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The supplementary information

Table S1 Determination of UA, DA, and AA in urine sample (n=3).

	Diluted urine sample (μM)	Spiking (μM)	Found (μM)	R.S.D. [a](%)	Recovery [b](%)
UA	10.88 [c]	10	20.78	2.9	99
DA	0	10	10.82	3.1	108
AA	0	500	505.1	1.6	101

[a] Relative standard deviation.

[b]

$$\text{Recovery} = \frac{\text{Found (uM)} - \text{Diluted urine sample (uM)}}{\text{Spiking (uM)}}$$

[c] Average of three measurements (R.S.D.=3.5%).

Table S2 Surface species content of ZIF-8 NPs and N-PCNPs obtained from XPS results

	Species content (atomic %)			
	C	N	O	Zn
ZIF-8 NPs	62.33	21.44	3.76	12.47
N-PCNPs	93.74	1.67	4.6	0

Table S3 Comparison of the analytical performance of different modified electrodes for simultaneous determination of AA, DA and UA

Electrode materials	Peak separation (mV)		Detection limit (μM)			Linear range (μM)			Ref.
	AA-DA	DA-UA	AA	DA	UA	AA	DA	UA	
NG[a]	200	132	2.2	0.25	0.045	5-1300	0.5-170	0.1-20	S1
p-ATD[b]	110	152	2.01	0.33	0.19	30-300	5-50	10-100	S2
ZnO/RM	160	130	1.4	0.7	4.5	15-240	6-960	50-800	S3
Pt-Au hybrid	150	190	103	24	21	103-165	24-384	21-336	S4
PGE[c]	222	138	13	0.1	1.4	25-500	1-20	2.5-30	S5
Chitosan-graphene	165	90	50	1	2	50-1200	1-24	2-45	S6
Pt/MWCNT	166	120	20	0.048	0.35	24.5-765	0.061-2.03	0.455-50	S7
GNPs/PImox[d]	184	165	2.0	0.08	0.5	210-1010	5-268	6-486	S8
N-PCNPs	228	124	0.74	0.011	0.021	80-2000	0.5-30	4-50	This work

[a] Nitrogen doped graphene

[b] Electropolymerized film of 2-amino-1,3,4-thiadiazole

[c] Pyrolytic graphite electrode

[d] Gold nanoparticles decorated overoxidized-polyimidazol film

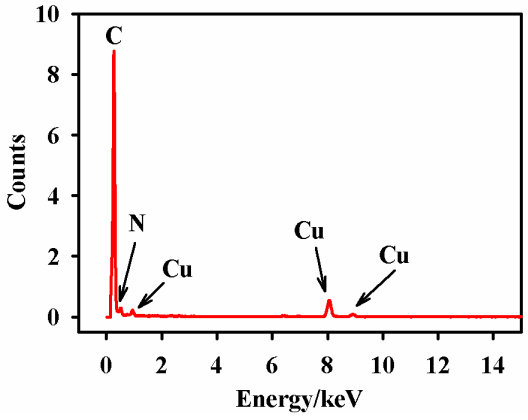

Fig. S1 EDS spectra of N-PCNPs. The Cu peaks are derived from TEM sample grid. No Zn-derived peaks are found.

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