Supplement Table 1

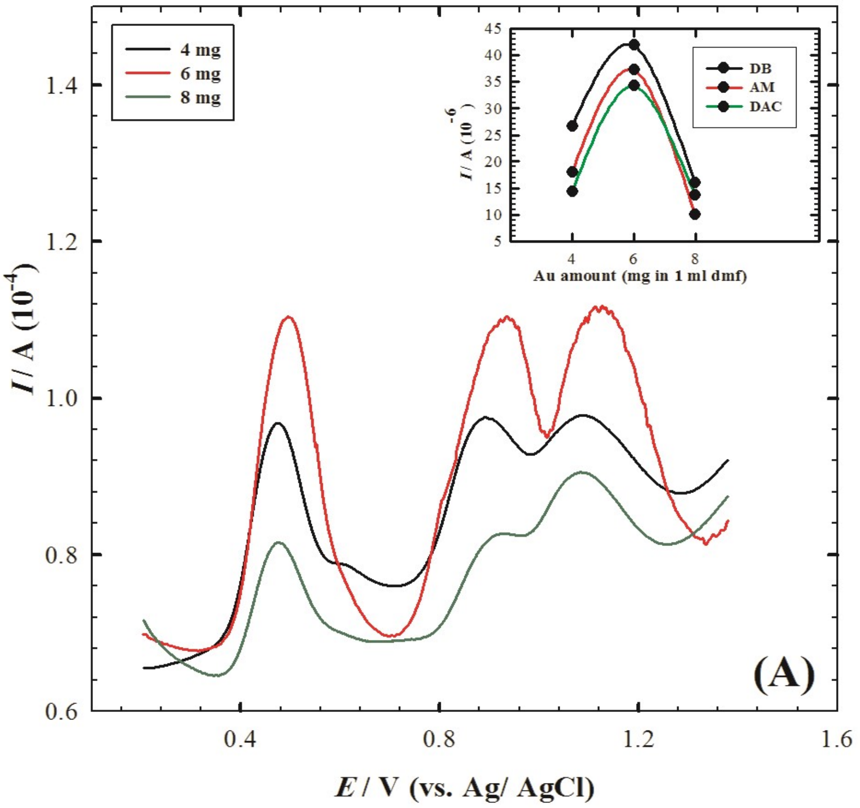
Instrument	**Uses**
BAS-Epsilon electrochemical equipment with a cell contained three electrodes (GCE, platinum wire and Ag/AgCl.	Voltammetry measurements
Quanta 250 FEG instrument	Scanning electron microscopy FE-SEM measurement
Quanta 250 FEG instrument	energy dispersive X-ray spectroscopy (EDAX) measurement
Witec Raman confocal microscope (laser excitation wavelength of 532 nm and 2 mW energy).	Raman spectroscopy measurement
Fourier transform infrared (FTIR) Shimadzu IR-Affinity 1 Spectrometer (Japan).	Surface functional groups characterization

