



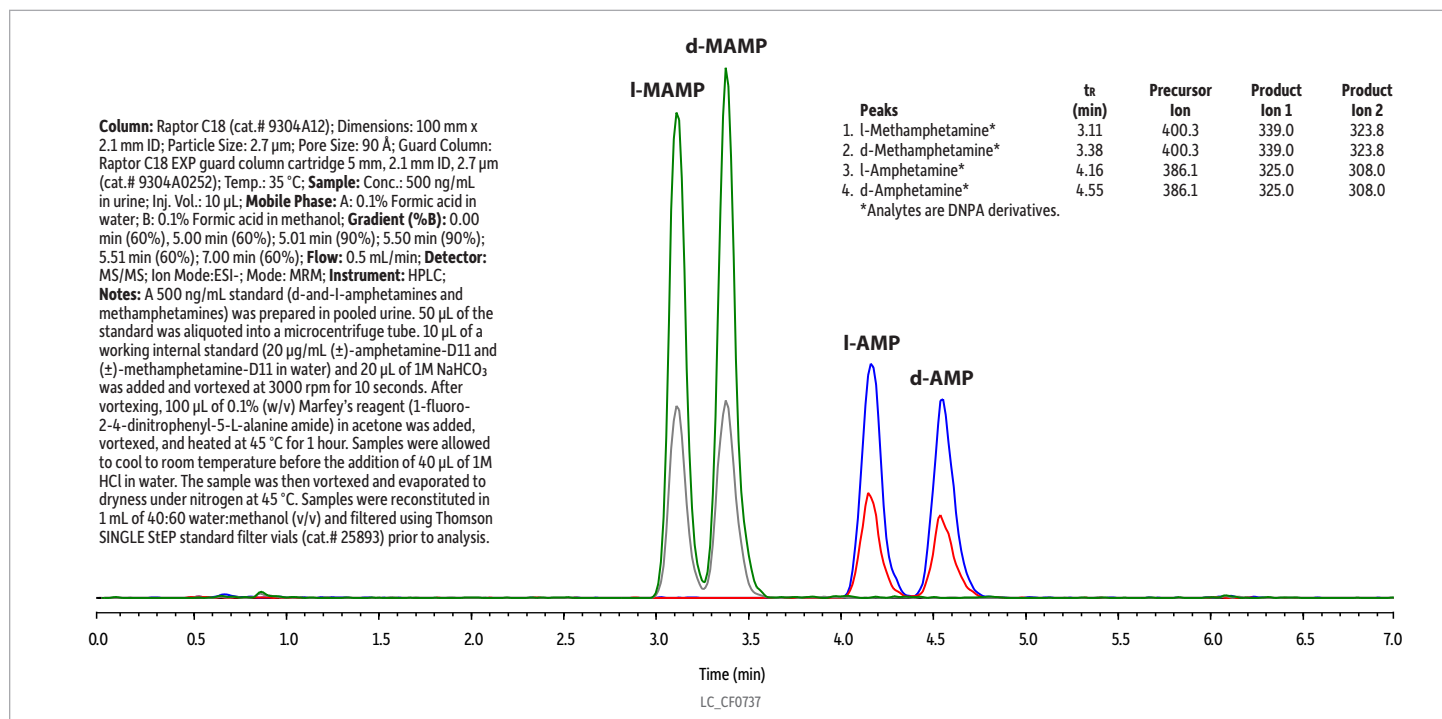
Featured Application: Amphetamine and Methamphetamine on Raptor C18

Analysis of d- and l-Amphetamine and Methamphetamine Enantiomers for High-Throughput Labs

- Separate d- and l- enantiomers without chiral columns and dedicated instruments.
- Simple precolumn derivatization and dilution sample preparation.
- Accurately distinguish and quantify licit vs. illicit methamphetamine.

Amphetamine and methamphetamine are psychostimulant drugs and occur as two enantiomers, dextrorotary and levorotary, as a result of their chiral center. The dextro-methamphetamine (d-isomer) form is highly abused and is typically found in illicit preparations. However, detection of abuse is complicated because consumption of over-the-counter and prescription medications may yield positive results if the analytical method used cannot distinguish between the enantiomers. Chiral separation of d- and l-methamphetamine and their metabolites d- and l-amphetamine can help determine whether the source was licit or illicit, but chiral columns can be expensive, may necessitate a dedicated instrument, and are not as broadly useful as ubiquitous C18 columns.

