

**ASTRA**

by  **CHROMSERVIS**

## **ASTRA<sup>®</sup> HPLC COLUMNS EXTEND OUR ARION<sup>®</sup> AND CHROMSHELL<sup>®</sup> PRODUCT LINES.**

The ASTRA<sup>®</sup> has been developed in the Czech Republic to offer an alternative to a broad range of general HPLC columns. ASTRA<sup>®</sup> brings a completely new and unique stationary phase with a polar-embedded group to offer complementary selectivity.



Unique and high endcapped C18 phases



330 m<sup>2</sup>/g surface area

# ASTRA® HPLC Columns

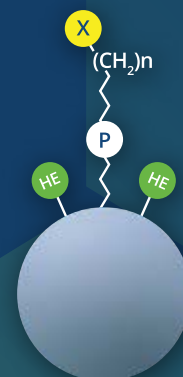


Particle size	5 µm	3 µm
Metal content	<10 ppm	<10 ppm
Mean particle diameter	4.6 ± 1.2 µm	3.0 ± 0.7 µm
Proximity to the sphere	0.97 ± 0.04	0.97 ± 0.03

ASTRA® phases	C18-HE	DM
Particle size (µm)	3, 5	3, 5
Pore size (Å)	100	100
Surface area (m <sup>2</sup> /g)	330	330
Carbon load	17 %	12%
pH stability	2 to 9	2 to 9
Endcapping	High	High
100% aqueous mobile phase	×	×
USP code	L1	-



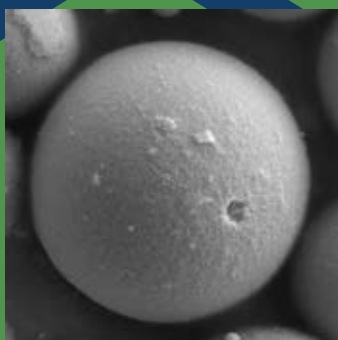
C18-HE



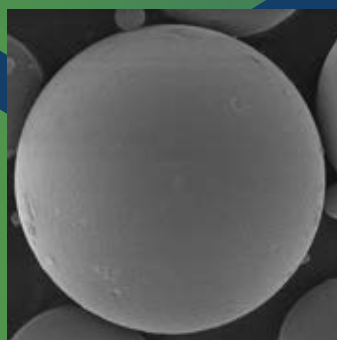
DM

## Up Close

As with all phases developed by Chromservis, ASTRA® HPLC column particles are regularly analysed by SEM. The electron microscope shows a very high quality of ASTRA® 3µm and 5µm particles.



ASTRA® particle 3 µm



ASTRA® particle 5 µm

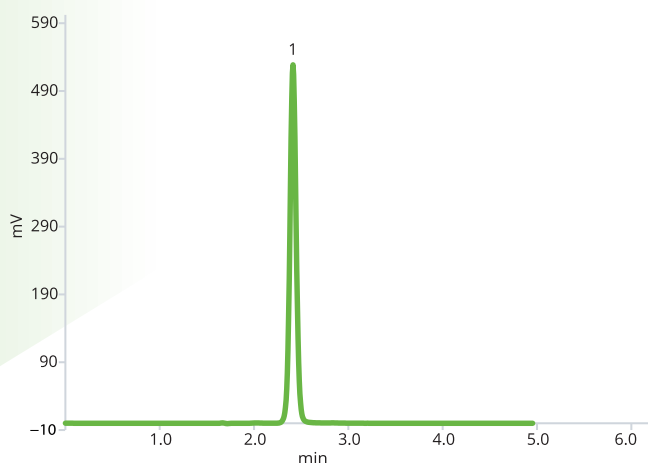
### Main particle characteristics:

- Close proximity to the sphere
- Highly effective endcapping
- No broken particles
- Robustness under high pressure
- Batch-to-batch reproducibility
- Column-to-column reproducibility

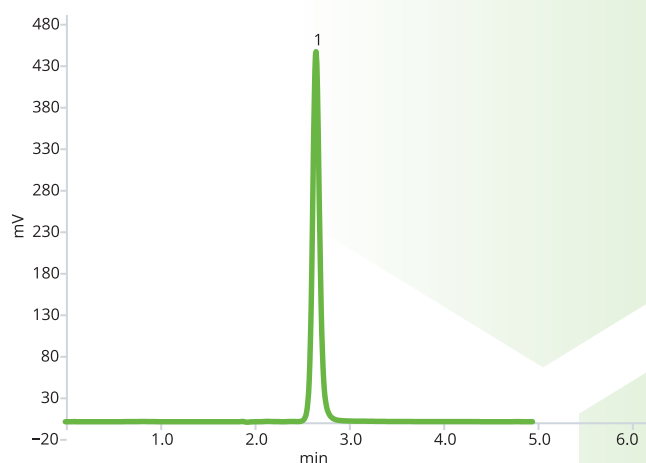
## HMF in Infusion Solution

The levels of the degradation compound, 5-hydroxymethylfurfural (5-HMF), in dextrose injection is an important determination in pharmaceutical formulas and pharmacokinetic studies.

