

Supplementary Materials

Electrochemical Determination of Metronidazole using Nanostructured Over-Oxidized Polypyrrole

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Table S1. The chemicals used, the companies from which these chemicals are supplied, and their purity percentages

Chemicals	The company from which chemicals are supplied	Purity
Metronidazole	Acros	99 %
Pyrrrole	Sigma-Aldrich	98 %
Na ₂ CO ₃	Sigma-Aldrich	99.5-100 %
LiClO ₄	Alfa Aesar	98 %
HClO ₄	Riedel-de Haen	10 %
H ₃ BO ₃	Sigma-Aldrich	98.5 ≥%
H ₃ PO ₄	Riedel-de Haen	%85
CH ₃ COOH	Riedel-de Haen	99.8-100.5 %
NaH ₂ PO ₄	Merck	99-102 %
Na ₂ HPO ₄	Merck	99+ %
H ₂ SO ₄	Sigma-Aldrich	95-97 %
NaOH	Sigma-Aldrich	98-100.5 %
KCl	Sigma-Aldrich	99.5+ %
NaCl	Sigma-Aldrich	≥ 98 %
K ₃ Fe (CN) ₆	Sigma-Aldrich	99+ %
K ₄ Fe (CN) ₆	Sigma-Aldrich	98 %
Glucose	Acros	99 %
Paracetamol	Fluka	98 ≥%
Ascorbic Acid	Roth	99 %

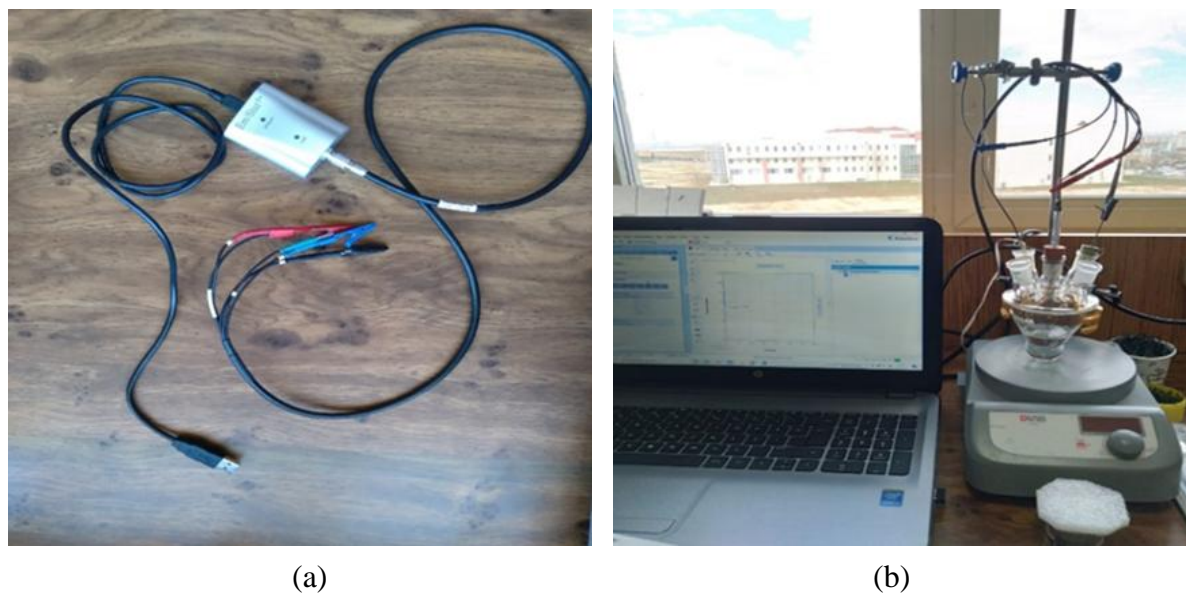


Figure S1. Potentiostat (a) and electrochemical experiment set-up (b)