In order to provide labs with a high-throughput assay that effectively separates d- and l-amphetamine and methamphetamine enantiomers in urine without the use of a costly and specialized chiral column, we developed the LC-MS/MS method shown here on a standard reversed-phase Raptor C18 column. Our method employs a simple precolumn derivatization followed by dilution and results in a selective, specific analysis of d- and l-amphetamine and methamphetamine enantiomers that is free from sample matrix interferences. Separation was achieved within a total run time of 7 minutes and quantitation in urine was performed across a linear range of 50-5000 ng/mL. Validation across this range demonstrated that this method provides reliable analysis of d- and l-amphetamine and methamphetamine enantiomers in a workflow and time frame suitable for high-throughput clinical and forensic toxicology labs.

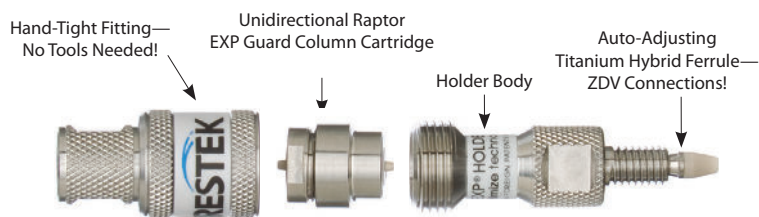


Raptor C18 LC Columns (USP L1)



Length	2.1 mm cat.#	3.0 mm cat.#	4.6 mm cat.#
1.8 µm Columns			
30 mm	9304232	—	—
50 mm	9304252	930425E	—
100 mm	9304212	930421E	—
150 mm	9304262	—	—
2.7 µm Columns			
30 mm	9304A32	9304A3E	9304A35
50 mm	9304A52	9304A5E	9304A55
100 mm	9304A12	9304A1E	9304A15
150 mm	9304A62	9304A6E	9304A65
5 µm Columns			
30 mm	—	930453E	—
50 mm	9304552	930455E	9304555
100 mm	9304512	930451E	9304515
150 mm	9304562	930456E	9304565
250 mm	—	—	9304575

Raptor EXP Guard Cartridges



Protect your investment and extend the life of our already-rugged LC columns and change guard column cartridges by hand without breaking fluid connections—no tools needed!

EXP Direct Connect Holder

Description	qty.	cat.#
EXP Direct Connect Holder for EXP Guard Cartridges (includes hex-head fitting & 2 ferrules)	ea.	25808

Maximum holder pressure: 20,000 psi (1,400 bar)

Raptor EXP Guard Column Cartridges

Description	Particle Size	qty.	5 x 2.1 mm cat.#	5 x 3.0 mm cat.#	5 x 4.6 mm cat.#
Raptor C18 EXP Guard Column Cartridge	UHPLC	3-pk.	9304U0252	9304U0253	—
Raptor C18 EXP Guard Column Cartridge	2.7 µm	3-pk.	9304A0252	9304A0253	9304A0250
Raptor C18 EXP Guard Column Cartridge	5 µm	3-pk.	930450252	930450253	930450250

Maximum cartridge pressure: 1,034 bar/15,000 psi* (UHPLC), 600 bar/8,700 psi (2.7 µm); 400 bar/5,800 psi (5 µm)

* For maximum lifetime, recommended maximum pressure for UHPLC particles is 830 bar/12,000 psi.

Hybrid Ferrule U.S. Patent No. 8201854, EXP Holders U.S. Patent No. 8696902, EXP2 Wrench U.S. Patent No. D766055. Other U.S. and Foreign Patents Pending. The EXP, Free-Turn, and the Opti- prefix are registered trademarks of Optimize Technologies, Inc.

Thomson SINGLE StEP Standard Filter Vials

Porosity	Color	qty.	cat.#
Nylon			
0.2 µm	black preslit cap	100-pk.	25891
0.45 µm	pink preslit cap	100-pk.	25892
PES (polyethersulfone)			
0.2 µm	grey preslit cap	100-pk.	25897
PTFE (polytetrafluoroethylene)			
0.2 µm	green preslit cap	100-pk.	25893
0.45 µm	blue preslit cap	100-pk.	25894
PVDF (polyvinylidene difluoride)			
0.2 µm	red preslit cap	100-pk.	25895
0.45 µm	yellow preslit cap	100-pk.	25896

Patent No. 7,790,117

