Supplementary Information

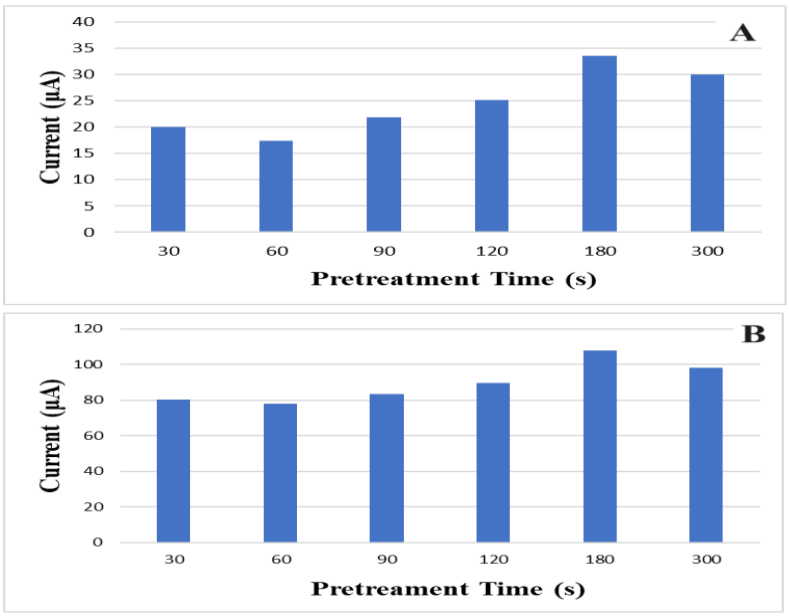

Fig. S1. Histograms represent (A) DPV peak current, (B) SWV peak current of 300 µg/mL EZP in 0.04 M BR buffer, pH 7, after pretreatment at -1.5 V for various durations in 0.04 M BR buffer/0.1 M NaCl solution, pH 7.

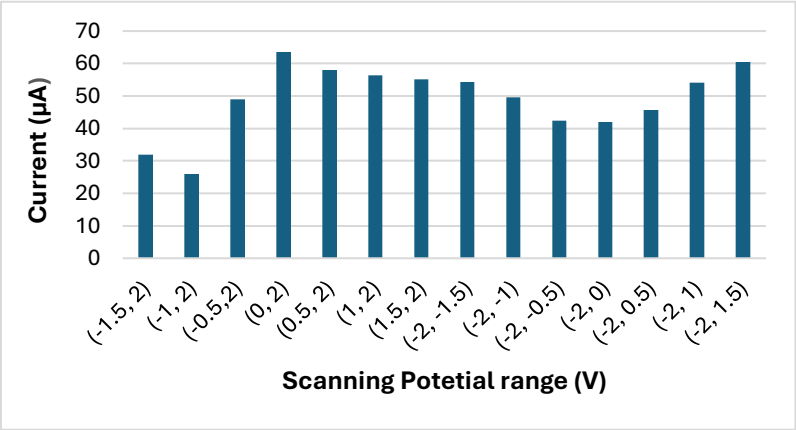

Fig. S2. A histogram represents DPV peak current of 300 µg/mL EZP in 0.04 M BR buffer, pH 7, after pretreatment at various potential ranges using a 50 mV/s scan rate for 100 cycles in 0.04 M BR buffer/0.1 M NaCl solution, pH 7.

