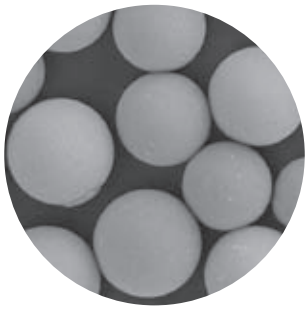
ARION®

As ARION® is one of the latest objects found in space, so it is also the best workhorse for your applications. Explore our new line of ARION® HPLC columns. What innovations does this column bring to you?

- Strict quality control of alkaline and metal content during the silica gel production.
- Narrow particle size and pore size distribution.
- Unique production process ensuring high lot-to-lot reproducibility.
- Good stability at higher temperatures.



ARION® Silicagel

Particle size	5 µm	2.2 µm
Metal content	<10 ppm	<10 ppm
Temperature stability	100 °C*	100 °C*
Mean particle diameter	5.3 ± 0.9 µm	2.5 ± 0.5 µm
Proximity to the shape of a sphere	0.96 ± 0.04	0.97 ± 0.03

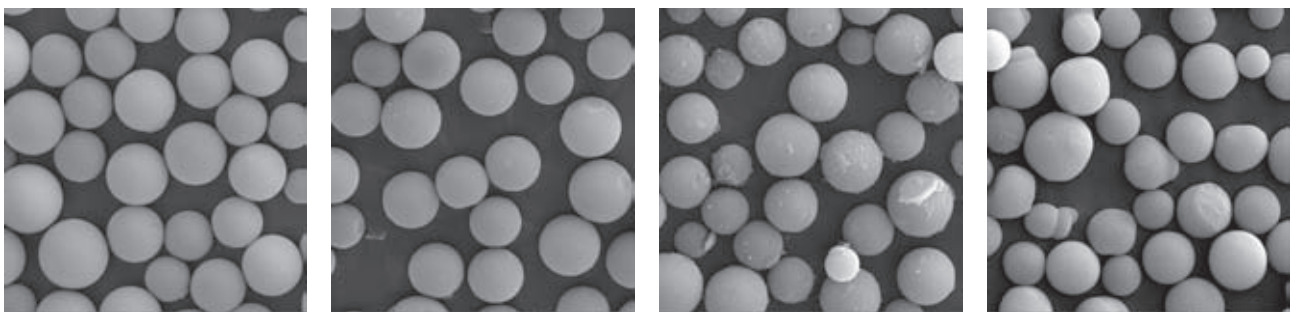
* Depends on mobile phase used and silica bonding.

ARION® phases	Particle size (µm)	Pore size (Å)	Surface area (m^2/g)	Carbon load	pH stability	Endcapping	100% aqueous mobile phase	USP code
Plus C18	1.7, 2.2, 3, 5, 10, 15	100	420	18 %	1.0 to 10	Multi-step	×	L1
Polar C18*	2.2, 3, 5, 10, 15	120	325	16 %	1.5 to 7	Multi-step	✓	L1
C8	3, 5	120	325	11 %	2.0 to 7	Single-step	×	L7
Biphenyl	3, 5	100	325	12 %	2.0 to 7.5	Proprietary	✓	L11
Phenyl-Butyl	2.2, 3, 5	100	300	12 %	1.5 to 7.5	Single-step	×	L11
PFP	5	100	420	14 %	1.5 to 7.5	Single-step	✓	L43
NH_2	2.2, 3, 5	120	325	5 %	2.0 to 6.5	Proprietary	×	L8
CN	3, 5, 10	120	325	8 %	2.0 to 7	Single-step	×	L10
HILIC Plus	2.2, 3, 5	100	420	–	1.5 to 7	Proprietary	✓	L3
Si	2.2, 3, 5, 10	100	420	–	1.5 to 7	–	×	L3
SAX	5	120	325	–	1.0 to 7.5	–	×	L14
SCX	5	120	325	–	1.0 to 7.5	–	×	L9

* Unique selectivity for Amino Acid and small molecules.

What does ARION® quality look like?

ARION® particles have a very tight distribution and the closest proximity to the shape of a spherical particle (c=0.9618 ± 0.0353). This ensures high separation power and separation reproducibility.



