

Supporting information

Table 1S

Experimental factors, levels and analysis of variance (ANOVA) table for response surface quadratic model.

Factors	Symbol	Levels				
		(-2)	(-1)	(0)	(+1)	(+2)
Voltage (V)	A	100	150	200	250	300
Extraction time (min)	B	10	15	20	25	30
pH; DP	C	2	3	4	5	6
pH; AP	D	2	3	4	5	6

Source	Sum of Squares	df	Mean Square	F-Value	p-value Prob > F	
Model	10.89	14	0.78	19.48	< 0.0001	significant
A-Voltage	0.08	1	0.08	2	0.1825	
B-Extraction time	0.019	1	0.019	0.46	0.5086	
C-pH; DP	0.024	1	0.024	0.6	0.452	
D-pH; AP	2.86	1	2.86	71.74	< 0.0001	
AB	0.051	1	0.051	1.29	0.2786	
AC	0.54	1	0.54	13.5	0.0032	
AD	0.024	1	0.024	0.61	0.4508	
BC	0.85	1	0.85	21.17	0.0006	
BD	0.43	1	0.43	10.8	0.0065	
CD	0.26	1	0.26	6.62	0.0244	
A ²	0.13	1	0.13	3.22	0.0982	
B ²	0.16	1	0.16	3.92	0.071	
C ²	0.29	1	0.29	7.21	0.0198	
D ²	3.3	1	3.3	82.76	< 0.0001	
Residual	0.48	12	0.04			
Lack of Fit	0.44	10	0.044	2.3	0.3404	not significant
Pure Error	0.038	2	0.019			
Cor Total	11.37	26				

Table 2S

Comparison of PGE with other modified electrodes presented for electrochemical determination of CLZ.

Electrode	Method	Linearity ^a	LOD ^a	Ref.
EPGCE ^b	DPV ^c	0.1-1 1-10 10-100	0.008	1
HRP/CPE ^d	CV ^e	1-10	0.17	2
MHA/Au ^f	DPV	1-50	0.007	3
TiO ₂ NP/GCE ^g	AD-DPV ^h	0.5-45	0.061	4
PPY/CNT/GCE ⁱ	LSW ^j	0.01-0.4 0.4-5	0.003	5
PGE ^k	DPV	0.008-0.03 0.03-4.6	0.0027	This work

^aAll concentrations are based on μM , ^bElectrochemically pretreated glassy carbon, ^cDifferential pulse voltammetry, ^dHorseradish peroxidase carbon paste electrode, ^eCyclic voltammetry ^f16-Mercaptohexadecanoic acid, ^gTiO₂ nanoparticles, ^hAdsorptive differential pulse voltammetry, ⁱMultiwalled carbon nanotubes/new coccine doped polypyrrole, ^jLinear sweep voltammetry, ^kpencil graphite electrode.

1. K. Farhadi and A. Karimpour, *Analytical sciences*, 2007, **23**, 479-483.
2. B. Blankert, O. Dominguez, W. El Ayyas, J. Arcos and J. M. Kauffmann, *Analytical letters*, 2005, **37**, 903-913.
3. F. Huang, S. Qu, S. Zhang, B. Liu and J. Kong, *Talanta*, 2007, **72**, 457-462.
4. M. H. Mashhadizadeh and E. Afshar, *Electrochimica Acta*, 2013, **87**, 816-823.
5. S. Shahrokhian, Z. Kamalzadeh and A. Hamzehloei, *Bioelectrochemistry*, 2013, **90**, 36-43.

