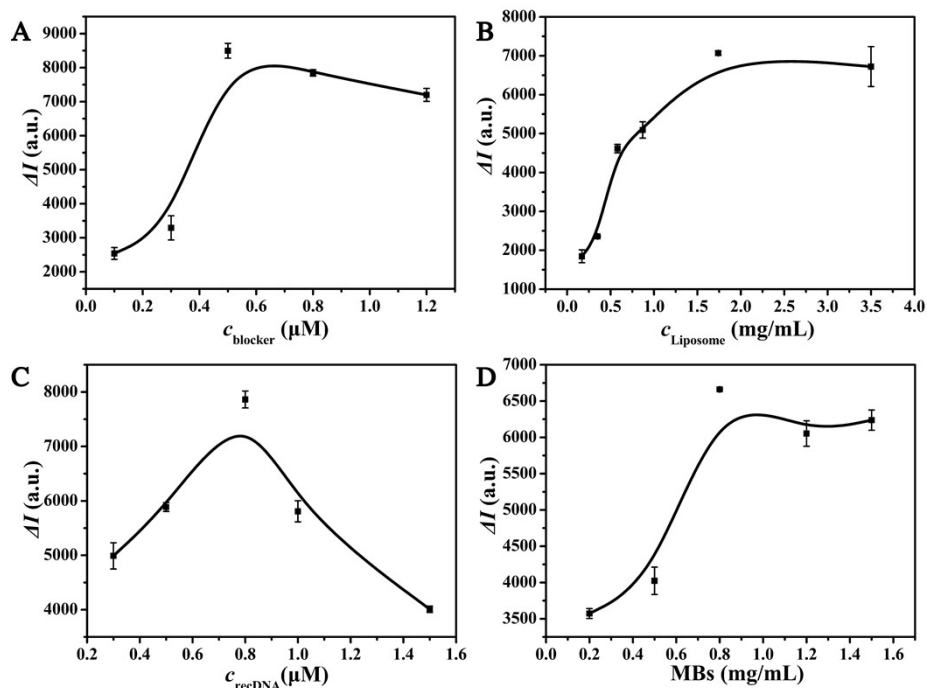


Figure S4 The effects of (A) blocker concentration, (B) liposome concentration, (C) recDNA and (D) MBs concentration on the CL system in the presence of 10 nM tDNA. Blocker chain, 0.5 μM ; liposome: 1.74 mg/mL; recDNA: 0.8 μM ; MBs: 0.8 mg/mL.

Table S1 The sequence information

Name	DNA Sequence (from 5' to 3')
recDNA	biotin-TTTTTTTTTTGAACCCAGCAGACAATGTAGCTTAGGTAC
blocker DNA	cholesterol- TTTTTTTTTTTTTTTTTTTTTACAACCTAAGCTACATTGTCTGC TG
fuel DNA	GTACCTAAGCTACATTGTCTGCTGG
tDNA	AGCTACATTGTCTGCTGGGTTTC
mis-1	AGCTACATTGTCTGCTGGGTTTG
mis-2	AGCTACATTGTCTGCTGGCTTTG
mis-4	AGCTACATTGTCTGCTCCCTTTG
DNA-21	TAGCTTATCAGACTGATGTTGA

Table S2 Comparison of nucleic acid biomarker detection between this work and other methods

Probes	Methods	Linear ranges	Detection limits	References
MBs-DNA-SNBs	Chemiluminescence	0.1-20 nM	59 pM	This work
WS ₂ nanosheet	Chemiluminescence	0.5-10 nM.	180 pM	1
Cy3-BHQ2-GO	Fluorescence	0.5-150 nM	0.32 nM	2
2Cy5-MB-GO	Fluorescence	0.1-10 nM	30 pM	3
TAMRA-DNA-GO	Fluorescence	0-16 nM	47 pM	4
	Anisotropy Assay			
PtNPs/rGO	Colorimetry	0.5-10 nM	0.4 nM	5
nanocomposites				
gold slide-DNA-AuNPs	Surface-enhanced	4.44-1480 nM	0.36 nM	6
	Raman scattering			

References

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