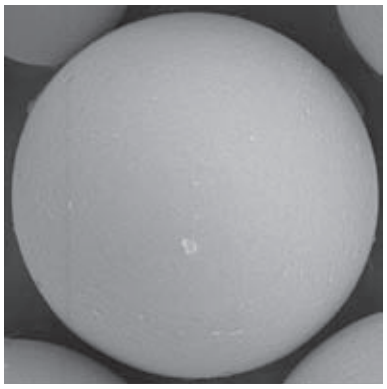
ARION® Competitor L Competitor X Competitor E

SEM HV analysis 20.0 kV, view field 30 µm (by independent laboratory)

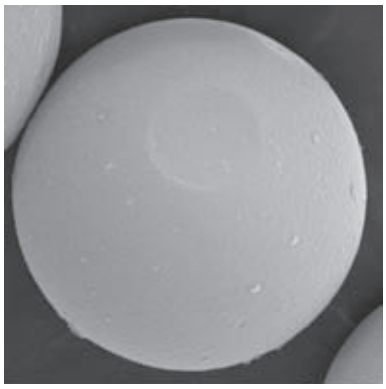
The ARION® medium does not include broken or "potato-shaped" particles. The silica spherical shape is unique; both surface uniformity and surface smoothness enable better packing into HPLC columns and therefore paramount chromatography resolution and reproducibility.

Up close

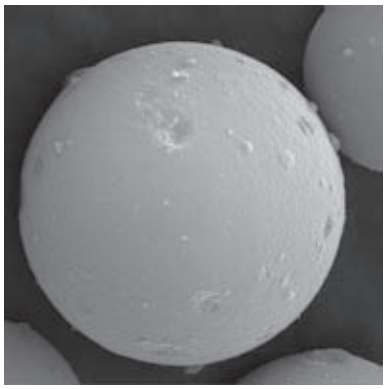
The 5-micron electron microscope field clearly shows the highest quality of ARION® 5µm particles.



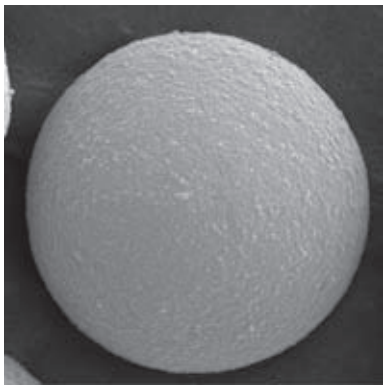
ARION® particle 5 µm



Competitor L particle 5 µm



Competitor X particle 5 µm

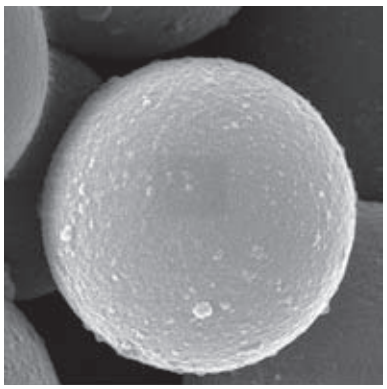


Competitor E particle 5 µm

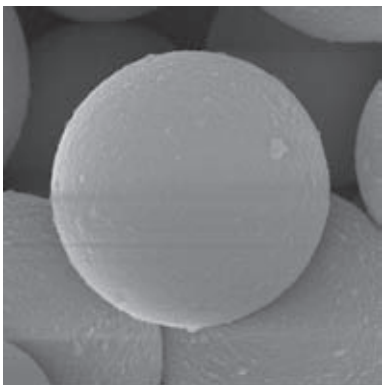
Main particle characteristics:

- The closest proximity to a sphere.
- Unique surface smoothness shown in the pictures above.
- Tight particle size distribution.
- No broken particles.
- No presence of clustered particles.
- No “Moon craters or mountains”.