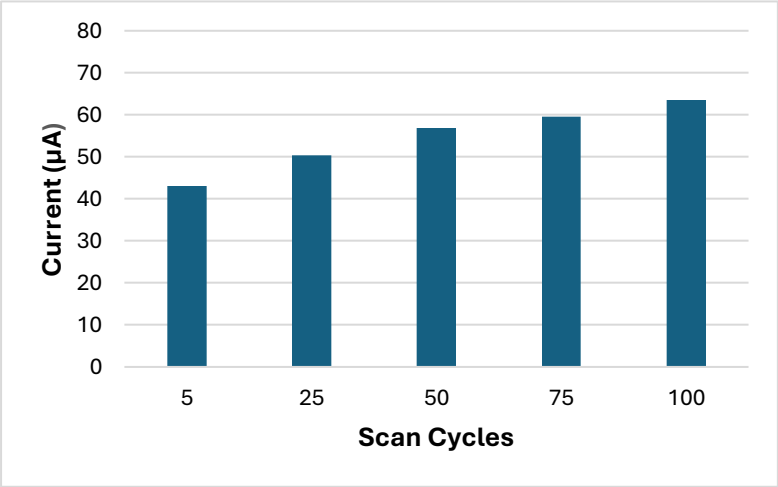

Fig. S3. A histogram represents DPV peak current of 300 µg/mL EZP in 0.04 M BR buffer, pH 7, after pretreatment with varying scan numbers using 0 to 2 V scanning potential range and 50 mV/s scan rate in 0.04 M BR buffer/0.1 M NaCl solution, pH 7.

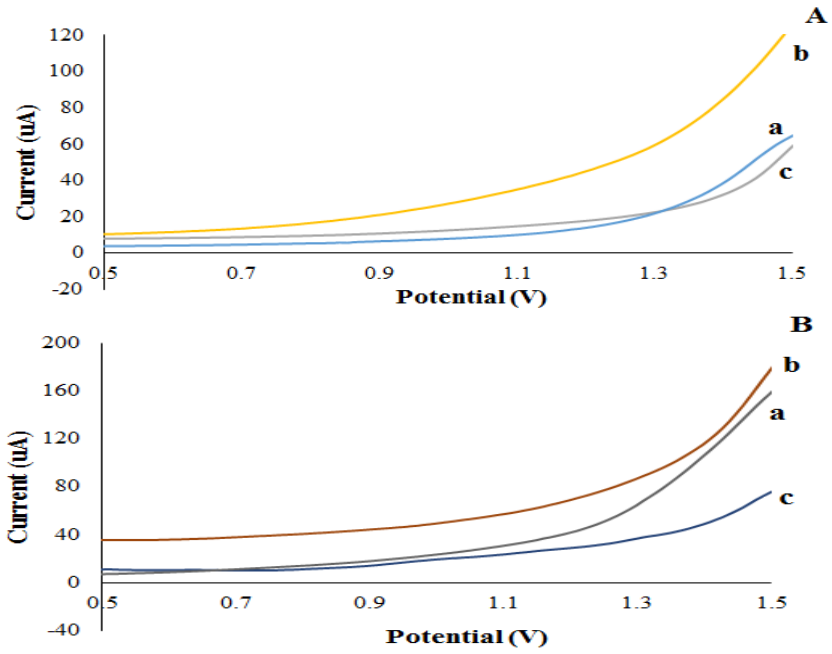

Fig. S4. (A) Blank DP-voltammograms of (a) 0.04 M BR buffer pH 7 obtained by NPGE, (b) 0.04 M BR buffer pH 7 using potentiodynamically PPGE (c) 0.01 M BR buffer, pH 7, containing 0.1 M NaCl using potentiodynamically PPGE. (B) Blank SW-voltammograms of (a) 0.04 M BR buffer pH 7 using NPGE, (b) 0.04 M BR buffer pH 7 obtained by potentiostatically PPGE (c) 0.01 M BR buffer, pH 7, containing 0.1 M NaCl using potentiostatically PPGE.