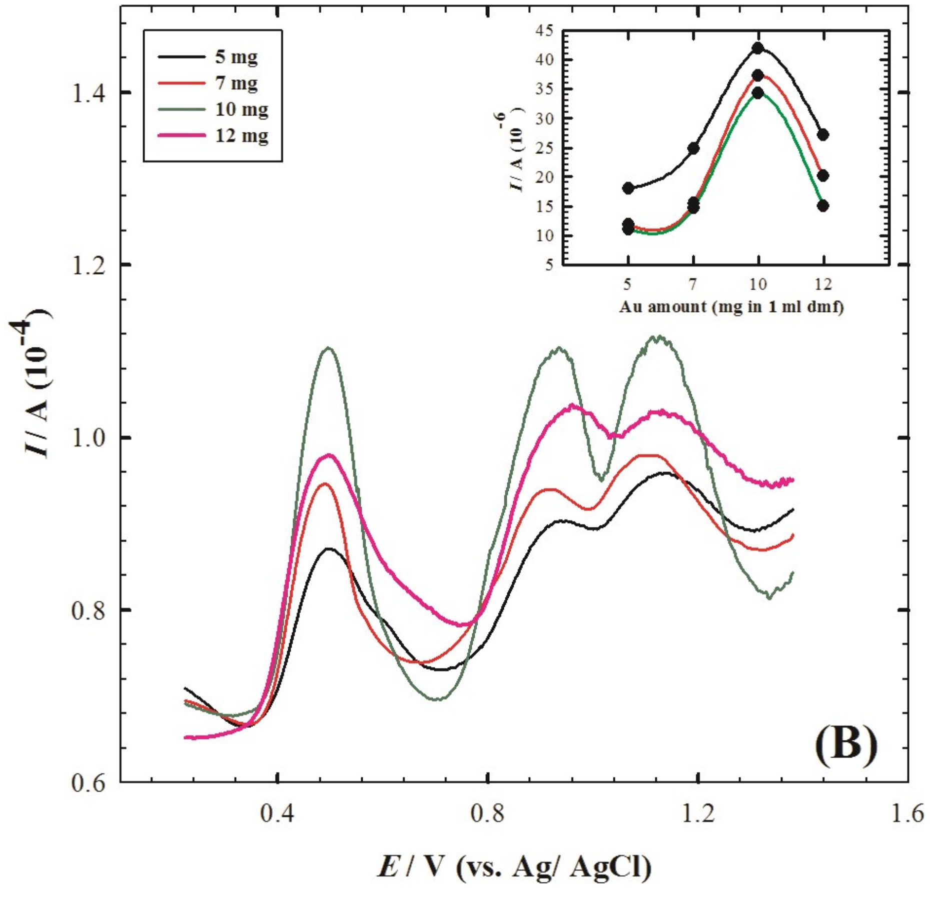
Supplement Table 2: Comparison of figures of merit of TU-SAMs with different methods mentioned in literature for DB, PA, AM, and DAC determination.

Electrode	**Linear dynamic range (µM)**				**Detection limit (nM)**			
	DB	**PA**	**AM**	**DAC**	**DB**	**PA**	**AM**	**DAC**
RP-HPLC method [29]	0.165–6.63	-	-	-	165	-	-	-
Spectrophotometric method [30]	5.3–120	-	-	-	5300	-	-	-
HPTLC method [43]	-	238–1190	-	-	-	238×10^3	-	-
UPLC/DAD method [44]	-	331–3970	-	-	-	331×10^3	-	-
Synchronous fluorescence spectrofluorometric method [35]	-	-	0.489–4.89	-	-	-	12	-
HPLC method [36]	-	-	0.489–196	-	-	-	26.9	-
HPLC method with UV [8]	-	-	-	0.0677–2.71	-	-	-	67.7
HPLC method [9]	-	-	-	0.112–4.06	-	-	-	112
TU-SAMs **[This work]**	**0.03-20**	**0.05-40**	**0.01-35**	**0.01-20**	**0.85**	**3.78**	**0.65**	**0.60**

RP-HPLC: Reversed phase-high performance liquid chromatography, **HPTLC:** High-performance thin-layer chromatography, **UPLC/DAD**: Ultra high-performance liquid chromatography-diode array detector-tandem mass spectrometry.