Figure 1S

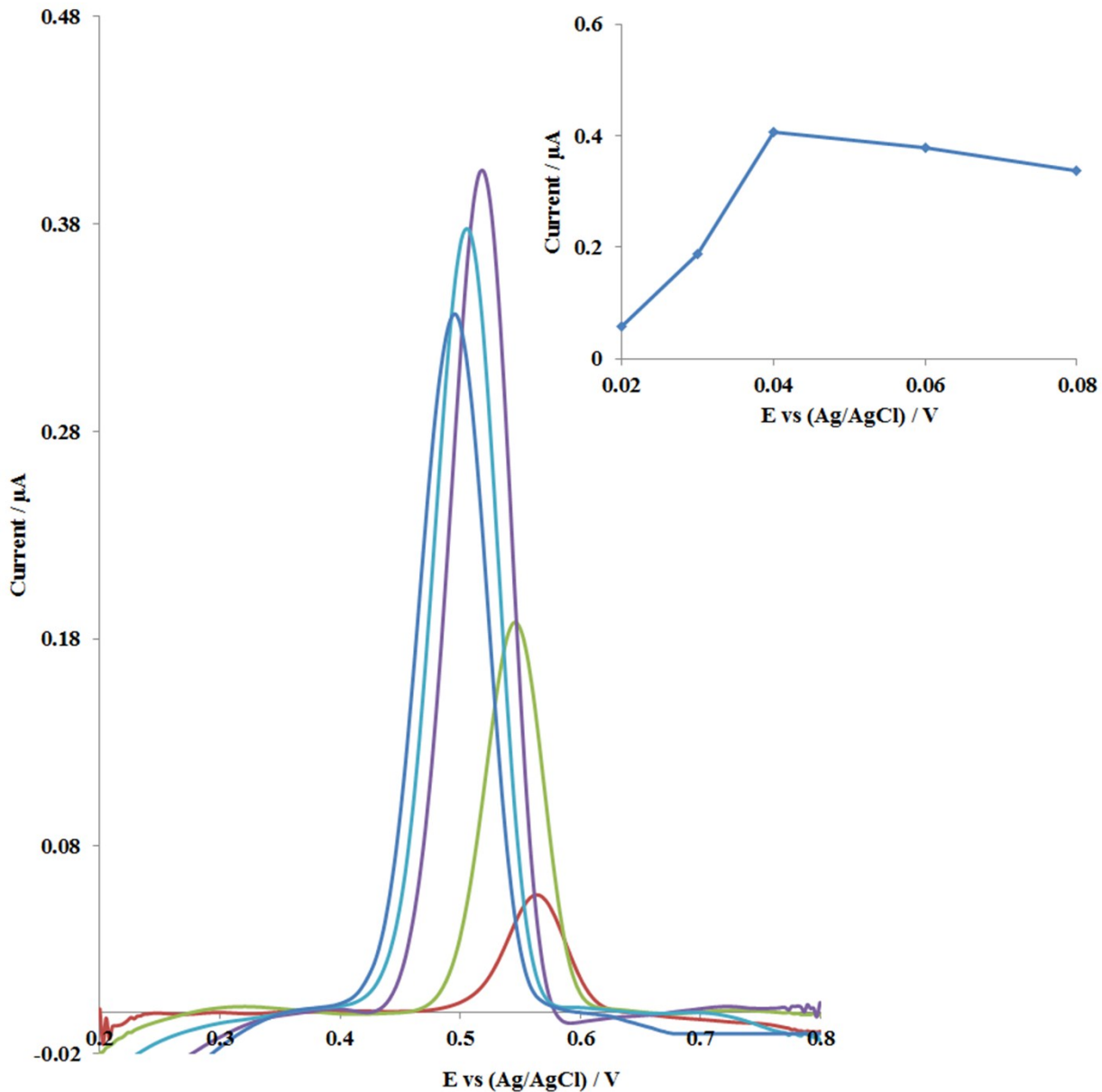


Figure 1S. DP voltammograms of 0.2 $\mu\text{g mL}^{-1}$ CLZ in 0.1 mM HCl on PGE for various modulation amplitudes: (a) 20 mV, (b) 30 mV, (c) 40 mV, (d) 60 mV and (e) 80 mV at scan rate of 10 mV s^{-1} .

