



Analysis of Anti-flatuents using HPLC-ELSD

Introduction

Medicines contain various active ingredients and for analyzing such ingredients simultaneously, a gradient elution method requiring high sensitive detection is required. When analyzing medicines in gradient mode an evaporative light scattering detector (ELSD) is useful because it can detect almost any compound with the exception volatile components with high sensitivity and provides a stable baseline.

In this report, some ingredients contained in an anti-flatulent were analyzed using ELSD and PDA detection. Stearic acid is used as a lubricant for forming tablets, ursodeoxycholic acid is effective for improving digestion and absorption, acrinol is used as a disinfectant and berberine has antibacterial, anti-inflammatory and gastric mucosal protection effects.

Keyword : Antiflatuent, C18 column, PDA detector, ELSD, berberine, acrinol, ursodeoxycholic acid, Stearic acid



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Experimental Equipment:

Pump:	PU-2089
Autosampler:	AS-2057
Column oven:	CO-2060
Detector:	ELS-2040

Conditions:

Column:	CrestPak C18S (4.6 mmID x 150 mmL, 5 μ m)
Eluent A:	10 mM Ammonium acetate in Acetonitrile
Eluent B:	10 mM Ammonium acetate
Gradient condition:	(A/B), 0 min (5/95) ,15 min (70/30) ,15.05 min (95/5) 20 min (95/5),20.05 min (5/95) 1 cycle: 35 min
Flow rate:	1.0 mL/min
Column temp.:	40°C
ELSD condition:	Nebulizer temp.: 30°C Evaporator temp.; 60°C Gas flow rate; 1.0 SLM
PDA wavelength:	200-650 nm
Injection volume:	10 μ L
Standard sample:	Stearic acid, Acrinol, Ursodeoxycholic acid, Berberine

Figure 1 shows structural formula of the ingredients contained in the anti-flatuent.

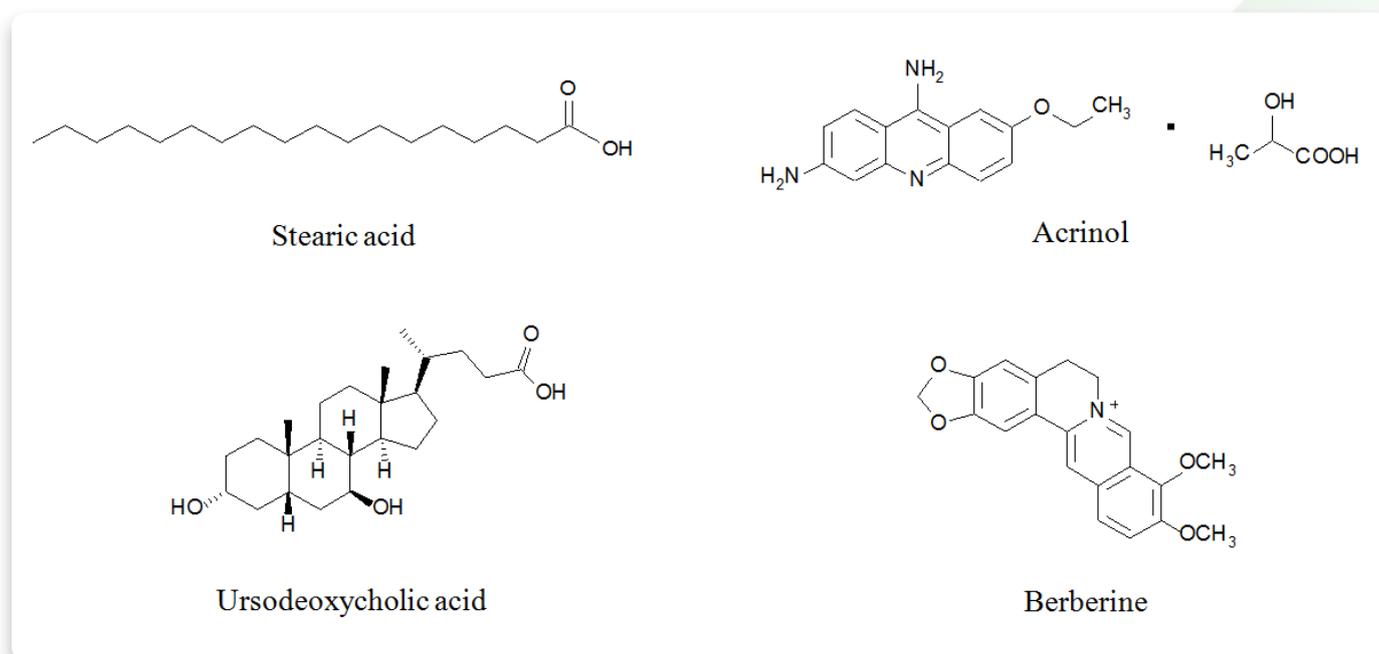


Figure 1. Structural formula of the ingredients contained in anti-flatuent.