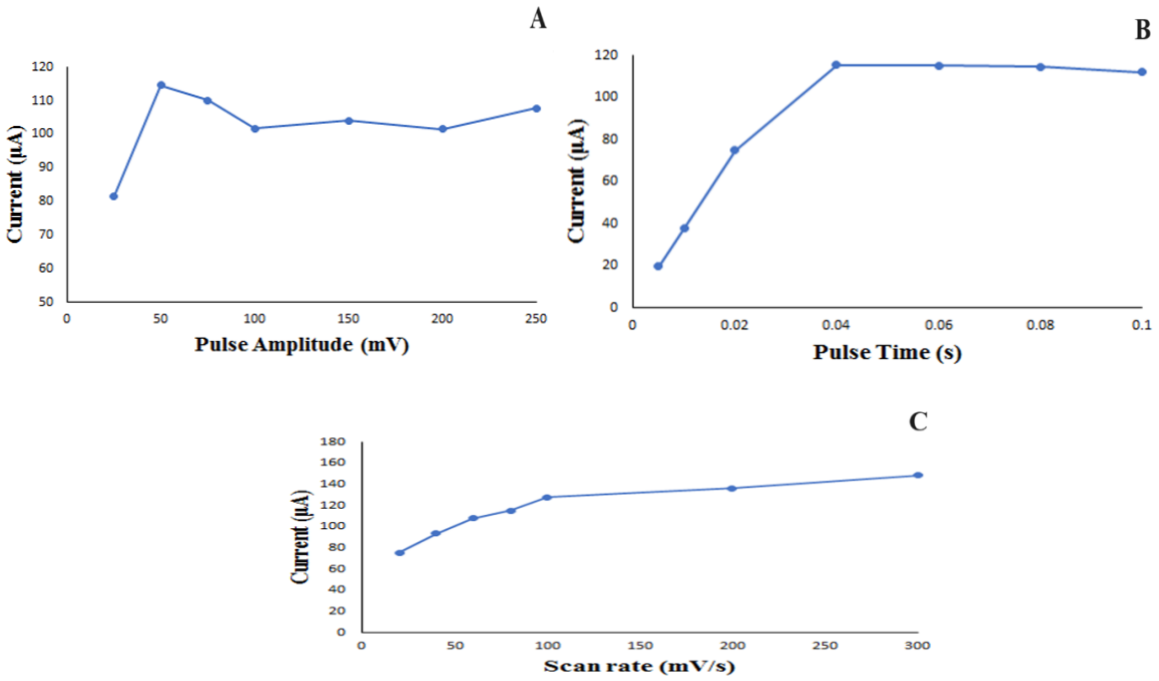

Fig. S5. The current produced by DPV of 300 µg/mL EZP prepared in 0.01 M BR buffer, pH 7, containing 0.1 M NaCl upon variation of (A) pulse amplitude (pulse time 0.04 s, sweep rate 80 mV/s), (B) pulse time (pulse amplitude 50 mV, sweep rate 80 mV/s), (C) scan rate (pulse amplitude 50 mV, pulse time 0.04 s).