Figure 2S

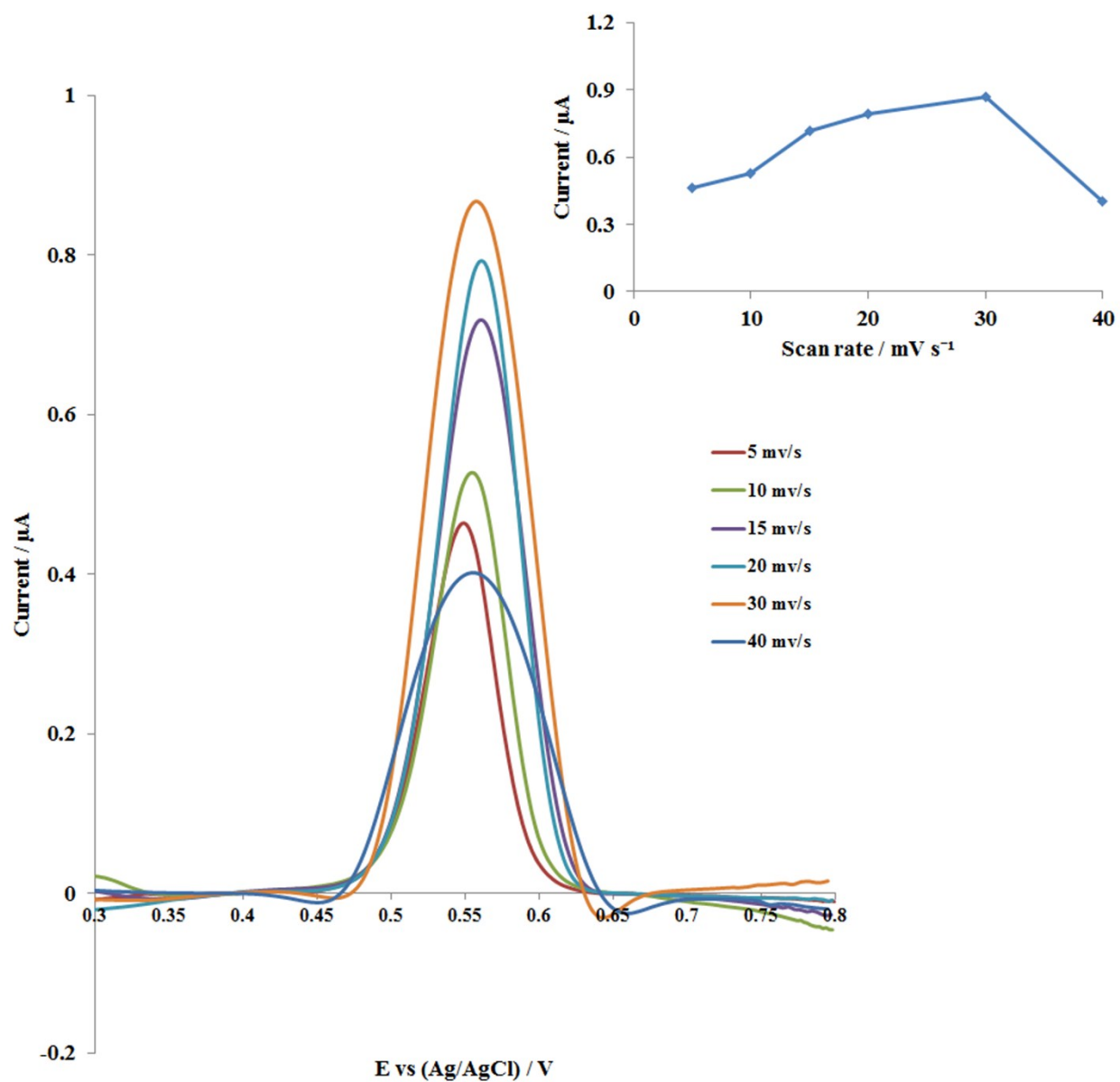


Figure 2S. DP voltammograms of 0.2 $\mu\text{g mL}^{-1}$ CLZ in 0.1 mM HCl on PGE for series of scan rates: (a) 5 mV s^{-1} , (b) 10 mV s^{-1} , (c) 15 mV s^{-1} , (d) 20 mV s^{-1} , (e) 30 mV s^{-1} and (f) 40 mV s^{-1} ; modulation amplitudes: 40 mV.

Figure 3S

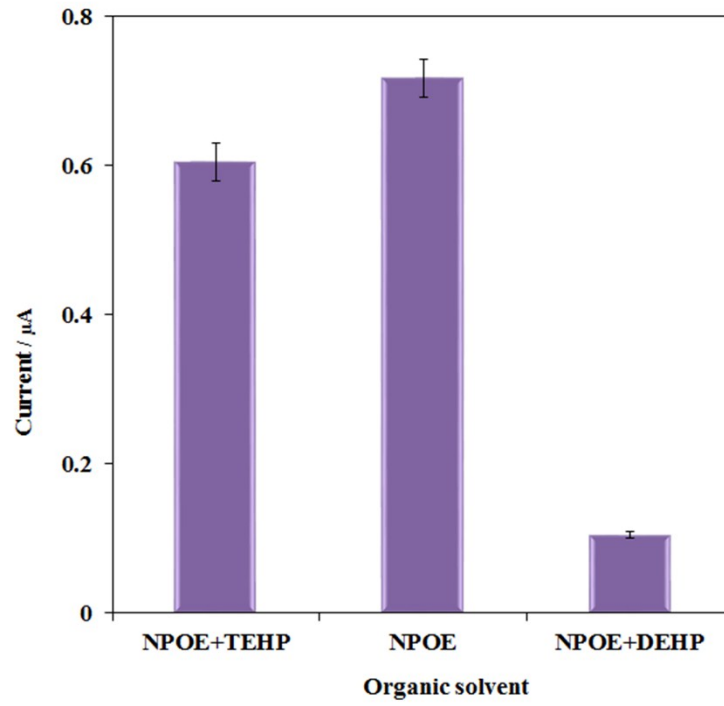


Figure 3S. Current of CLZ with different organic solvent as SLM.