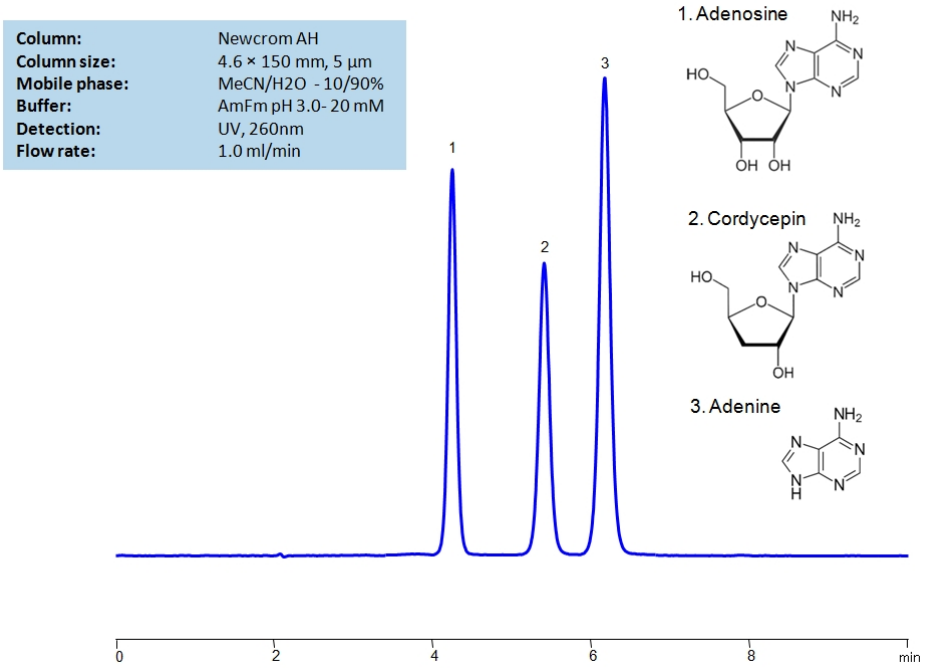
HPLC Separation of Adenosine, Cordycepin and Adenine on Newcrom AH Column



HPLC Method for Adenosine , Cordycepin , Adenine on Newcrom AH by SIELC Technologies

High Performance Liquid Chromatography (HPLC) Method for Analysis of Adenosine , Cordycepin , Adenine .

Adenosine is a key building block of energy-carrying molecules with the chemical formula C10H13N5O4 . It has a variety of other uses, including being a inhibitory neurotransmitter which helps with sleep and acting as a blood flow regulator. Medicinally, it is used as treatment for supraventricular tachycardia (SVT). You can find detailed UV spectra of Adenosine and information about its various lambda maxima by visiting the following link.

Cordycepin is an adenosine analogue with the chemical formula C10H13N5O3 . It is reported to prevent cell reproduction in various cancer cells. It also might possess antioxidant and anti-inflammatory properties, when considered in addition with it's ability to cross the blood-brain barrier, it may become widely used in pharmaceuticals.

Due to cordycepin having a very similar structure to adenosine, it has shown to have inhibitive properties on the COVID-19 coronavirus. However, due to their similar structures, the separation of the two sugars can be challenging. Both sugars can be separated isocratically in about six minutes on the Newcrom AH mixed-mode column, which has both hydrophobic and cationic exchange properties. The mobile phase consists of acetonitrile (ACN, MeCN) and water with ammonium formate as a buffer which makes it mass-spec (MS) compatible. It can also be UV detected at 260 nm.

Method Parameters

Column	Newcrom AH, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN/H2O – 10/90%
Buffer	AmFm pH 3.0- 20 mM
Flow Rate	1.0 mL/min
Detection	UV 260 nm, MS-compatible mobile phase

Quelle: https://sielc.com/hplc-separation-of-adenosine-and-cordycepin