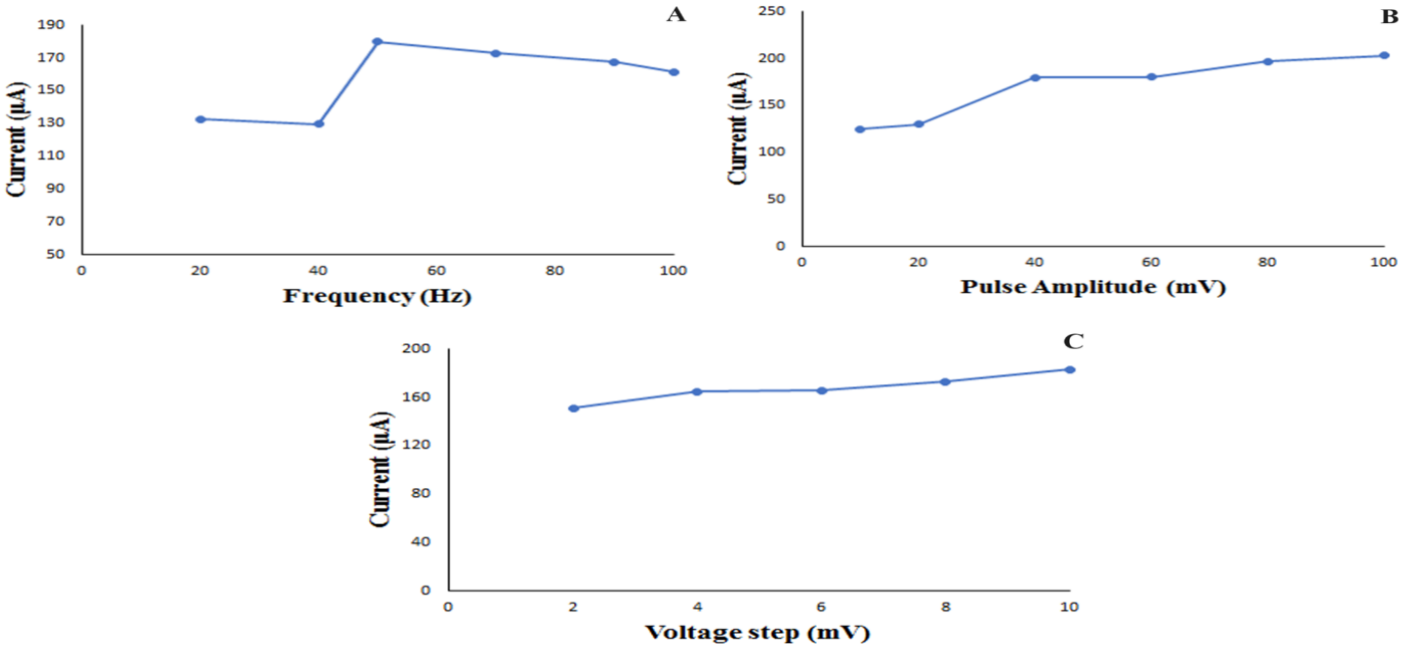

Fig. S6. The current produced by SWV of 300 µg/mL EZP prepared in 0.01 M BR buffer, pH 7, containing 0.1 M NaCl upon variation of (A) frequency (pulse amplitude 40 mV, voltage step 10 mV, (B) pulse amplitude (frequency 50 Hz, voltage step 10 mV), (C) voltage step (frequency 50 Hz, pulse amplitude 40 mV).

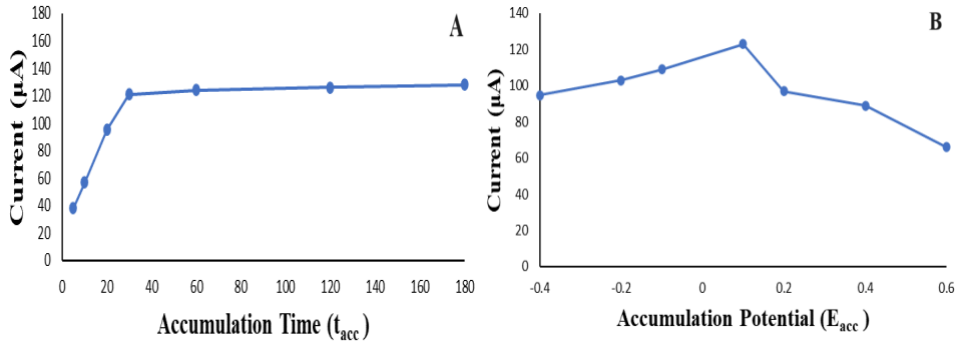

Fig. S7. Effect of (A) accumulation time at a fixed accumulation potential of +0.1 V, (B) accumulation potential at a fixed accumulation time of 30 s, on the DPV peak current of 5 µg/mL EZP in 0.01 M BR buffer, pH 7, containing 0.1 M NaCl.