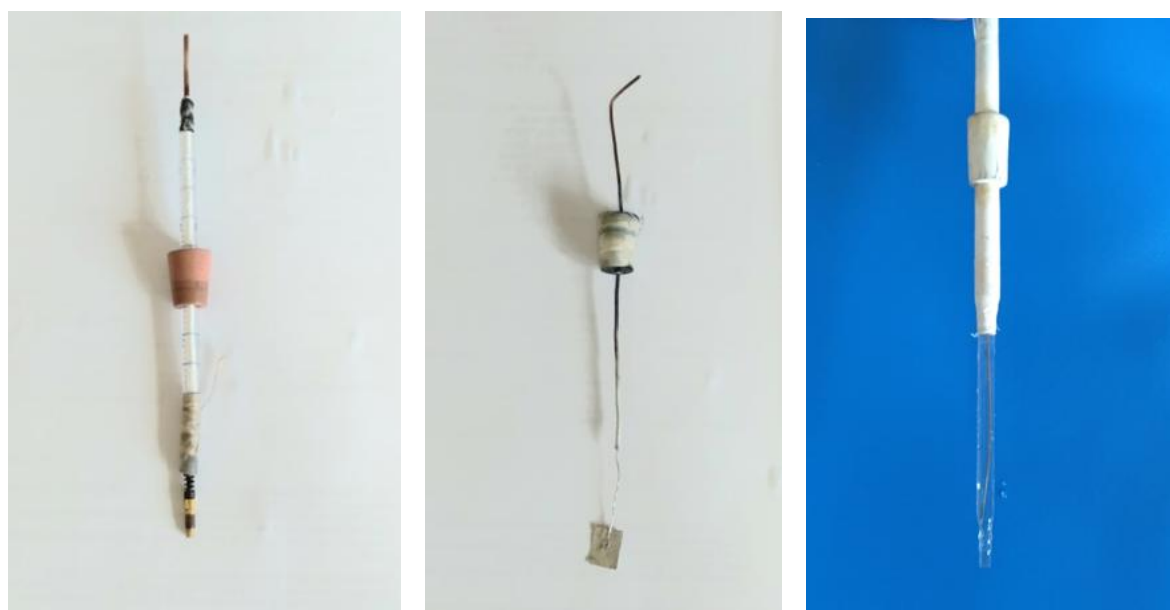


Figure S2. (a) Apparatus holding the pencil graphite electrode, (b) Pt counter electrode, and (c) Ag/AgCl (3 M NaCl) reference electrode

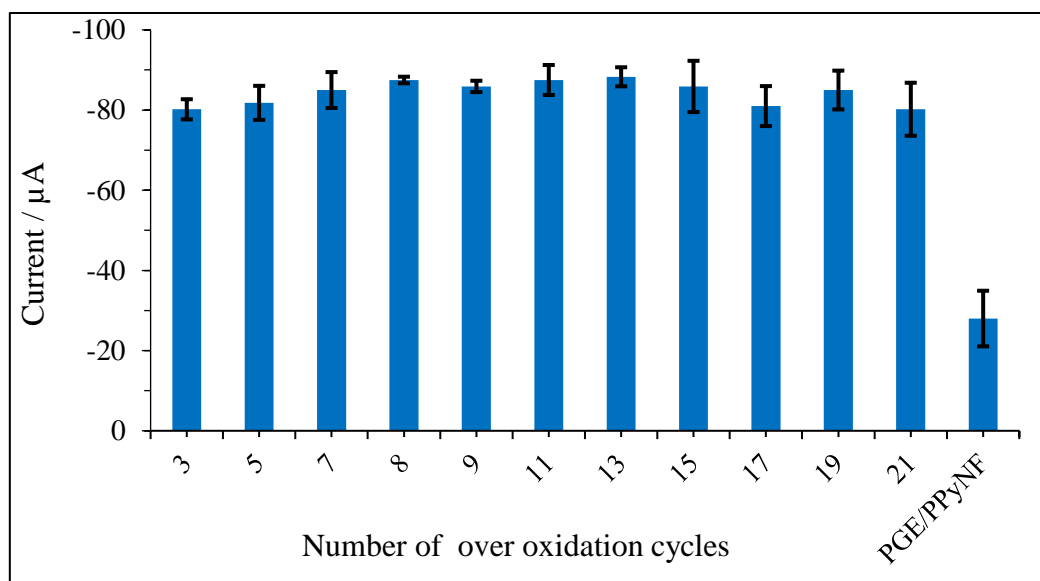


Figure S3. Effect of the number of over-oxidation cycles of PGE/5cycPPyNF-Ox on the MNZ reduction peak current value in PBS at pH 8.0 containing 500 μM MNZ (Deposition potential: -0.50 V, deposition time: 60 s)

