Application Note

747010H

Analysis of Antiflatuents by High Performance Liquid Chromatography with Evaporative Light Scattering Detection

Introduction

Medicines contain various active ingredients and for analyzing such ingredients simultaneously, gradient elution method is useful, requiring high sensitive detection method. Therefore, for analyzing medicines in gradient mode it is quite useful to use Evaporative Light Scattering Detector (ELSD) , because it can detect almost all the compounds except volatile components with high sensitively and stable baseline.

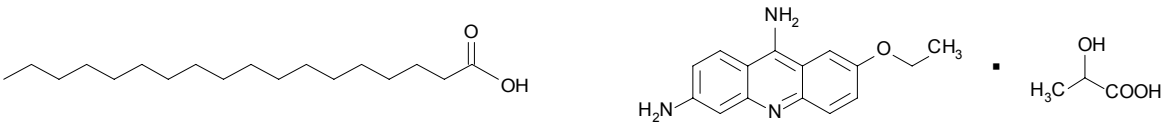
In this report, some ingredients contained in Antiflatulent were analyzed by using ELSD and PDA detector, such as Stearic Acid that is used as lubricants for forming tablets, Ursodeoxycholic Acid that is effective to improve digestion and absorption, Acrinol that is used as disinfectant and Berberine that has antibacterial, anti-inflammatory and gastric mucosal protection effects.

Keyword : Antiflatuent, C18 column, PDA detector, ELSD

Experimental

Equipment		Conditions	
Pump:	PU-2089	Column:	CrestPak C18S (4.6 mmID x 150 mmL, 5 µm)
Autosampler:	AS-2057	Eluent A:	10 mM Ammonium acetate in Acetonitrile
Column oven:	CO-2060	Eluent B:	10 mM Ammonium acetate
Detector:	ELS-2040	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.:	40ºC
		ELSD condition:	Nebulizer temp.: 30ºC Evaporator temp.; 60ºC Gas flow rate; 1.0 SLM
		PDA wavelength:	200-650 nm
		Injection volume:	10 µL
		Standard sample:	Stearic acid, Acrinol, Ursodeoxycholic acid, Berberine

Fig.1 shows structural formula of ingredients contained in antiflatuent.



Stearic acid

Acrinol

Ursodeoxycholic acid

Berberine

Fig. 1. Structural formula ingredients contained in antiflatuent

JASCO INTERNATIONAL CO., LTD

4-21, Sennin-cho 2-chome, Hachioji, Tokyo 193-0835, Japan
Tel: +81-42-666-1322, Fax: +81-42-665-6512

Result

Fig.2 shows chromatogram of standard mixture and Fig. 3 shows chromatogram of antiflatuent. Upper data of each figures is chromatogram detected by ELSD and lower data, detected by PDA detector (Wavelength: 220 nm) respectively. By PDA detector, only two ingredients were detected, while all four ingredients were detect clearly by using ELSD .

