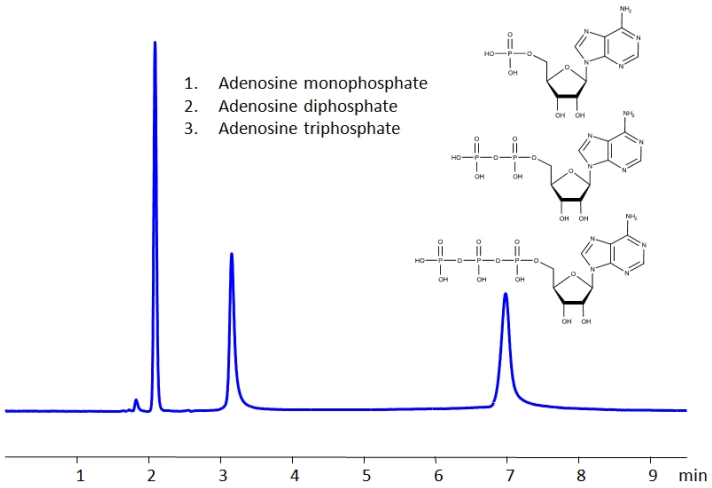
HPLC Separation of Adenosine mono-, di- and triphosphates on Newcrom BH Column



Column:	Newcrom BH
Column size:	4.6 × 150 mm, 3 µm
Column part number:	NBH-46.150.0310
Mobile phase:	$MeCN/H_2O$ – 10/90%
Buffer:	H_2SO_4 – 0.2%
Flow rate:	1 ml/min
Detection:	UV 262 nm

High Performance Liquid Chromatography (HPLC) Method for Analysis of Adenosine Monophosphate , Adenosine Diphosphate , Adenosine Triphosphate

Adenosine Triphosphate (ATP) is a nucleotide with the chemical formula C10H16N5O13P3. It is a primary energy carrier of the cell and is crucial to cellular energy metabolism. ATP is generated in the mitochondria and is used in numerous various cellular processes. It releases energy when a phosphate linkage breaks from it, creating adenosine diphosphate.

Adenosine Diphosphate (ADP) , also known as adenosine pyrophosphate, is a compound with the formula C10H15N5O10P2 . It is a precursor in the synthesis of DNA and RNA. Medications that block ADP receptors on platelets prevent blood clots in conditions like heart attacks and strokes.

Adenosine Monophosphate (AMP) is a nucleotide with the chemical formula C10H14N5O7P . Due to being a byproduct of ATP and ADP, it can be reused by the body for energy at higher forms. AMP can be converted into cyclic adenosine monophosphate (cAMP) to become a second messenger in the body, relaying signals between cells.

Using a Newcrom BH mixed-mode column and a mobile phase consisting of water and acetonitrile with a sulfuric acid (H2SO4) buffer, adenosine mono-, di- and triphosphate can be separated, measured, and analyzed. This method can UV detect this family of compounds at 262 nm with very high resolution.

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Method Parameters

Column	Newcrom BH, 4.6 x 150 mm, 3 µm, 100 Å, dual ended
Mobile Phase	MeCN/H2O – 10/90%
Buffer	H2SO4 – 0.2%
Flow Rate	1.0 mL/min
Detection	UV 262 nm

Quelle: https://sielc.com/hplc-separation-of-adenosine-mono-di-and-triphosphates-on-newcrom-bh-column

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