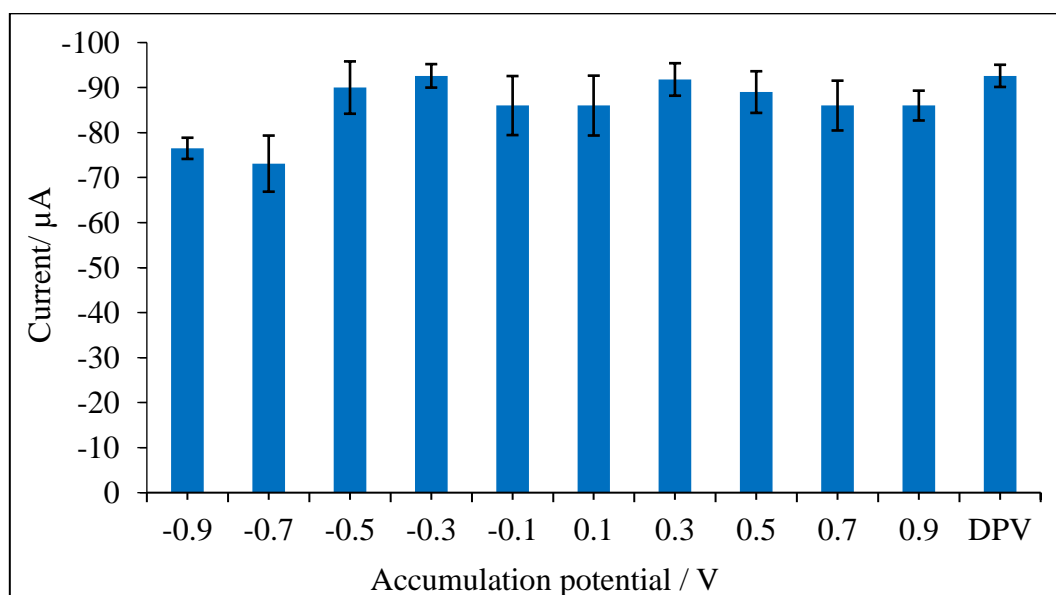


Figure S4. Variation of MNZ reduction current with deposition potential applied to PGE/5cycPPyNF-8cycOx in PBS at pH 8.0 containing 500 μM MNZ (Deposition potential: -0.50 V, deposition time: 60 s, stirring speed: 250 rpm)

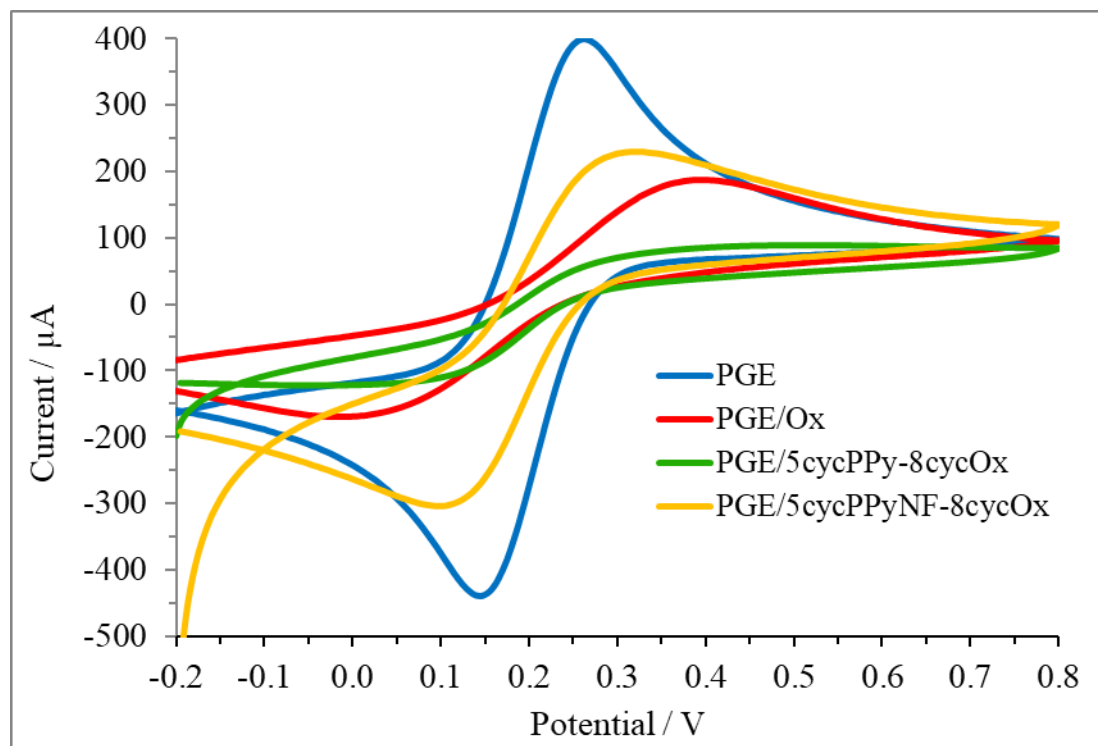


Figure S5. Cyclic voltammograms of PGE, PGE/Ox, PGE/5cycPPy-8cycOx, and PGE/5cycPPyNF-8cycOx in solution containing 0.10 M KCl + 15 mM pH 7.4 PBS + 5.0 mM $K_3Fe(CN)_6$ and $K_4Fe(CN)_6$ voltammograms (Reference electrode: Ag/AgCl (3.0 M NaCl))