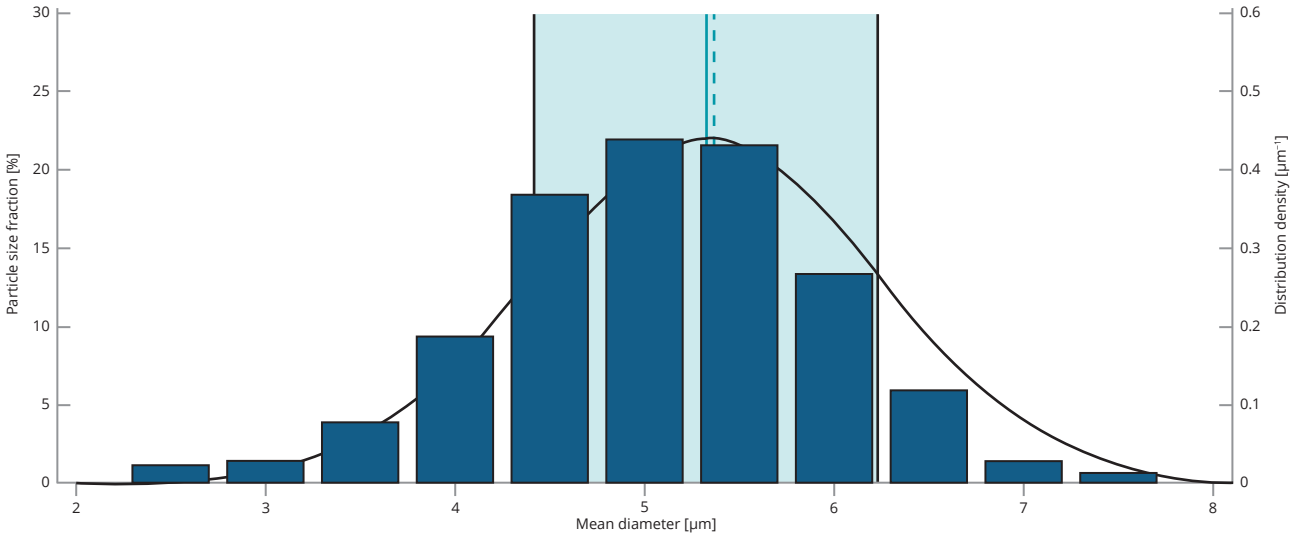
Particle size distribution



ARION® particle 1.7 µm



ARION® particle 2.2 µm

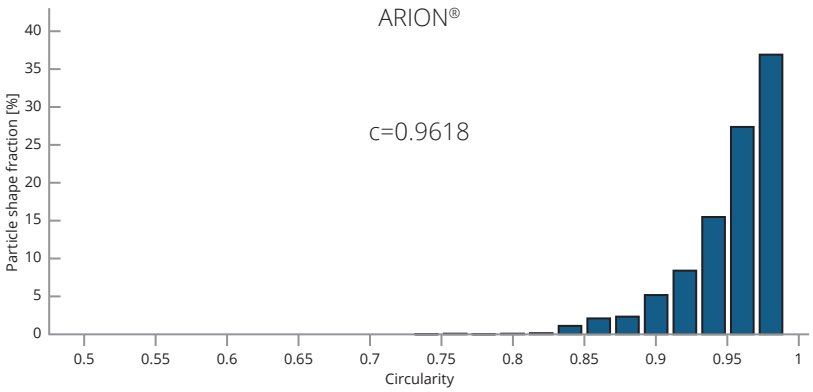


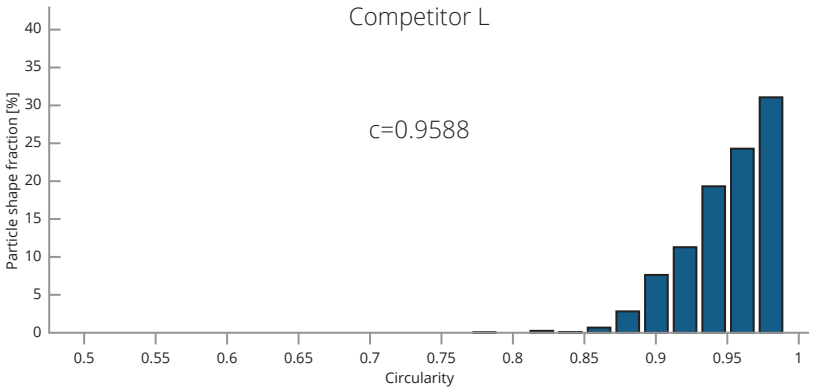
Particle size distribution of ARION® 5 µm particles shows a tight profile calculated from ferret figures by SEM.

