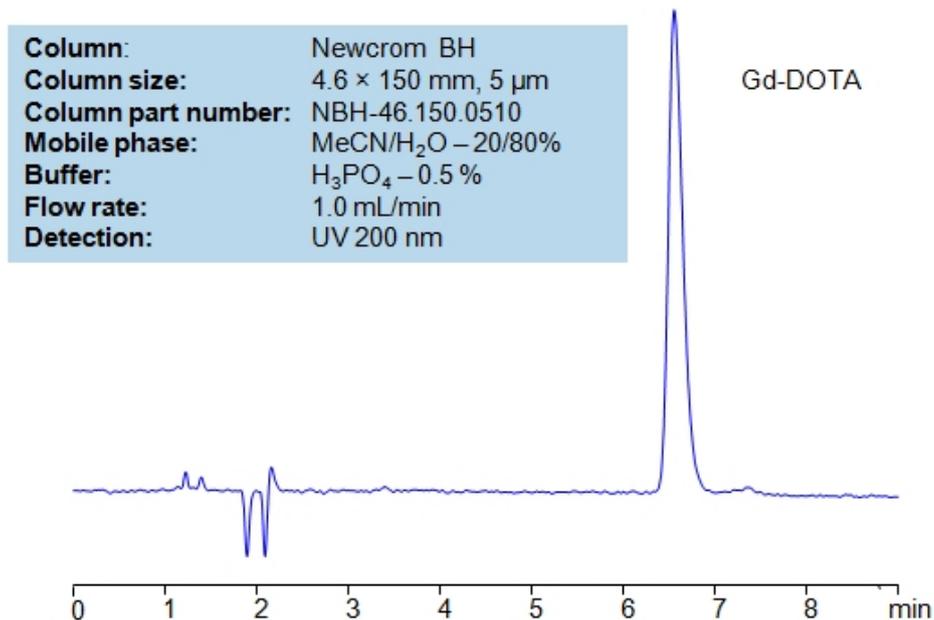


HPLC Method For Analysis Of Gadolinium-DOTA on Newcrom BH Column



Separation type: Liquid Chromatography Mixed-mode

High Performance Liquid Chromatography (HPLC) Method for Analysis of Gadolinium-DOTA

Gadolinium-DOTA, or known Gadoteric acid, is a well-known contrast agent for imaging of (often leaky) blood vessels, the brain, and spine. This compound is composed of dodecane tetraacetic acid, or DOTA, with a Gadolinium III cation in the center. Due to its unique structure, this acidic compound has paramagnetic properties; when exposed to a magnetic field, it develops a magnetic moment, which can be utilized for magnetism-based imaging like MRI and NMR. Gadolinium-DOTA acts as a signal amplifier, thus appearing brighter under MRI scans and highlighting the tissues that have absorbed it. In its salt form (with meglumine), it crosses the blood-brain barrier and allows for imaging of the brain and other areas of the nervous system. Due to its paramagnetic properties, Gadolinium-DOTA fluoresces; it excites at 274 nm and emits light at 312 nm. This acid can be detected in the low UV regime. Using a Newcrom BH mixed-mode column and a mobile phase consisting of (mostly) water and acetonitrile, Gadolinium-DOTA can be retained, measured, and analyzed. This analysis method can be UV detected at 200 nm with high resolution.

The Newcrom columns are a family of reverse-phase-based columns. Newcrom A , AH , B , and BH are all mixed-mode columns with either positive or negative ion-pairing groups attached to either short (25 Å) or long (100 Å) ligand chains. Newcrom R1 is a special reverse-phase column with low silanol activity.

Method Parameters

Column	Newcrom BH, 4.6×150 mm, 5 µm, 100 Å
Mobile Phase	MeCN/H ₂ O – 20/80%
Buffer	H ₃ PO ₄ – 0.5%
Flow Rate	1.0 mL/min
Detection	UV, 200 nm

Quelle: <https://sielc.com/hplc-method-for-analysis-of-gadolinium-dota>