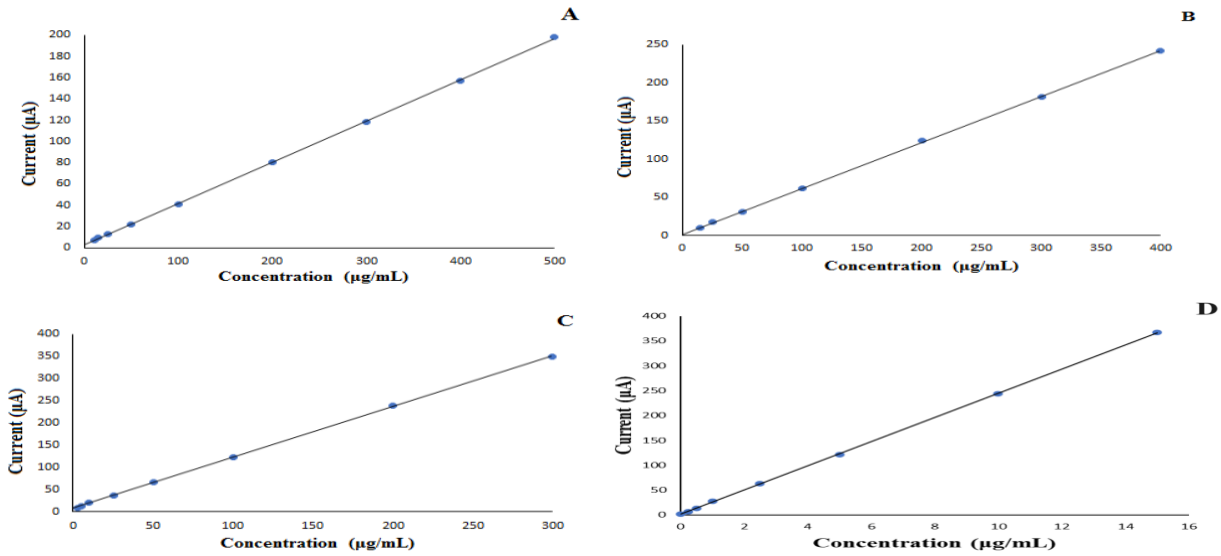

Fig. S8. Calibration plots obtained by PPGE of different EZP concentrations in 0.01 M BR buffer/0.1 M NaCl solution, pH 7, using (A) DPV, (B) SWV, (C) in 0.01 M BR buffer/0.004 M SDS solution, pH 7, using DPV, and (D) in 0.01 M BR buffer/0.1 M NaCl solution, pH 7, using DP-AdSV.

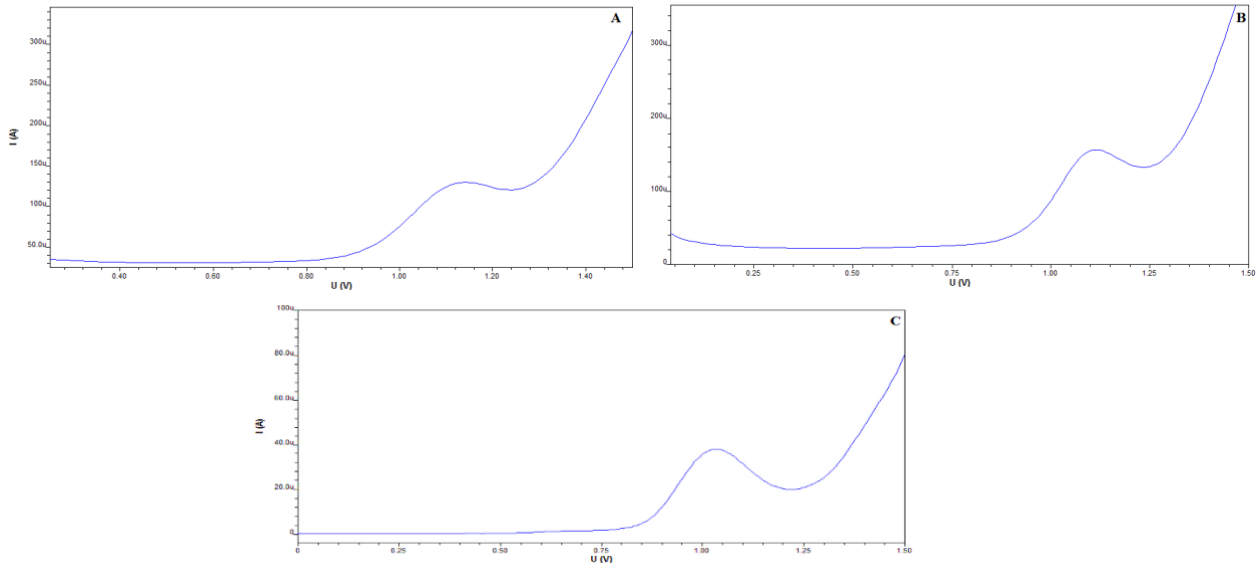

Fig. S9. DP-voltammograms obtained by potentiodynamically PPGE of (A) 300 µg/mL standard EZP, (B) a mixture of 300 µg/mL EZP and 210 µg/mL of degradants and (C) 210 µg/mL degradants in a 0.01 M BR /0.1 M NaCl solution, pH 7.

Table S1: DPV measurement of EZP in presence of variable % of its alkaline degradants.

