Electronic Supplementary Material (ESI) for Analytical Methods.

Supporting information

A new alternative assay for sensitive analysis of ethylenethiourea and propylenethiourea in fruit samples after their separation

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1. Hydrodynamic Voltammetry

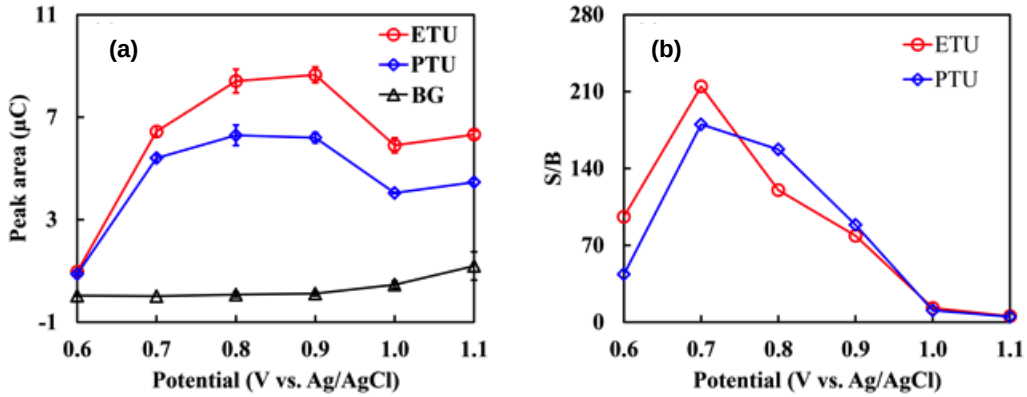

Fig. S1 (a) Hydrodynamic voltammograms in the presence and absence of a standard mixture containing 10 μg mL^{-1} of each target analyte (ETU and PTU) in phosphate buffer solution (0.05 M, pH 4): MeOH (90:10) at CoPc-SPCE. (b) Hydrodynamic voltammogram of signal-to-background ratios extracted from the data shown in part a.

2. Application to real samples

Table S1 Determination of ETU and PTU levels in different samples (n=3) by traditional UHPLC-UV method and a new alternative UHPLC-ECD using CoPc-SPCE

Sample	Spiked level ($\mu g\ mL^{-1}$)	Analyte	Amount founded ($\mu g\ mL^{-1}$) (x±SD)		Recovery (%)	
			UHPLC-ECD	UHPLC-UV	UHPLC-ECD	UHPLC-UV
Apple	1.0	ETU	1.06 ± 0.04	1.00 ± 0.02	105.9	100.4
	2.5		2.50 ± 0.05	2.40 ± 0.05	100.1	96.1
	5.0		4.67 ± 0.08	4.75 ± 0.01	93.3	95.0
	1.0	PTU	1.08 ± 0.01	0.97 ± 0.01	107.9	97.44
	2.5		2.54 ± 0.02	2.59 ± 0.01	101.6	103.6
	5.0		4.71 ± 0.04	4.89 ± 0.01	94.3	97.8
Grape	1.0	ETU	1.04 ± 0.03	1.03 ± 0.02	104.1	103.5
	2.5		2.36 ± 0.18	2.45 ± 0.08	94.4	98.1
	5.0		4.84 ± 0.19	4.69 ± 0.03	96.8	93.7
	1.0	PTU	1.02 ± 0.01	0.99 ± 0.01	102.0	99.9
	2.5		2.35 ± 0.04	2.60 ± 0.01	93.9	104.0
	5.0		4.76 ± 0.07	4.90 ± 0.02	95.1	97.9
Nut	1.0	ETU	0.85 ± 0.02	1.04 ± 0.03	85.6	104.3
	2.5		2.65 ± 0.07	2.36 ± 0.01	106.1	95.1
	5.0		4.82 ± 0.08	4.92 ± 0.02	96.5	98.4
	1.0	PTU	0.97 ± 0.03	0.91 ± 0.01	96.6	91.5
	2.5		2.35 ± 0.08	2.60 ± 0.01	102.1	104.0
	5.0		4.98 ± 0.07	5.02 ± 0.11	99.7	100.4
t-test	Mean		2.753	2.784		
	Variance		2.595	2.696		
	df		17			
	t Stat		-0.906			
	P(T<=t) two-tail		0.378			
	t Critical two-tail		2.110			