<b>Substance</b>	5-HMF, 5-Hydroxymethylfurfural, CAS Number 170678-36-1
<b>Synonym</b>	5-(Hydroxymethyl)furan-2-carbaldehyde
<b>IUPAC Name</b>	5-(Hydroxymethyl)-2-furaldehyde

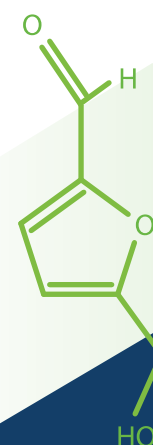


Standard mixture on ASTRA® C18-HE column



Standard mixture on ASTRA® DM column

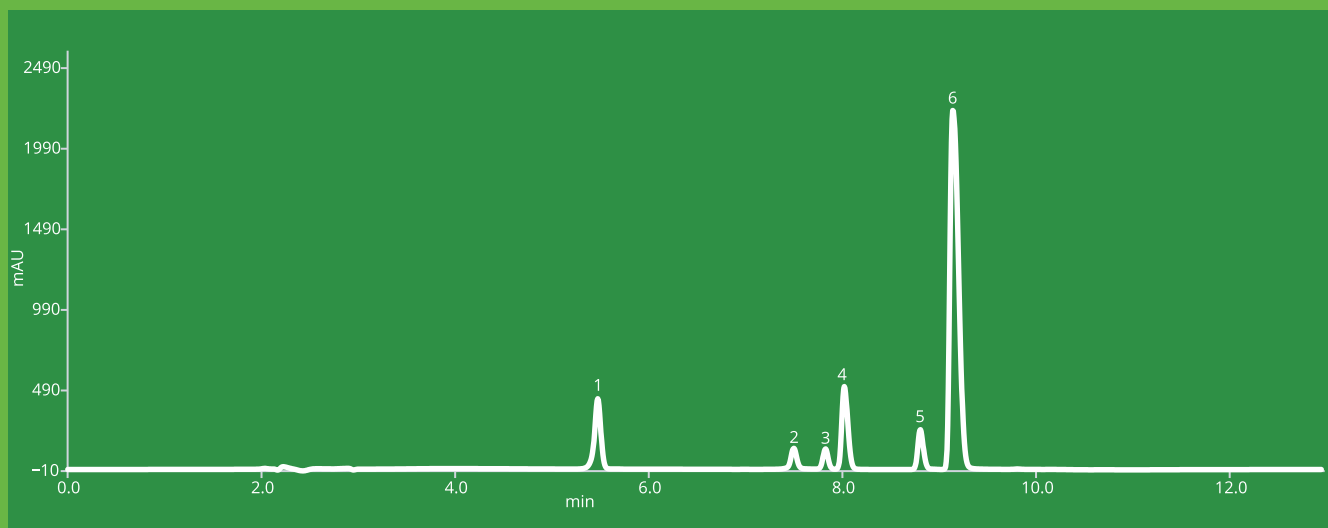
<b>Column</b>	ASTRA® C18-HE, 5 µm / ASTRA® DM, 5 µm
<b>Dimensions</b>	150 mm × 4.6 mm / 150 mm × 4.6 mm
<b>Part number</b>	AST-5732-LK46 / AST-5810-LK46
<b>Mobile phase</b>	Methanol/water 40/60 (v/v) Isocratic
<b>Flow rate</b>	1.0 ml/min
<b>Temperature</b>	25 °C
<b>Injection volume</b>	2.5 µl
<b>Detection</b>	UV @284 nm
<b>Analytes</b>	1. 5-Hydroxymethylfurfural



5-Hydroxymethylfurfural

## Beta Blockers

Beta-blockers, also known as beta-adrenergic blocking agents, are essential medications for treating various heart diseases and high blood pressure.



Standard mixture on ASTRA® C18-HE column

<b>Column</b>	ASTRA® C18-HE, 5 µm			
<b>Dimensions</b>	150 mm × 4.6 mm			
<b>Part number</b>	AST-5732-LK46			
<b>Mobile phase</b>	A: Phosphate buffer 20mM, pH 2.5		B: ACN	
<b>Gradient elution</b>	Time	A (%)	B (%)	Flow rate, ml/min
	0	95	5	0.75
	3	85	15	1.00
	8	50	50	1.00
	12	95	5	1.00
	13	95	5	0.75
<b>Flow rate</b>	See gradient table			
<b>Temperature</b>	25 °C			
<b>Injection volume</b>	2.0 µl			
<b>Detection</b>	UV @250 nm			
<b>Analytes</b>	1. Atenolol, CAS No. 29122-68-7		4. Metoprolol, CAS No. 37350-58-6	
	2. Pindolol, CAS No. 13523-86-9		5. Labetalol, CAS No. 36894-69-6	
	3. Acebutolol, CAS No. 37517-30-9		6. Propranolol, CAS No. 525-66-6	

