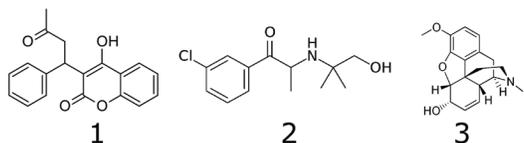
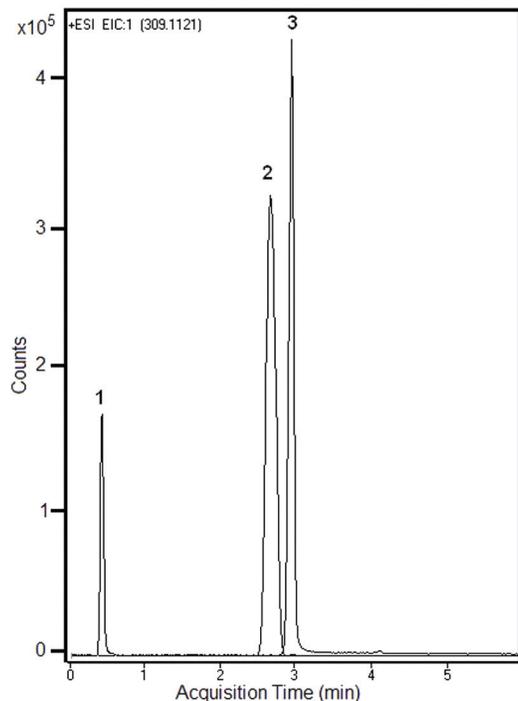


Warfarin, Hydroxybupropion, and Codeine by LC-MS

Analysis in spiked blood samples



Note: Warfarin is used in the prevention of thrombosis. Hydroxybupropion is the active metabolite of bupropion, a smoking cessation aid. Codeine is an opiate compound that is a common ingredient in many cough syrup formulations.

Method Conditions

Column: Cogent Diol 2.0™, 2.2µm, 120Å

Catalog No.: 40260-05P-2

Dimensions: 2.1 x 50 mm

Solvents: A: DI H₂O / 0.1% formic acid
B: Acetone / 0.1% formic acid

Gradient:	time (min.)	%B
	0	90
	3	30
	5	30
	6	90

Injection vol.: 1 µL

Flow rate: 0.4 mL/min

Detection: ESI - POS - Agilent 6210 MSD TOF mass spectrometer

Samples: Stock solutions of each analyte were prepared at 1mg/mL concentrations using a methanol diluent. Working solutions were then prepared from the stock solutions at concentrations of 1 µg/mL. All solutions were stored at -20°C. Solutions used for spiking were prepared at 0.500 µg/mL concentrations. For blood samples, 0.2mL blood in a 2mL plastic tube was mixed with 0.2mL methanol and 0.2mL spiking solution. The samples were vortexed for 1 min and centrifuged for 10 min at 13,000 rpm. The final solutions were prepared by diluting 0.2mL supernatant with 0.5mL water / 0.1% formic acid.

Peaks: 1. Warfarin, m/z 309.1121 [M + H]⁺
2. Hydroxybupropion, m/z 256.1099 [M + H]⁺
3. Codeine, m/z 300.1594 [M + H]⁺

Discussion

In this application, three pharmaceuticals/metabolites are separated using the Cogent Diol 2.0 column. The blood sample illustrates the suitability of the column for analysis of more complex matrices. Use of acetone in the mobile phase was found to be appropriate for this LC-MS method. As a less expensive and less toxic alternative to acetonitrile, acetone presents several advantages to the chromatographer. Use of a near-UHPLC particle size allowed for a fast run time and high efficiency peaks.