Supporting Information

Construction of Flexible Electrochemiluminescence Platform for Sweat Detection

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Supporting Information includes Figure S1-S7 and Table S1-S2.

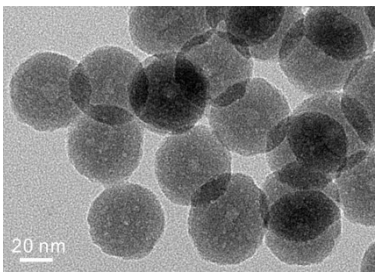

Figure S1. HRTEM images of $Ru@SiO_2$ nanoparticles without PEI.

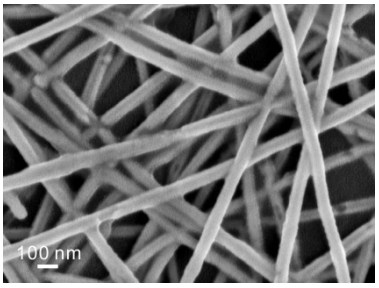

Figure S2. SEM image of bare Au NTs.

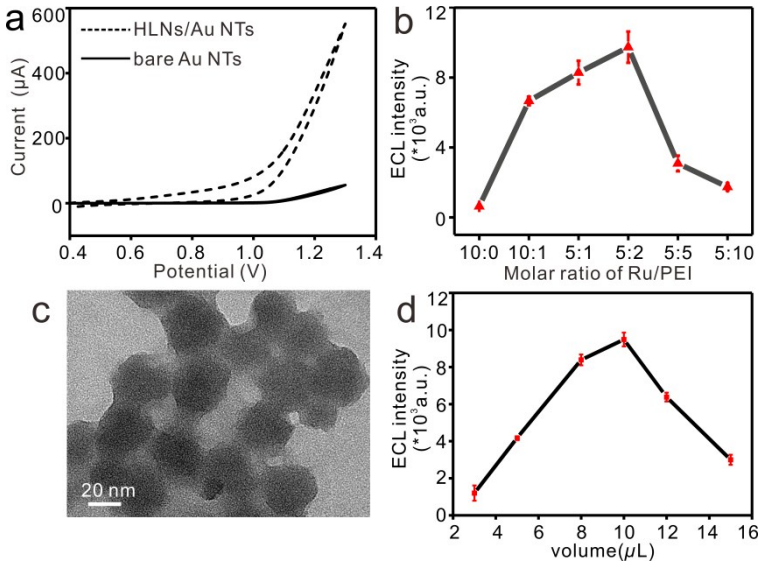

Figure S3. (a) Cyclic voltammograms of HLNs/Au NTs (dashed line) and bare Au NTs (solid line) in 0.1 M PBS (pH 7.4) at the scan range of 0.4 -1.3 V; (b) ECL response of HLNs/Au NTs/PDMS with different molar ratio of Ru(II) to PEI during the synthesized process of HLNs; (c) HRTEM images of HLNs with the molar ratio of 1:2 of Ru(II) to PEI; (d) Optimization of the dropped amount of HLNs on the ECL responses.