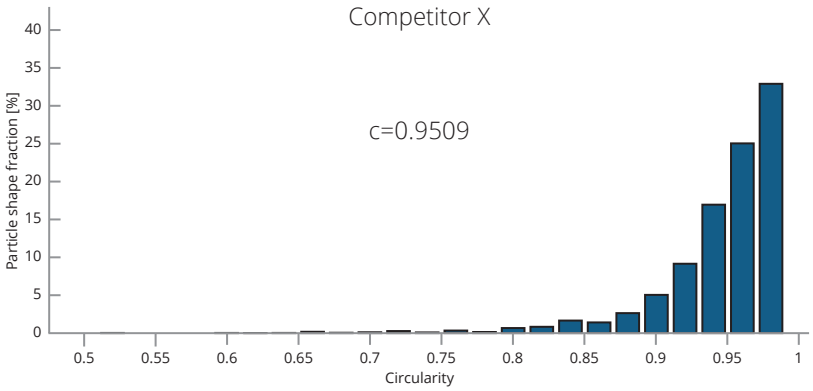
ARION® column hardware:

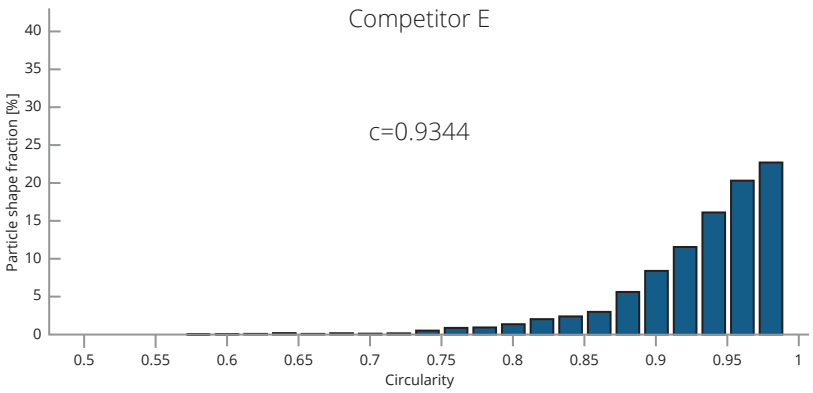
- Modern column hardware for easy handling in a narrow space.
- UHPLC grade Stainless Steel with an amazingly smooth internal surface.
- Colour coded fittings.

Circularity



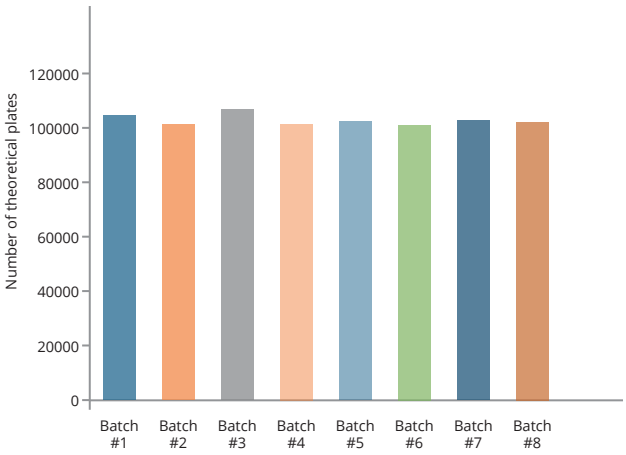




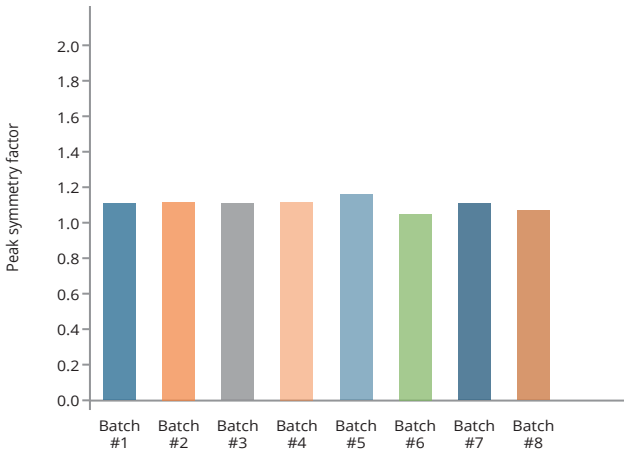


Batch to batch reproducibility

Batch-to-batch reproducibility is shown in the two bar graphs below. The silica batches are strictly controlled and checked for symmetry, and efficiency (number of theoretical plates/meter).



