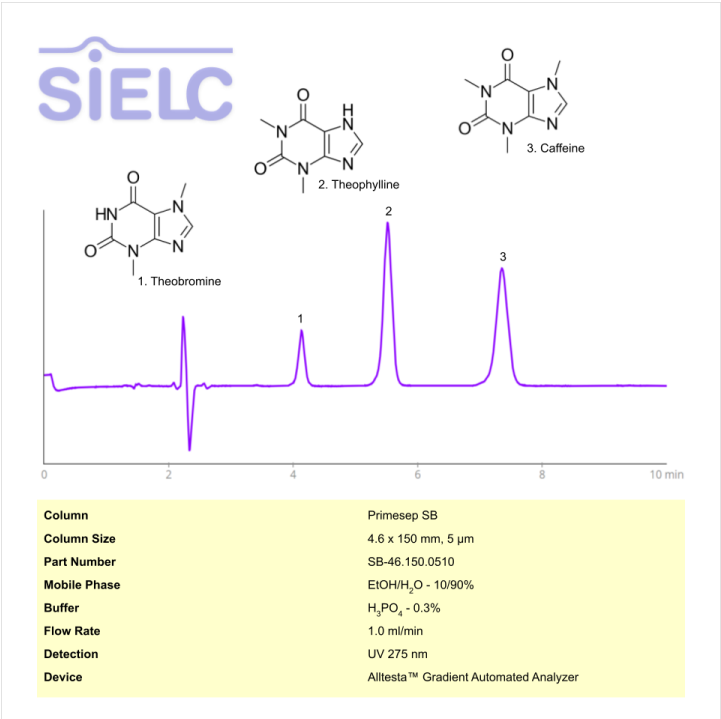
HPLC Method for Analysis of Caffeine, Theophylline and Theobromine on Primesep SB Column on Alltesta™



Column	Primesep SB
Column Size	4.6 x 150 mm, 5 µm
Part Number	SB-46.150.0510
Mobile Phase	EtOH/H_2O - 10/90%
Buffer	H_3PO_4 - 0.3%
Flow Rate	1.0 ml/min
Detection	UV 275 nm
Device	Alltesta™ Gradient Automated Analyzer

High Performance Liquid Chromatography (HPLC) Method for Analysis of Caffeine , Theophylline , Theobromine

Caffeine is a natural stimulant and methylxanthine alkaloid. with the molecular formula C6H10N4O2 . Caffeine can be found in a variety of plants, including tea, coffea, cocoa, kola nuts, and guarana. Ingestion of it can increase alertness and cognitive function. It can also cause worsening anxiety, heart palpitations, and headaches.

Theophylline is a methylxanthine compound with the molecular formula C7H8N4O2 . It is a caffeine metabolite and is often used in forensic analyses. Besides analytical use, it is often used in treating respiratory conditions.

Theobromine is a methylxanthine alkaloid with the molecular formula C7H8N4O2 . It is a derivative of caffeine. It can be found in many foods, including chocolate and tea. Despite that, it is toxic to dogs.

You can find detailed UV spectra of Caffeine and information about its various lambda maxima by visiting the following link.

You can find detailed UV spectra of Theophylline and information about its various lambda maxima by visiting the following link.

You can find detailed UV spectra of Theobromine and information about its various lambda maxima by visiting the following link

Caffeine , Theophylline , Theobromine can be retained and analyzed using the Primesep SB stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and ethanol (EtOH) with a phosphoric acid buffer. Detection is performed using UV.

Method Parameters

Column	Primesep SB, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	EtOH- 10%
Buffer	Phosphoric Acid
Flow Rate	1.0 mL/min
Detection	UV 275 nm

Quelle: https://sielc.com/hplc-method-for-analysis-of-caffeine-theophylline-theobromine-2