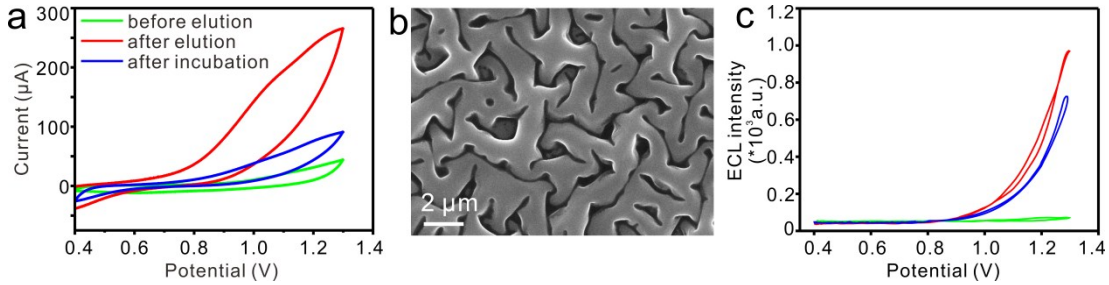

Figure S4. (a) Cyclic voltammograms obtained at MIP/HLNs/Au NTs in 600 μL 0.1 M PBS (pH 7.4) during elution and incubation process; (b) SEM image of surface appearance of NIP layer; (c) ECL signals in 0.1 M PBS (pH 7.4) for NIP/HLNs/Au NTs during before (green) and after elution (red), then rebinding (blue) process.

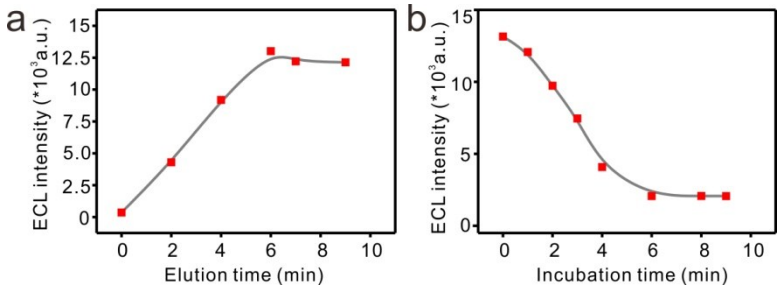

Figure S5. Optimization of (a) elution time and (b) rebinding time for the MIP-ECL sensor.

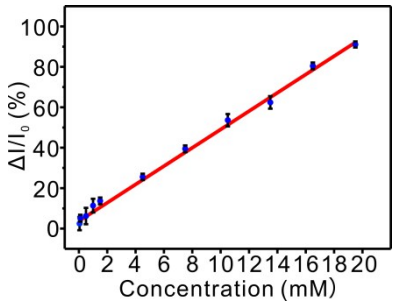

Figure S6. Calibration plot for increasing determination of urea over the 0.045, 0.09, 0.45, 1, 1.5, 4.5, 7.5, 10.5, 13.5, 16.5, 19.5 mM range with the flexible urea-imprinted HLNs/Au NTs sensor. Error bars represent standard deviations, n ≥ 3. The regression equation is expressed as $\Delta I/I_0 = 0.0443c + 0.0564$ where R^2 is 0.9980.

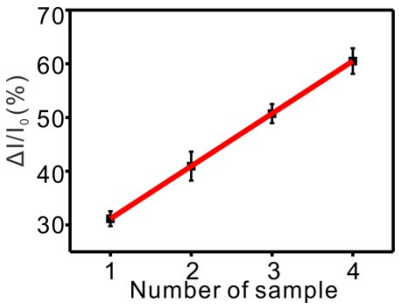

Figure S7. The ratio of ECL change value ($\Delta I/I_0$) of flexible MIP-ECL platform in artificial sweat with extra lactate added from sample 1 to 4: 0 mM, 5 mM, 10 mM, 15 mM.

Table S1. Recovery determination of lactate in artificial sweat by flexible MIP-ECL sensor.

Content of lactate in the sample	Added (mM)	Detected (mM)	Recovery (%)	RSD (n = 3) (%)
Artificial sweat 5.55 mM	2.50	8.01	98.4	2.1
	5.00	10.73	103.6	1.5
	7.50	13.01	99.5	2.1

Table S2. Recovery determination of lactate in authentic sweat samples by flexible MIP-ECL sensor.

Content of lactate in the sample	Added (mM)	Detected (mM)	Recovery (%)	RSD (n = 3) (%)
Authentic sweat (number 4) 8.60 mM	2.50	11.31	108.4	3.3
	5.00	13.22	92.4	2.5
	7.50	15.85	96.7	1.3