Supplement Figure 1

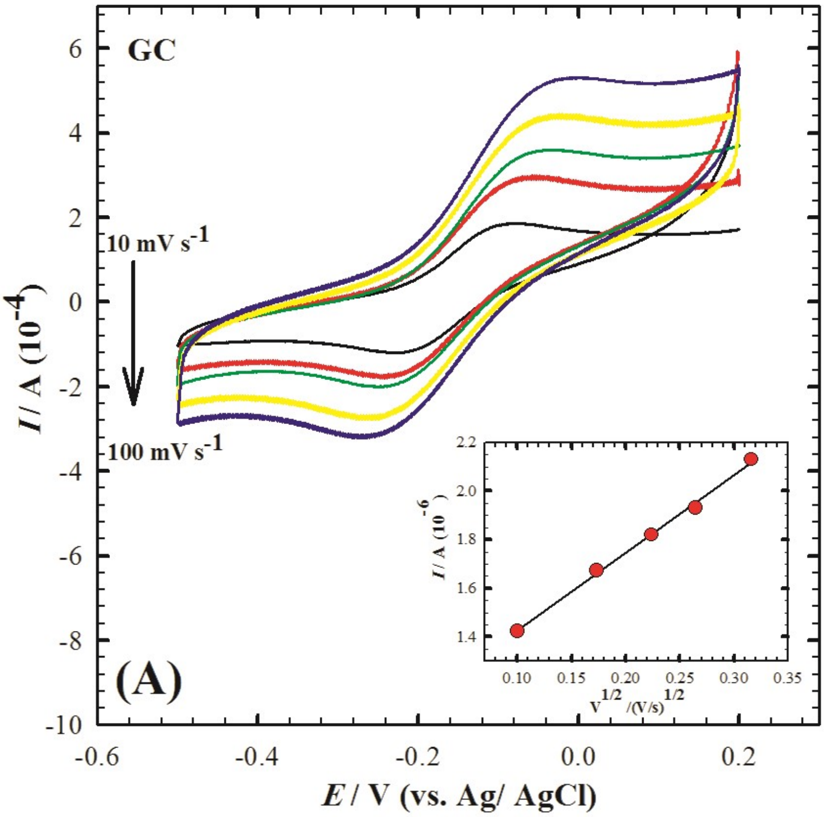


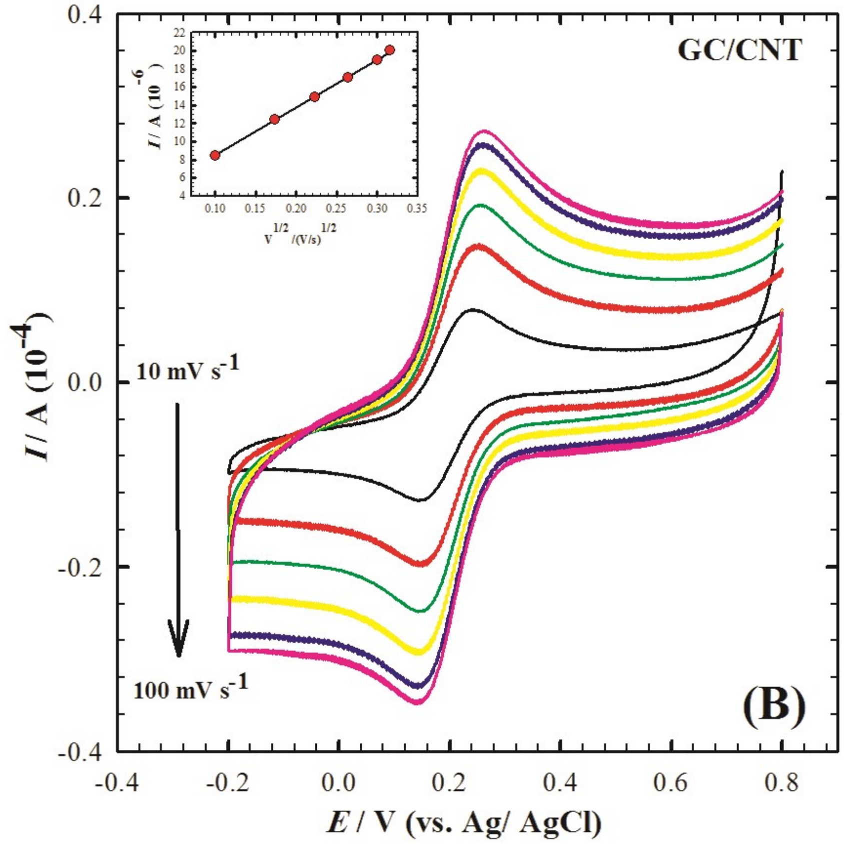


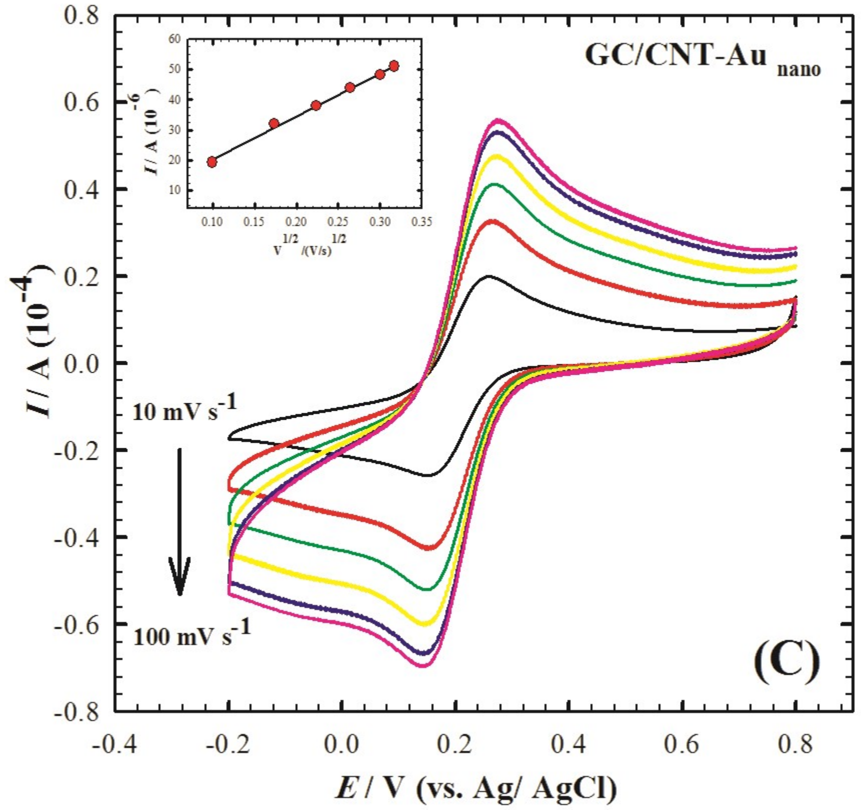
Suppl. Figure 1(A): DPVs for 50 µM DB, 50 µM AM and 30 µM DAC prepared in 0.1 M PBS/pH 2.0 recorded at TU-SAMs using different amounts of Au_{nano} (4-8 mg) in 1.0 mL DMF, scan rate 50 $mV.s^{-1}$. Inset; the relation between the anodic peak current