% Content of Degradants	% EZP Recovery ± SD[a]
1% (300 µg/ml intact EZP + 3 µg/ml degradants)	98.90 ± 0.93
10% (300 µg/ml intact EZP + 30 µg/ml degradants)	99.68 ± 0.46
20% (300 µg/ml intact EZP + 60 µg/ml degradants)	98.09 ± 1.61
30% (300 µg/ml intact EZP + 90 µg/ml degradants)	99.92 ± 0.85
40% (300 µg/ml intact EZP + 120 µg/ml degradants)	99.63 ± 1.23
50% (300 µg/ml intact EZP + 150 µg/ml degradants)	98.23± 1.06
60% (300 µg/ml intact EZP + 180 µg/ml degradants)	105.94± 0.78
70% (300 µg/ml intact EZP + 210 µg/ml degradants)	127.48± 0.43

[a]Average of three determinations.

Table S2. Analytical Eco-scale assessment based on penalty points calculation.

Hazards / Method	Penalty Points				
	Proposed EZP PGE Method	**Reported EZP-Spectrophotometric Method [5]**	**Reported EZP-HPTLC Method [16]**	**Reported EZP-HPLC Method [12]**	**Reported ZP-DME Method [25]**
Solvents/Reagents					
O-Phosphoric Acid	2	-	-	2	2
Methanol	-	12	12	-	-
Sodium chloride	2	-	-	-	-
Perchloric acid	-	-	-	-	8
Boric acid	2	-	-	-	2
Acetic acid, Glacial	4	-	-	-	4
Water	0	-	0	0	-
Sodium lauryl sulphate	-	-	-	6	-
Sodium dihydrogen phosphate monohydrate	-	-	-	1	-
Acetonitrile	-	-	-	12	-
Instruments					
Instruments Energy	0 (< 0.1 kWh per sample)	0 (< 0.1 kWh per sample)	1 (< 1.5 kWh per sample)	1 (< 1.5 kWh per sample)	0 (< 0.1 kWh per sample)
Occupational Hazards (Emission of vapors)	0	0	0	0	0
Waste	3 (1-10 mL)	3 (1-10 mL)	5 (>10 mL)	5 (>10 mL)	5 (>10 mL)
Total Penalty Points	Σ 13	Σ 15	Σ 18	Σ 27	Σ 21
Total Analytical Eco-Scale score	87	85	82	73	79

Table S3. Parameters of the Green Analytical Procedure Index for the proposed method and published methods for determining EZP and ZP.

Parameters	Proposed EZP-PGE	Reported EZP-Spectrophotometric [5]	Reported EZP-HPTLC [16]	Reported EZP-HPLC [12]	Reported ZP-DME [25]
Preparation of the sample					
Collection (1)	At-line				
Preservation (2)	None				
Transport (3)	None				
Storage (4)	Normal storage conditions				
Type of method: Direct or Indirect (5)	Simple procedures	Extraction required	Extraction required	Extraction required	Simple procedures
Scale of extraction (6)	-	Micro sample extraction			
Solvents/reagents used (7)	Green			Non-green	
Additional treatments (8)	None				
Solvents and reagent					
Amount (9)	10-100 mL	10-100 mL	10-100 mL	>100 mL	10-100 mL
Health hazard (Highest NFPA Health value) (10)	3	1	1	3	3
Safety hazard (Highest NFPA flammability or instability score) (11)	2	3	3	3	3
Instrumentation					
Energy (12)	≤ 0.1 kWh/sample	≤ 0.1 kWh/sample	≤ 1.5 kWh/sample	≤ 1.5 kWh/sample	≤ 0.1 kWh/sample
Occupational hazard (13)	Hermetic sealing of analytical process				
Waste (14)	1-10 mL		>10 mL		
Waste treatment (15)	No treatment				
Quantification	Yes				

Table S4. RGB 12 profiles of the proposed PGE method and other reported methods

Method number	Method name	R (%)	G (%)	B (%)	Whiteness (%)
1	Proposed EZP-PGE	98.8	93.8	95.2	95.9
2	EZP-Spectrophotometric [5]	92.5	91.3	95.2	93.0
3	EZP-HPTLC [16]	93.8	88.8	83.3	88.6
4	EZP-HPLC-DAD [12]	100.0	82.5	87.1	89.9
5	ZP-DME [25]	95.0	85.0	94.4	91.5

Whiteness % indicates the arithmetic mean of the three others % (red, green, and blue)