Results

Figure 2 shows chromatogram of the standard mixture while figure 3 shows chromatogram of anti-flatuent. The top chromatogram is from the ELSD and the bottom chromatogram is from the PDA (at 220 nm). Only two ingredients were detected by the PDA, while all four ingredients were clearly detected by the ELSD.

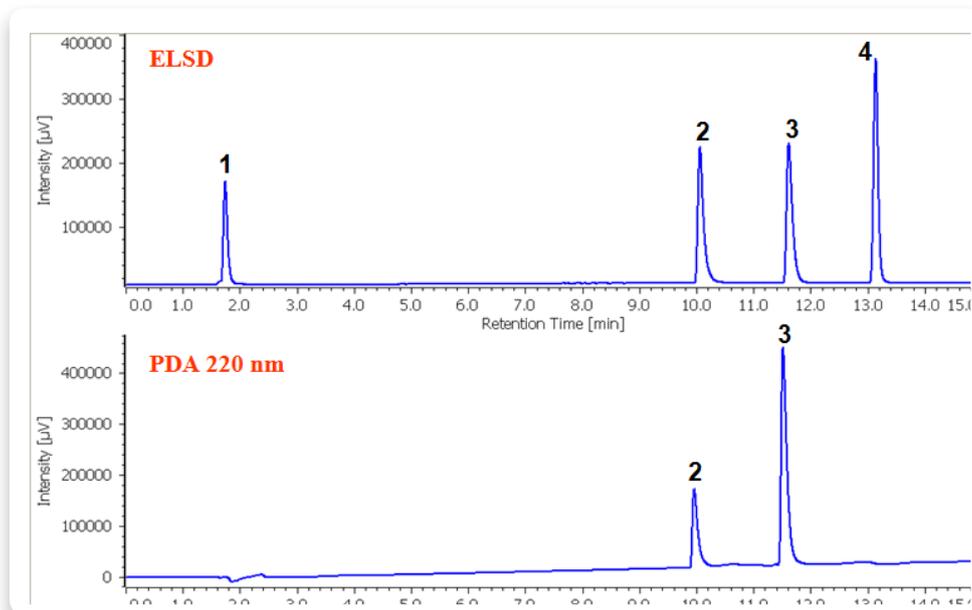


Figure 2. Chromatogram of the standard mixture.

1: Stearic acid [0.5 mg/mL], 2: Acrinol [0.1 mg/mL], 3: Berberine [0.1 mg/mL], 4: Ursodeoxycholic acid [0.1 mg/mL]

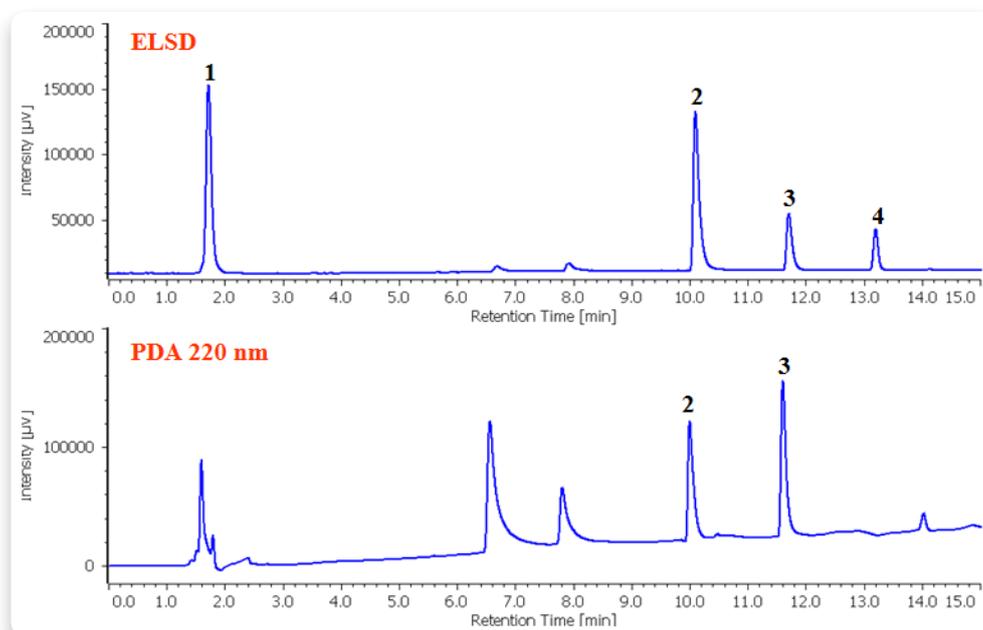


Figure 3. Chromatogram of the anti-flatuent. 1: Stearic acid, 2: Acrinol, 3: Berberine, 4: Ursodeoxycholic acid
Preparation: A 1.0 mg/mL solution was prepared by dissolving the powder from the crushed anti-flatuent into methanol and sent through the 0.45 µm membrane filter.