

Phenolics in Echinacea

Waters Corporation



This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application brief highlights the analysis of phenolics in echinacea using Symmetry columns.

Introduction

Phenolic compounds are analysed in complex herbal tea extracts using Symmetry columns.

Experimental

Sample Preparation

100 mg sample is extracted with 25 mL of ethanol:water (70:30)

1 mL of the ethanolic extract is diluted 1:3 with water (~ pH 7)

- Recovery, measured with certified standards at 100 ppm in reagent water, was greater than 85 % for all compounds
- All analyses gave results within ± 35 % of the expected values with the exception of the liquid supplement (see goldenseal analysis)
- The selective SPE extraction and cleanup procedure provided a convenient analysis of echinacea phenolics in complex matrix such as in herbal tea



**Herbal tea extract
before SPE cleanup**



**Herbal tea extract after SPE cleanup
using Oasis® MAX**

HPLC Method

Column:

Symmetry C₁₈, 4.6 x 250 mm, 5 µm (p/n:
WAT054275)

Mobile phase A:

0.1% phosphoric acid

Mobile phase B:

Acetonitrile

Flow rate: 1.5 mL/min

Injection volume: 10 µL

Temperature: 35° C

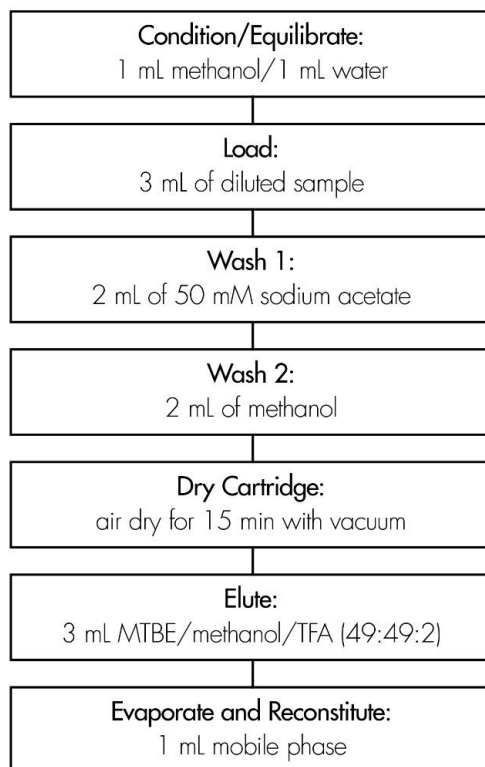
Detection: UV @ 330 nm

Gradient

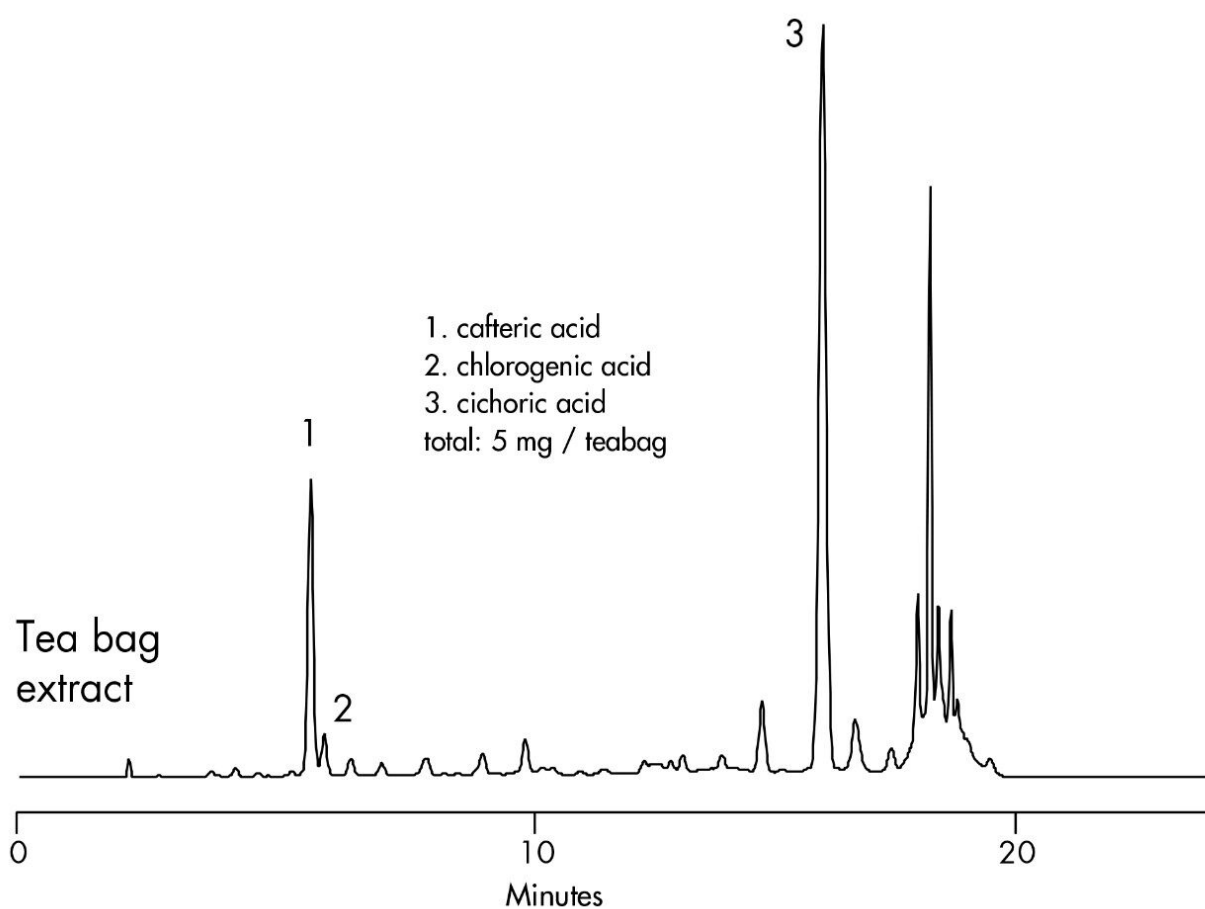
Time (min)	Profile	
	%A	%B
0	90	10
13	78	22
40	60	40

Oasis® MAX method for phenolics in echinacea

Conditions for Oasis® MAX Cartridge, 3 cc, 60 mg
Part Number 186000367



Results and Discussion



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