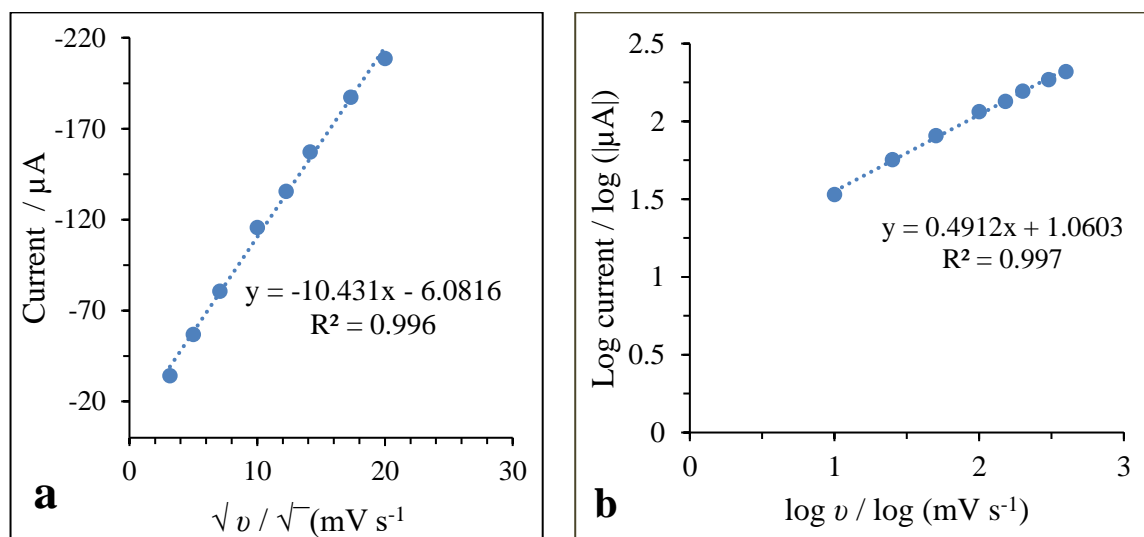


Figure S6. (a) square root of scan rate versus peak current plot and (b) logarithm of scan rate versus logarithm peak current plot obtained for PBS at pH 8.0 containing 500 μ M MNZ using PGE/5cycPPyNF-8cycOx