for each of DB, AM, and DAC and different Au_{nano} amounts.

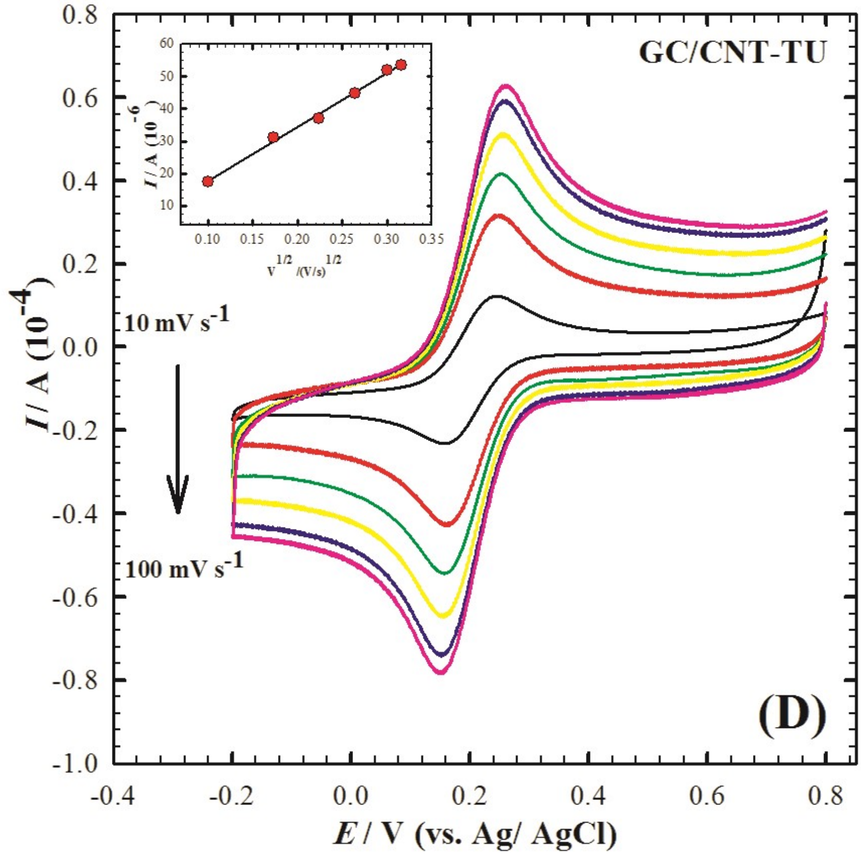
Suppl. Figure 1(B): DPVs for 50 µM DB, 50 µM AM and 30 µM DAC prepared in 0.1 M PBS/pH 2.0 recorded at TU-SAMs using different amounts of TU (5-12 mg) in 1.0 mL DMF, scan rate 50 $mV.s^{-1}$. Inset; the relation between the anodic peak current for each of DB, AM and DAC and different TU amounts.

