-Supporting information-

Label-free H1N1 immunosensor based on N-LIG/Au laser induced graphene microelectrode

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1. Comparison of different detection methods

Table S1. Comparison of H1N1 detection between different sensors

No.	Method	Material	Linear Range (fg mL^{-1})	LOD (fg mL^{-1})	Merits	Shortcomings	References
1	Fluorescence Immunoassay based on magnetic multifunctional nanospheres	Pst-AAm-COOH[a] /γ-Fe_2O_3 @ CdSe/ZnS QDs[b] /Ab	20~3500	20	Simultaneous detection; Ultrasensitive quantitative, specificity and anti-interference	Complex operation; Small detection range	Wu et al. 2019[1]
2	A nanocarrier chromogenic sandwich immunosensor based on signal amplification	PNLNs (TP@PNLNs)[c] /Ab1/H1N1/Ab2/ MNPs[d]	10~10^6	27.56	Recognition of multiple viruses; Excellent specificitiy	Few selective samples; Complex operation	Khoris et al. 2021[2]
3	Fluoroimmunoassay based on S-gCNQDs[e] coupled with Ag_2S nanocrystals	S-gCNQDs/Ab1/ H1N1/Ab2/ Ag_2S NCs[f]	10~10^6	5.5	Rapid, convenient, and versatile; Highly sensitive and selective	Complex operation; Analysis without complex biological sample	Achadu et al. 2020[3]

4	A electrochemical biosensors based on polyUiO-66@AgNPs[g]	polyUiO-66@AgNPs/Ab	100~10^9	54.7	High selectivity, good stability, excellent reproducibility and acceptable regenerability	LOD not low	Jia et al. 2021[4]
5	A magnetoflfluoro-immunosensing platform based on dual-functional plasmomagnetic graphene	Graphene @Au NPs @GA-IONPs[h]/HA Ab/H1N1/QD	1~10^4	7.27	High selectivity; Excellent sensitivity; A potential biosensing and diagnostic platform	Complex operation; Small detection range;	Lee et al. 2018[5]
6	An electrochemical immunosensor based on N-LIG[i]	N-LIG/Au/MUA /Ab/H1N1	0.01~10^7	0.004	Wide detection range; flexibility; High selectivity and ~~excellent~~ good sensitivity; Simple immune process	Un-reproducibility;	This work

a Pst-AAm-COOH: Poly(styrene/acrylamide) nanospheres; b QDs: Quantum dots; c PNLNs (TP@PNLNs): PP-encapsulated polymeric nanoparticle-laden nanocarriers; d MNPs: Magnetic nanoparticles; e S-gCNQDs: Sulfur-doped graphitic carbon nitride quantum dots; f NCs: nanocrystals; g polyUiO-66@AgNPs: Silver nanoparticle embedded polymer-zirconium-based metal-organic framework; h GA-IONPs: gallic acid-modifified oxidizable iron oxides nanoparticles; i N-LIG: N doped laser-induced graphene.

References:

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