

(a) (b) (c)

Figure S1. (a) TEM image of AuNPs-pATP, and size distribution of (b) minor diameter and (c) largest diameter of elliptical aggregates

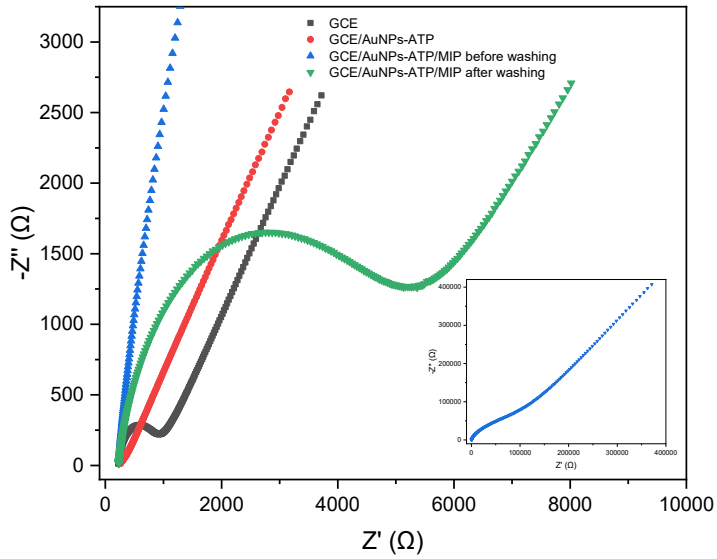
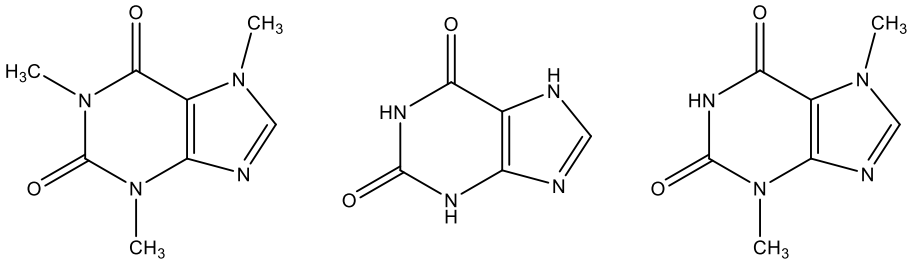


Figure S2. EIS of steps of MIP preparation in PBS 7.0 electrolyte containing 5.0 mmol L^{-1} of $[Fe(CN)_6]^{3-/4-}$ as a redox probe and 50 mmol L^{-1} of KCl



(a) (b) (c)

Figure S3. Structures of (a) caffeine, (b) xanthine and (c) theobromine

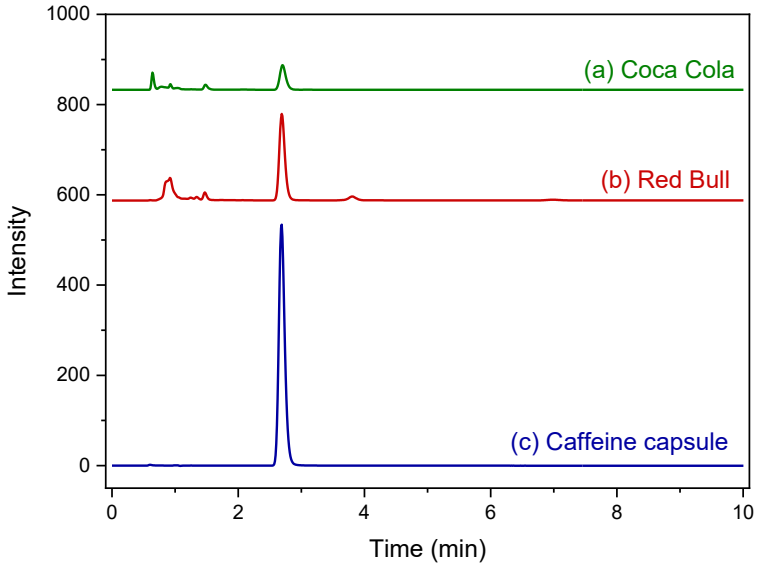


Figure S4. Chromatographic profile of caffeine in (a) Coca Cola, (b) Red Bull and (c) Caffeine capsule

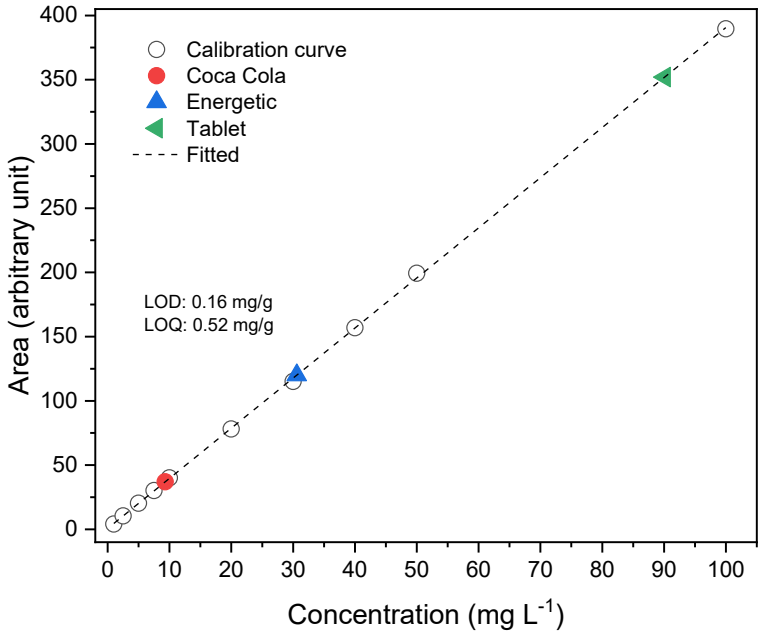


Figure S5. Calibration curve by HPLC in concentrations from 1 to 100 mg L^{-1} at 275 nm using diode array detector (DAD)

Table S1. Comparison of different electrochemical sensor MIP based for determination of caffeine

Electrode (detection technique)	Synthesis method	Template removal	Performance parameters (LR, LOD, LOQ and IF)	Stability and reuse cycles	Ref.
MIP-CP (DPV)	Bulk polymerization	Soxhlet extraction with methanol (48 h)	LR: 6×10^{-8} to 2.5×10^{-5} mol L^{-1} LOD: 1.5×10^{-8} mol L^{-1}	5 weeks and five repeated	[20]
GCE/PPy NPs (DPV)	Electro-polymerization	Ethanol/acetic acid (9:1 v/v) solution	LR: 30 to 150 μmol L^{-1} LOD: 2.5 μmol L^{-1}	10 reuse cycles	[19]
Nanocomposite MIP/PGE (SWV)	Electro-polymerization	Acetic acid (50% V/V)	LR: 0.002 to 0.05 μmol L^{-1} and 0.05 to 1 μmol L^{-1} LOD: 0.9 nmol L^{-1} IF: 12.7	14 days and 12 reuse cycles	[2]
GCE/AuNPs-pATP/MIP (SWV)	Electro-polymerization	NaOH 0.25 mol L^{-1} in ethanol:water (1:1)	LR: 1.0 to 6.0 μmol L^{-1} LOD: 0.195 μmol L^{-1} LOQ: 0.592 μmol L^{-1} IF: 12.43	5 days of stability and 5 reuse cycles	This work