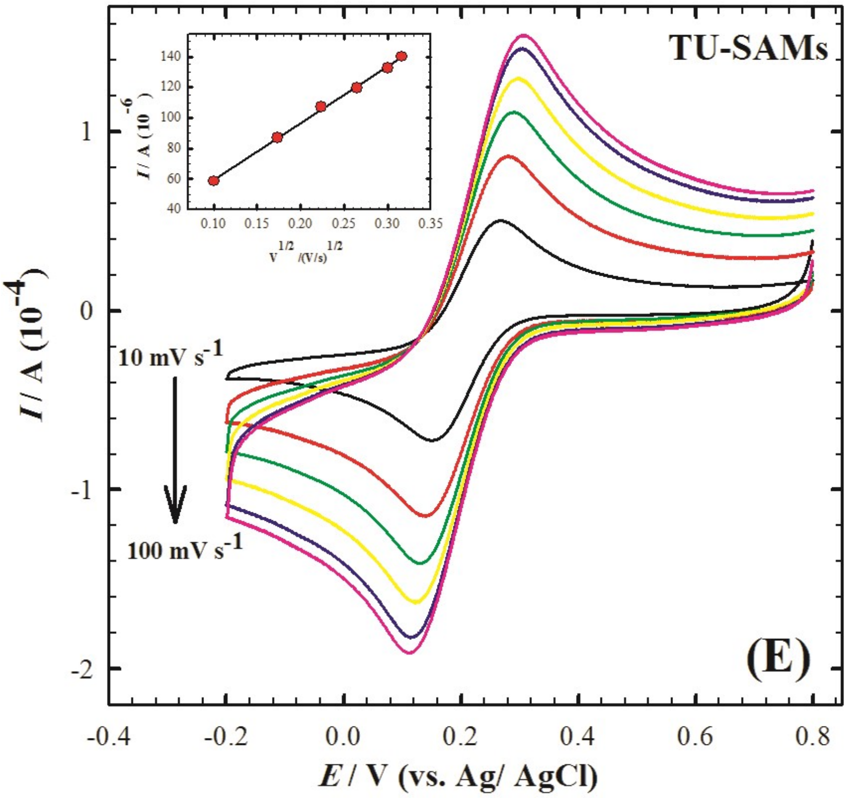
Supplement Figure 2




GC/CNT
(B)
10 mV s-1
100 mV s-1
I / A (10-4)
0.4
0.2
0.0
-0.2
-0.4
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
E / V (vs. Ag/ AgCl)
I / A (10-6)
22
20
18
16
14
12
10
8
6
4
0.10
0.15
0.20
0.25
0.30
0.35
V1/2 /(V/s)1/2

