Supporting Information

One-piece Lateral Flow-through Impedimetric Testing Strip for Label-free Detection of Clenbuterol Hydrochloride

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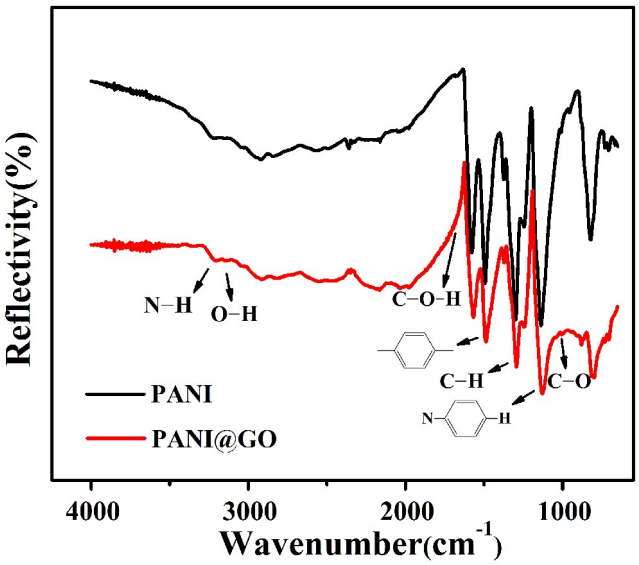
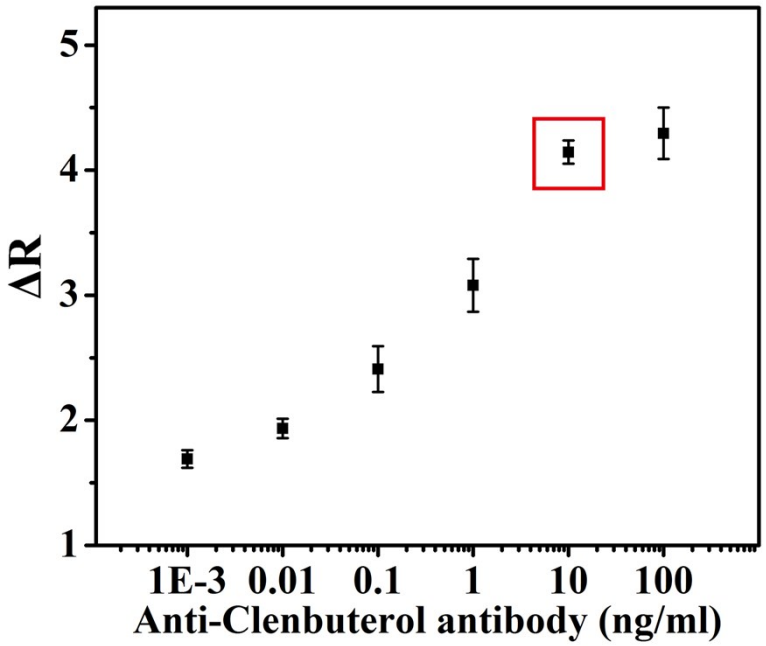


sFig.1 The FTIR of polyaniline (PANI) and polyaniline-graphene (PANI@GO) nanocomposites



sFig.2 On-strip direct immunoassay of anti-clenbuterol mAb and OVA-clenbuterol functionalized working electrode (n=3)

sTable 1 Comparison of PANI-based biosensors

Sensing material	Synthesis method	Material composition	Morphology	Application	Label-free	device	Disposable	Ref.
PANI@GO/ITO	One-step co-deposition with constant current: 6mA/cm^2 3min and 3mA/cm^2 15min	0.3M aniline 0.4mg/mL GO 1M $HClO_4$	Nanowires	Immune sensor	YES	YES	YES	***a***
PANI/Au/PWE	Seeds growth AuNPs, 20 cycles of CV in a potential range of -0.1-0.8V at scan rate of 50 mV·s^{-1}	10μL growth aqueous solution, 10μM aniline 0.1M H_2SO_4	Nanofibers	Immune sensor	NO	YES	YES	[1]
Concanavalin A /PANI/SWE	Constant potential of 2.0 mV 2min, using glutaraldehyde as a cross linker for immobilizing Concanavalin A	Aniline 1M H_2SO_4, 200μg/mL Concanavalin A		Detection of bacterial toxin	NO	NO	NO	[2]
HRP/GO@PANI/ITO	CV in a potential range of 2.0-1.1V at scan rate of 20 mV·s^{-1}, using glutaraldehyde as a cross linker for immobilizing HRP	0.2M aniline 50μL GO 1M HCl, 1mg/mL HRP	Porous matrix	Detection of artesunate	NO	NO	NO	[3]
AuNPs/PANI/CS-GS/GCE	Dropped 5μL CS-GS soultion, 6 cycles of CV in a potential range of -0.2-1.0V at scan rate of 50 mV·s^{-1}, deposition of AuNPs at potential of -0.2 V for 100 s	CS-GS, 0.15 M aniline 0.5M H_2SO_4, 3 mM $HAuCl_4$ 0.1 M KNO_3		DNA sensor	NO	NO	NO	[4]
PANI/GO/GCE	Dropped 6μL GO soultion, three-step electrochemical deposition: 0.06 mA/cm^2 0.5h, 0.03 mA/cm^2 3h, 0.015 mA/cm^2 3h	2mg/mL GO, 0.5 M aniline 1M HCl	Nanowires	DNA sensor	NO	NO	NO	[5]

a This work; ITO: indium tin oxide; GCE: glass carbon electrode; SPE: screen printed electrode; EIS: electrical impedance spectroscopy; CV: cyclic voltammetry; DPV: differential pulse voltammetry; LSV: liner sweep voltammetry; GCE: glass carbon electrode; PWE: paper work electrode; SWE: steel work electrode.

Reference

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