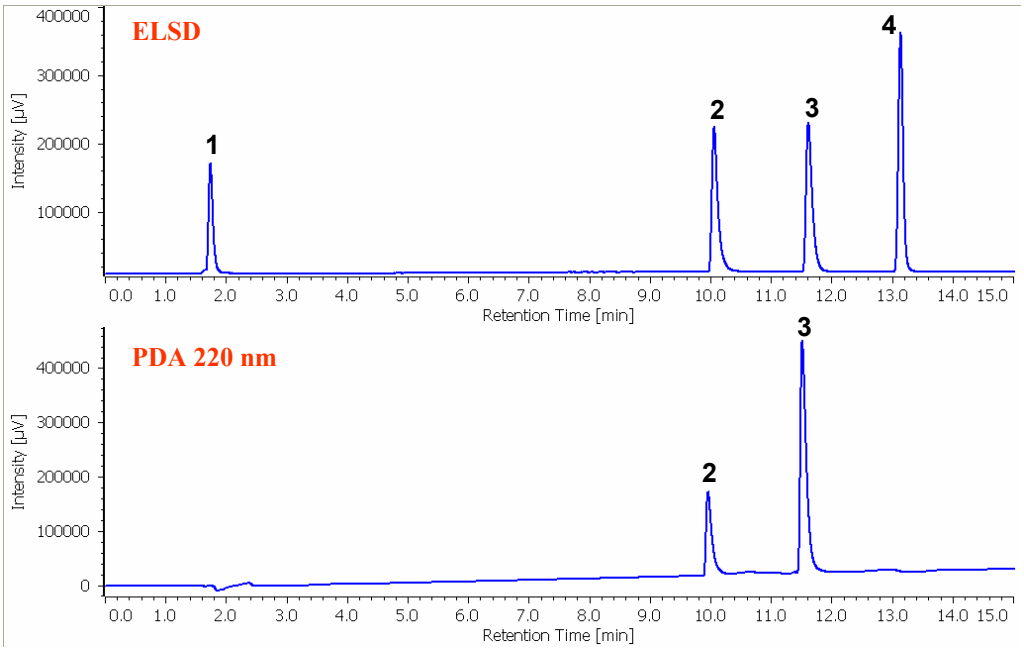


Fig. 2. Chromatogram of Standard mixture
1: Stearic acid (0.5 mg/mL), 2: Acrinol (0.1 mg/mL), 3: Berberine (0.1 mg/mL), 4: Ursodeoxycholic acid (0.1 mg/mL)

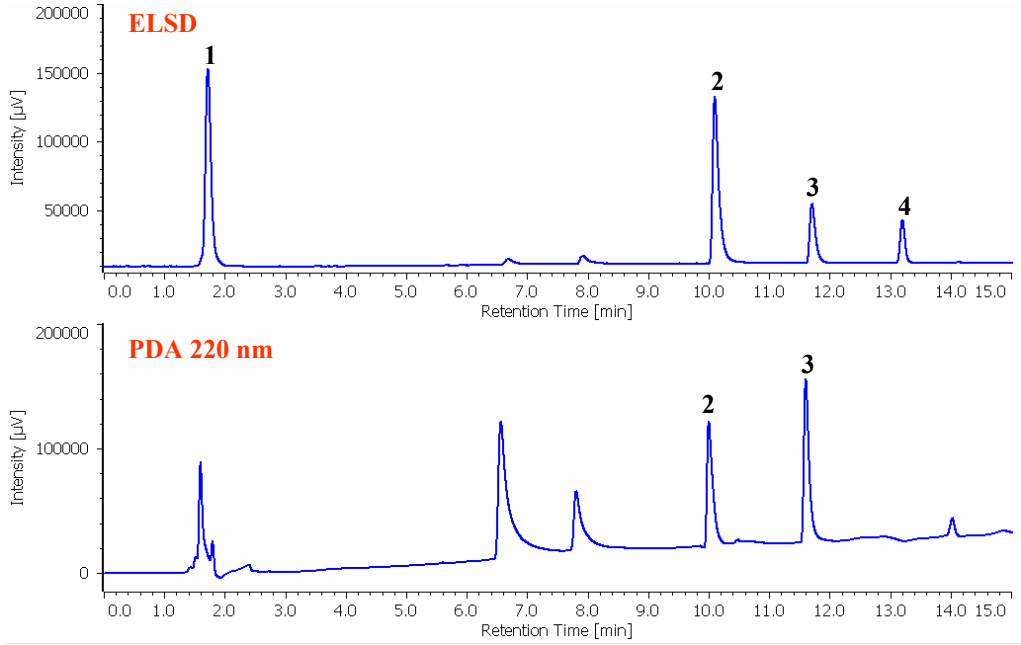


Fig. 3. Chromatogram of Antiflatuent
1: Stearic acid, 2: Acrinol, 3: Berberine, 4: Ursodeoxycholic acid
Preparation: A 1.0 mg/mL solution of Antiflatuent smashed into powder was prepared by methanol and filtrated through the 0.45 μm membrane filter.

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