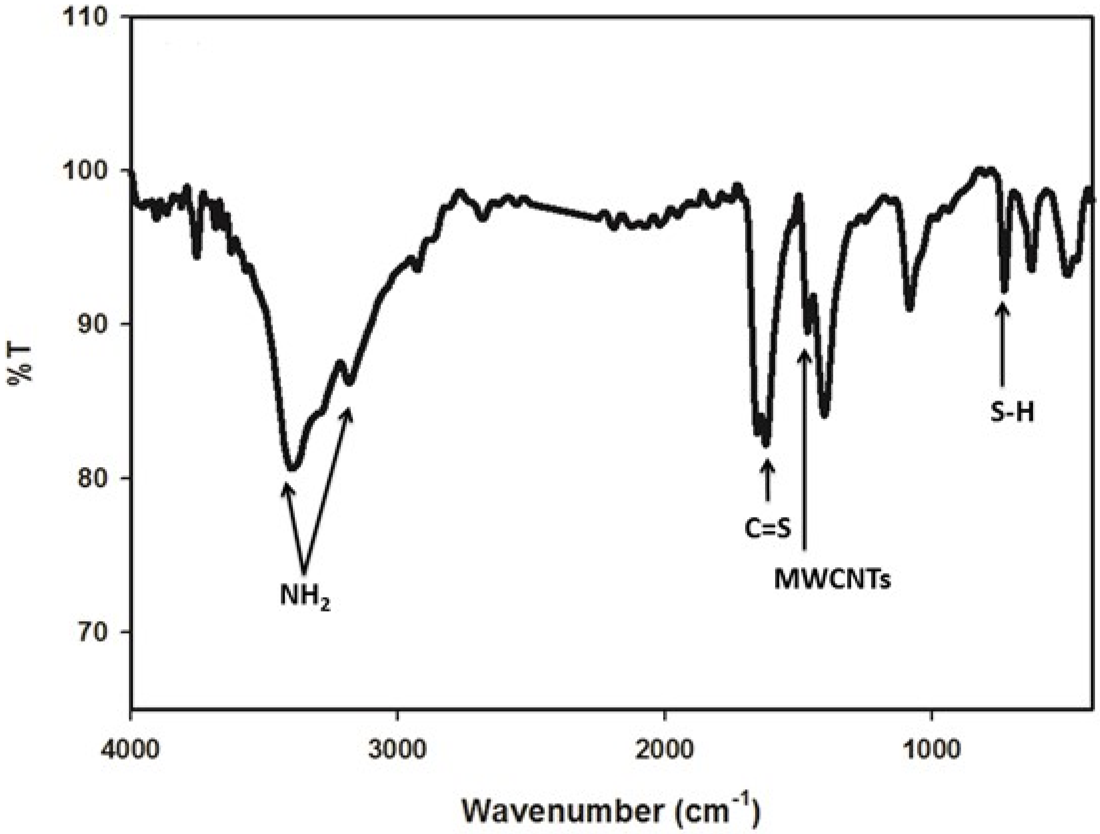

GC/CNT-Au nano
(C)
10 mV s-1
100 mV s-1
I / A (10-4)
E / V (vs. Ag/ AgCl)
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
I / A (10-6)
V1/2 /(V/s)1/2
60
50
40
30
20
10
0.10
0.15
0.20
0.25
0.30
0.35


GC/CNT-TU
(D)
10 mV s-1
100 mV s-1
I / A (10-4)
E / V (vs. Ag/ AgCl)
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
I / A (10-6)
V1/2 /(V/s)1/2
60
50
40
30
20
10
0.10
0.15
0.20
0.25
0.30
0.35



Suppl. Figure 2: CVs of 1.0 mM $K_3[Fe(CN)_6]$ prepared in 0.1 M KCl recorded at (A) GC, (B) GC/CNT, (C) GC/CNT-AU$_{nano}$, (D) GC/CNT-TU, and (E) TU-SAMs at different scan rate values from 10 to 100 mV.s^{-1}. Insets: Plot of the peak current of $K_3[Fe(CN)_6]$ as a function of the square root of scan rate.

Supplement Figure 3



Suppl. Figure 3: FTIR spectrum of CNTs/Au$_{nano}$-TU composite