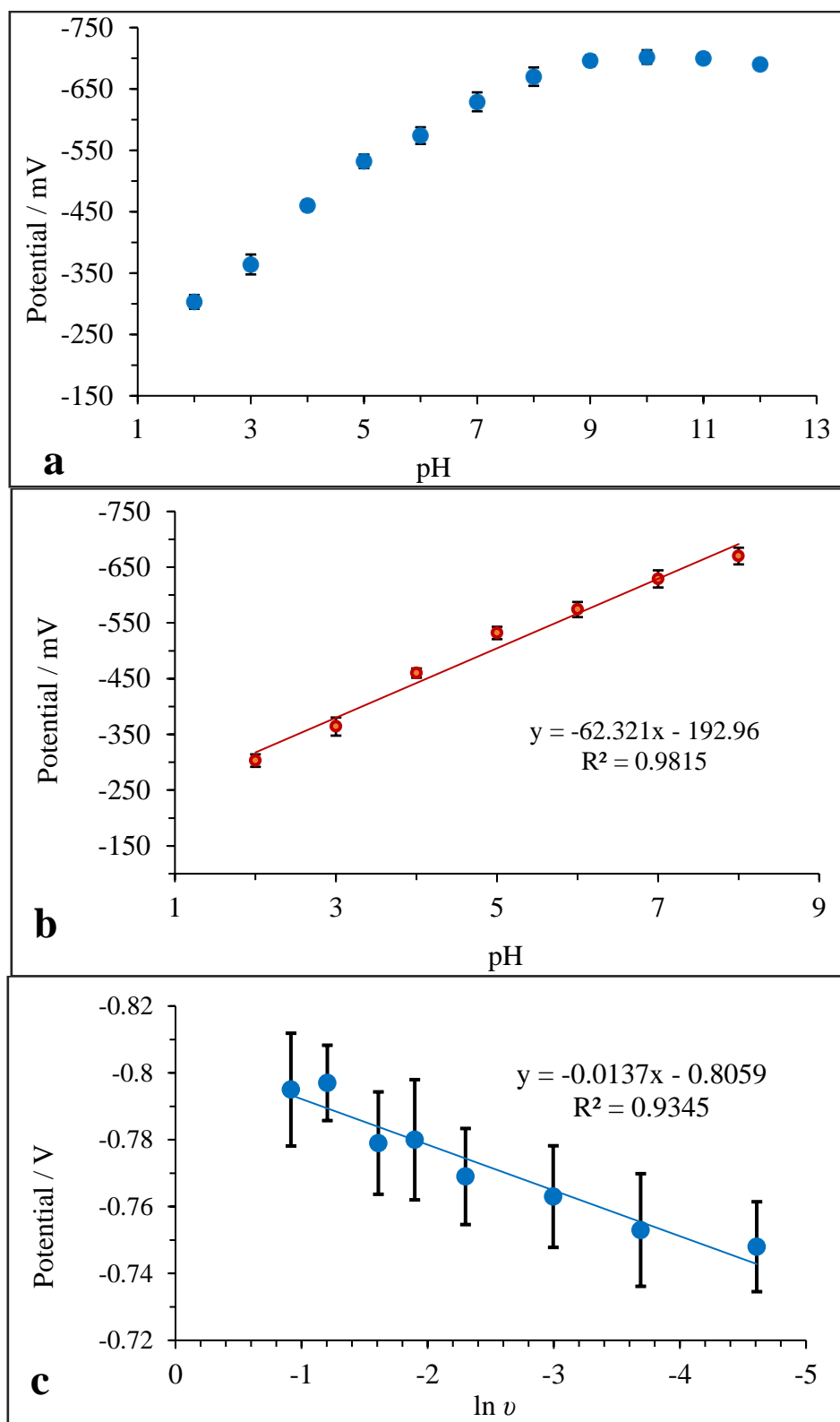


Figure S7. (a) peak voltages and (b) linear change range obtained in PBS at different pH values with PGE/5cycPPyNF-15cycOx and (c) \ln scan rate-voltage graph obtained with PGE/5cycPPyNF-8cycOx

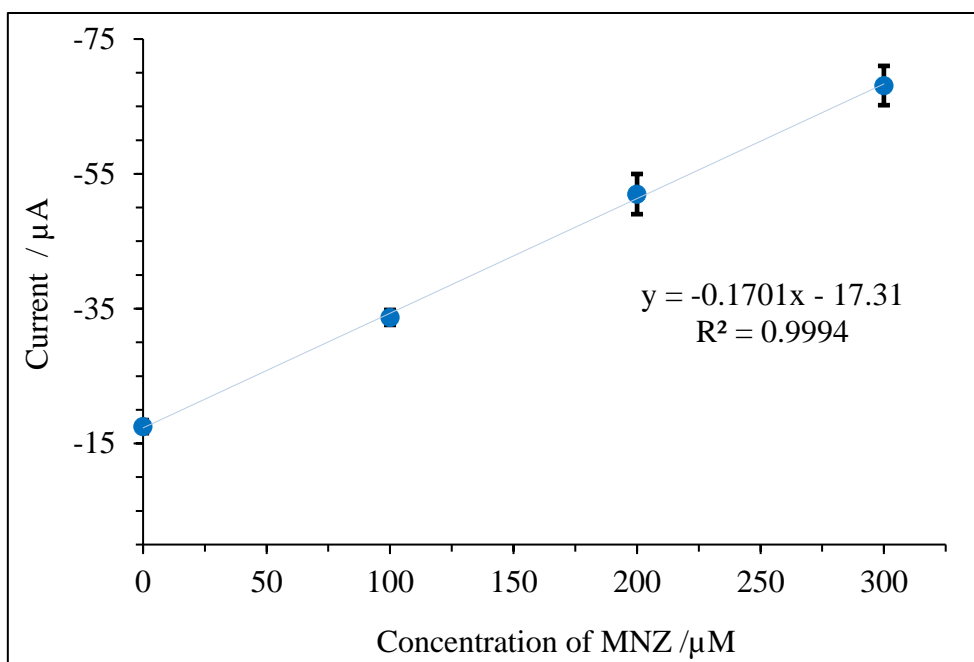


Figure S8. Reduction currents obtained in the determination of MNZ in the drug tablet using PGE/5cycPPyNF-8cycOx (in 0.1 M PBS at pH 8.0 + 100 μM MNZ obtained from the drug tablet)