



Alkaloids in Goldenseal

Waters Corporation



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

Abstract

This application brief highlights the analysis of alkaloids in goldenseal using Symmetry C₁₈ Columns.

Introduction

Alkaloids in goldenseal is analyzed in this application brief.

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

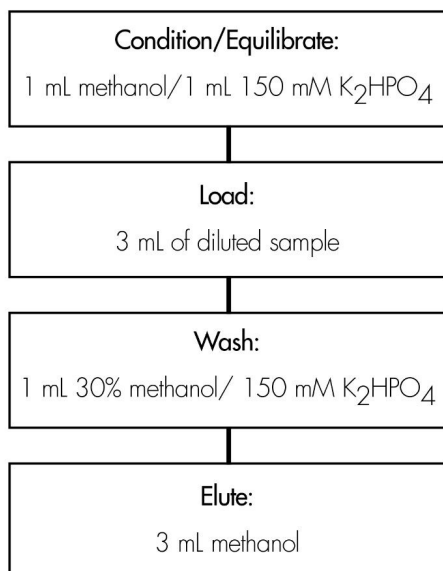
Gradient

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

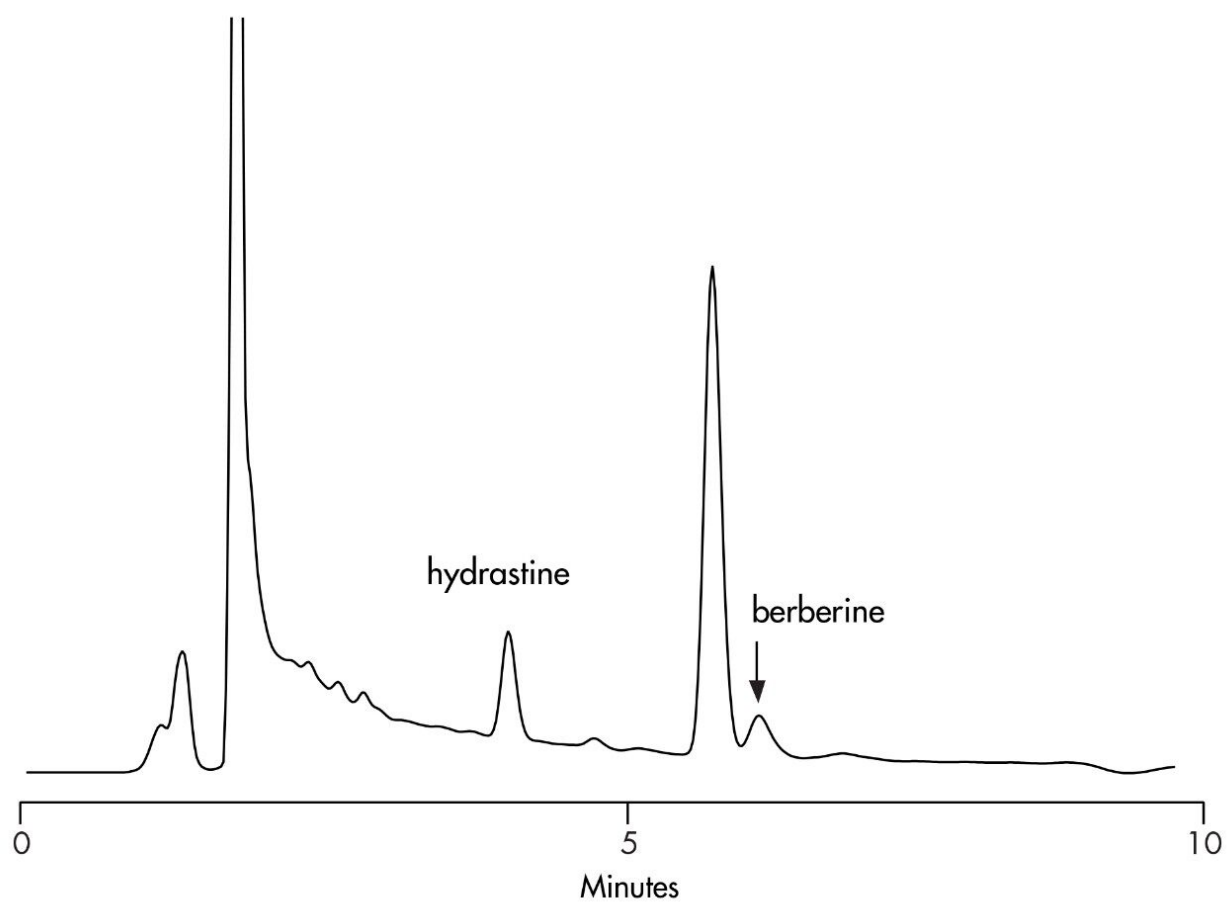
Oasis® HLB method for alkaloids in Goldenseal

Conditions for Oasis® HLB cartridge, 3 cc, 60 mg

Part Number WAT094226



Results and Discussion



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