HPLC-MS Method for the Analysis of Tofisopam in Pharmaceutical Formulation on Newcrom R1 Column

Column:	Newcrom R1
Column size:	3.2× 100 mm, 5 µm
Column part number:	NR1-32.100.0510
Mobile phase:	Gradient MeCN 20 - 80%, 10 min
Buffer:	Formic acid - 2%
Flow rate	0.2 mL/min
Detection:	ESI-SIM: [M+H]⁺ m/z 383
Concentration:	0.001 mg/mL
Injection Volume:	1 µL
Diluent:	MeCN/H2O - 50/50%
Limit of Detection:	0.1 ppb
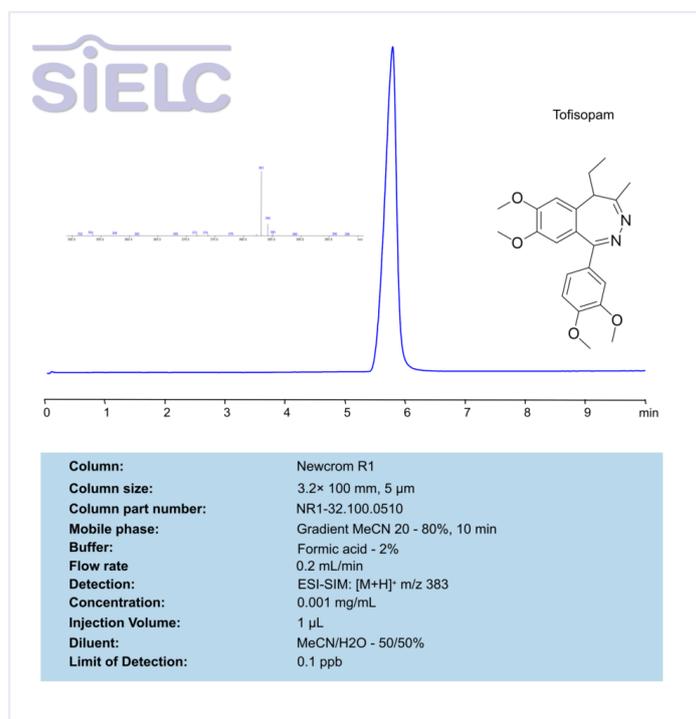
Tofisopam is an anxiolytic medication belonging to the benzodiazepine class, but it differs from traditional benzodiazepines in that it has no significant sedative, muscle relaxant, or anticonvulsant properties. It is mainly used to treat anxiety and stress-related disorders while allowing the user to remain alert and functional.

Unlike classic benzodiazepines like diazepam or alprazolam, tofisopam does not cause drowsiness and has a lower potential for addiction and dependence. It is commonly prescribed in some countries, particularly in Eastern Europe and parts of Asia, but is not widely available in the U.S. or many Western countries.

Tofisopam can be retained and analyzed using the Primesep B stationary phase column. The analysis utilizes an gradientc method with a simple mobile phase consisting of water, acetonitrile (MeCN), and formic acid. Mass spectrometric detection was carried out in ESI-SIM mode, monitoring the ions [M+H]+ at m/z 383

*LOD was determined for this combination of instrument, method, and analyte, and it can vary from one laboratory to another even when the same general type of analysis is being performed.

Method Parameters

Column	Newcrom R1, 3.2 x 100 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN – 20-80%, 10 min
Buffer	Formic acid – 2%
Flow Rate	0.2 mL/min
Detection	ESI-SIM: [M+H] 1 + 383
Limit of Detection	0.1 ppb

Quelle: https://sielc.com/hplc-ms-method-for-analysis-tofisopam