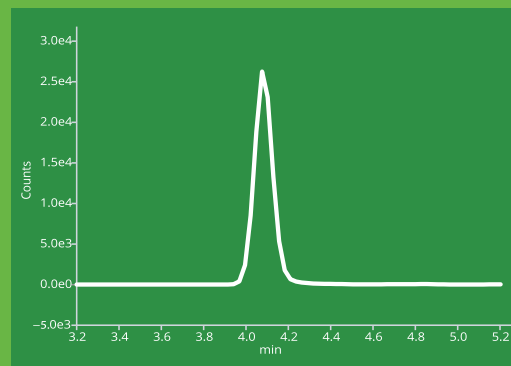
# Applications



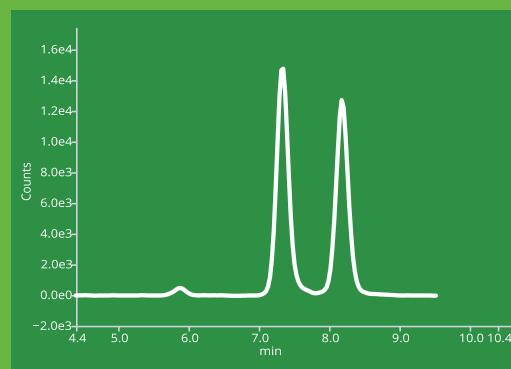
## API Glucuronide By LC/MS

This application shows high ASTRA® HPLC column stability in the pharmacokinetic assay. The API is used for hypolipidemic therapy adjuncting cholesterol levels in the human body.

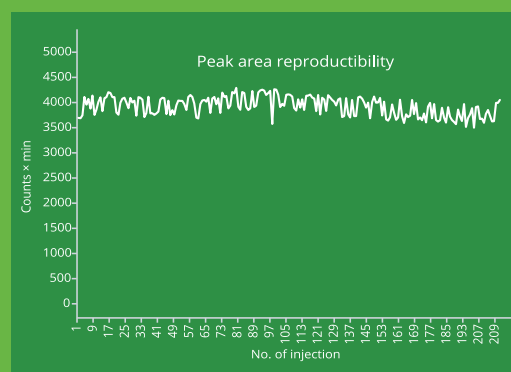
<b>Substance</b>	An agent of a novel class of selective cholesterol absorption inhibitors
<b>Column</b>	ASTRA® C18-HE, 5 µm
<b>Dimensions</b>	150 mm × 4.6 mm
<b>Part number</b>	AST-5732-LK46
<b>Mobile phase</b>	MeOH:ACN:Water:0.1% NH <sub>4</sub> OH 25:50:20:5 (v/v) Isocratic
<b>Flow rate</b>	0.45 ml/min
<b>Temperature</b>	Ambient
<b>Injection volume</b>	15 µl
<b>Detection</b>	MS/MS
<b>Mode</b>	ESI, Negative 2500 eV
<b>MS Temperature</b>	350 °C (capillary), 380 °C (vaporiser)
<b>Collision gas</b>	Argon
<b>Instrument</b>	TSQ Quantiva (Thermo Fisher Scientific)



Scan 1 – API glucuronide



Scan 2 – API isomers



Plasma sample on ASTRA® C18-HE column

Compound name	Q1 (m/z)	Q2 (m/z)	Collision cell pressure	Collision energy
API Glucuronide D4	588	275	2 mTorr	29 eV
API D	412	275	2 mTorr	29 eV

# Ordering Information

## 5 µm ASTRA® (all dimensions in mm)

Phase	C18-HE	DM
100 × 3.0	AST-5732-LI30	AST-5810-LI30
150 × 3.0	AST-5732-LK30	AST-5810-LK30
100 × 4.6	AST-5732-LI46	AST-5810-LI46
150 × 4.6	AST-5732-LK46	AST-5810-LK46
250 × 4.6	AST-5732-LM46	AST-5810-LM46
<b>AGS Guard System</b>		
<b>4.0 mm Cartridges</b>	AGS-5731-RD4*	AGS-5731-RD4*

## 3 µm ASTRA® (all dimensions in mm)

Phase	C18-HE	DM
50 × 2.1	AST-5732-IG21	Coming soon
100 × 2.1	AST-5732-II21	Coming soon
150 × 2.1	AST-5732-IK21	Coming soon
100 × 3.0	AST-5732-II30	Coming soon
150 × 3.0	AST-5732-IK30	Coming soon
100 × 4.6	AST-5732-II46	Coming soon
150 × 4.6	AST-5732-IK46	Coming soon
<b>AGS Guard System</b>		
<b>2.1 mm Cartridges</b>	AGS-5731-RC2*	Coming soon
<b>4.0 mm Cartridges</b>	AGS-5731-RC4*	Coming soon

\*AGS Guard System cartridges require AGS Holder (p/n AGS-5731-000). The holder is supplied with a stainless steel ferrule. For applications up to 400 bars, it is recommended that the PEEK ferrule be used (p/n AGS-5731-Y00).

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