HPLC Determination of Ions on Newcrom A Column

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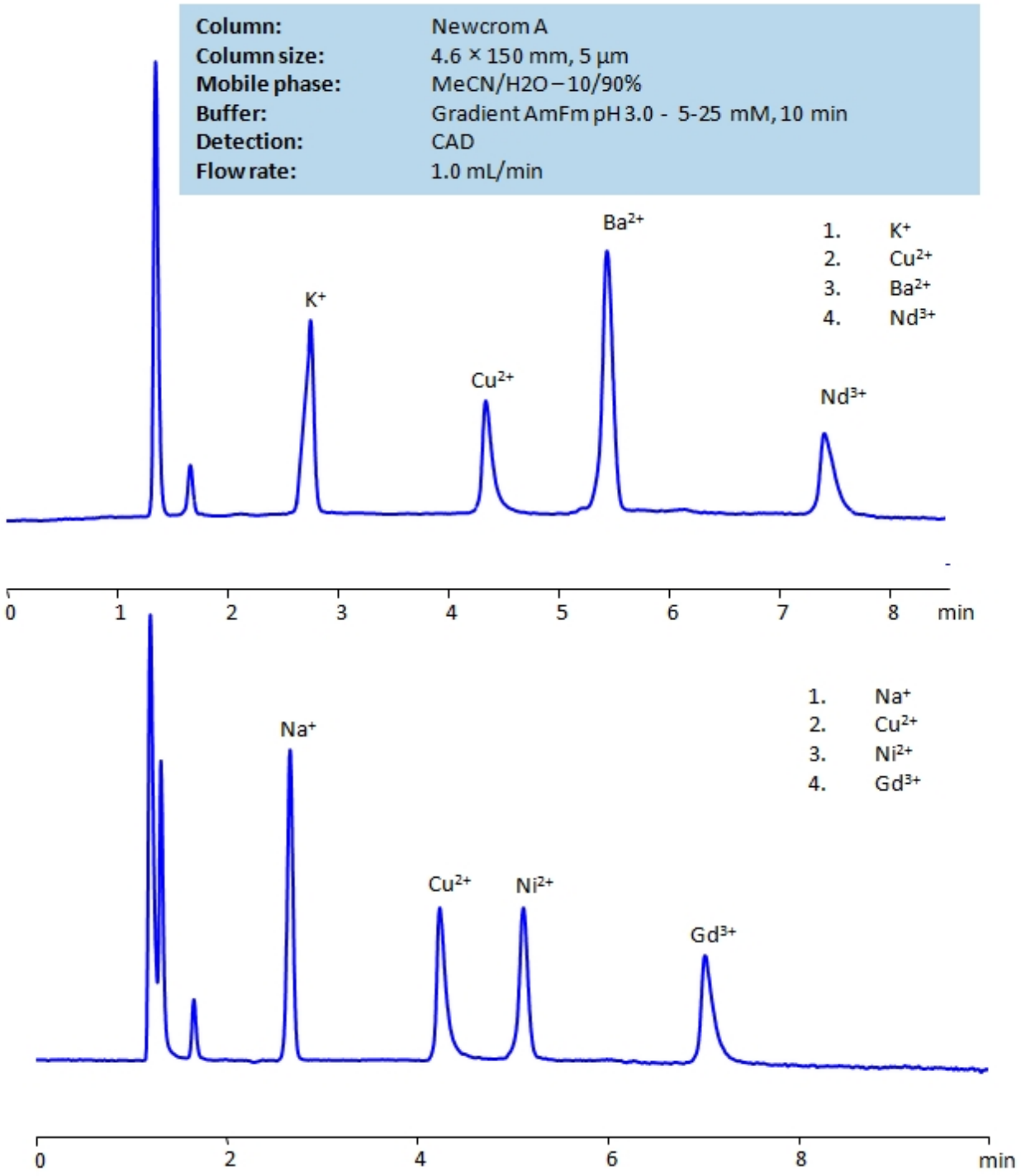
Chromatogram



Description

High Performance Liquid Chromatography (HPLC) Method for Analysis of Sodium , Copper , Nickel , Gadolinium acetate , Barium , Neodymium , Copper Sulfate .

Potassium ions, K + , are essential for cell function. They work as charge carriers inside animal cells to create the membrane. Imbalance of potassium can lead to debilitating health problems, but consumption of it through a diet can help regulate the negative effects of sodium on blood flow.

Copper ions, Cu 2+ , are known for their excellent electrical and thermal conductivity. Copper has been used since ancient times for tools, coins, and plumbing. These days, it is typically used in electrical wiring, construction, and industrial machinery. Timelessly, it plays a vital role in enzymes and red blood cell formation.

Barium ions, Ba 2+ , are typically used in quantum computing with trapped-ion computers, serving as a stable platform for qubits. It's other uses include ceramics, medical imaging as a contrast agent in X-ray and CT scans, and in experimental physics for beta decay process.

Neodymium ions, Nd 3+ , have a variety of uses including glass, lasers, and promoting plant growth. Most notably, Neodymium magnets are the strongest permanent magnets known. They can lift a thousand times its own weight and snap together with enough force t break bones. The major drawback of Neodymium magnets is that they lose their magnetism at low temperatures.

Sodium ions, which have a chemical symbol of Na + , are a soft alkali and highly reactive metal. Sodium is found in abundance in everyday materials like table salt, sea water, and even the Earth's crust. It is crucial for the body's function and fluid balance.

Nickel ions, Ni 2+ , are considered the most common and stable oxidation state for nickel, which is a lustrous metal. In this state, it forms compounds easily with all common anions. Ni 2+ is often found as green hexahydrate.

Method Parameters

Mobile Phase	MeCN – 10%
Buffer	Gradient Ammonium formate pH 3.0
Flow Rate	1.0 ml/min
Detection	CAD
Class of Compounds	Hydrophilic, Metal, Ion
Analyzing Compounds	Sodium,Copper,Nickel,Gadolinium acetate,Barium,Neodymium,Copper Sulfate

HPLC Column Used

Newcrom A, 4.6 x 150 mm, 5 µm, 100 A, dual ended

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