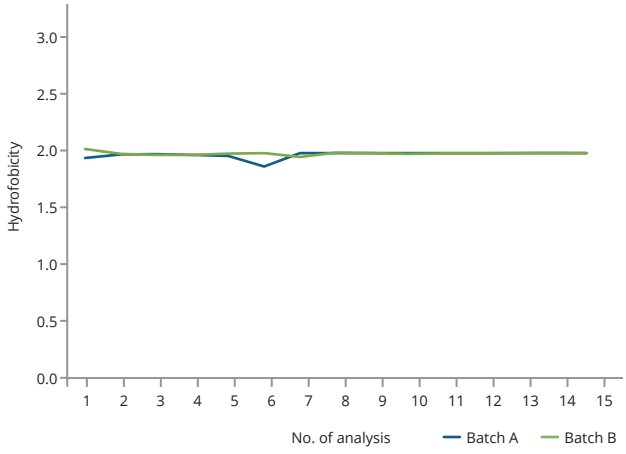
Theoretical plates reproducibility



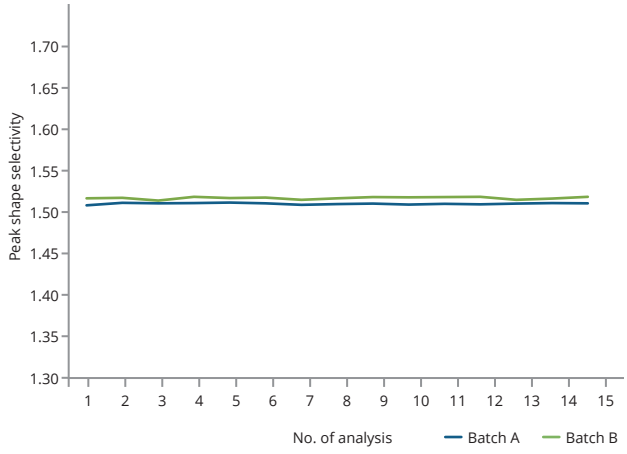
Symmetry reproducibility

Both the silanol activity and hydrofobicity tests are defined e.g. by the Engelhardt test. The hydrofobicity test is based on calculation of the ratio of retention factors $\mathbf{k}_{ethylbenzene}/\mathbf{k}_{toluene}$. The first picture of the Engelhardt test shows a comparison of 2 batches to UHPLC columns for 15 replicates.

Peak shape selectivity is based on a calculation of ratio of $\mathbf{k}_{triphenylene}/\mathbf{k}_{o\text{-}terpenyl}$.

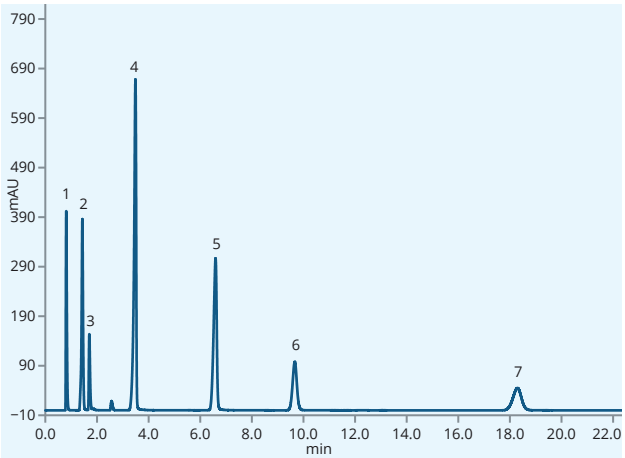


Hydrofobicity test

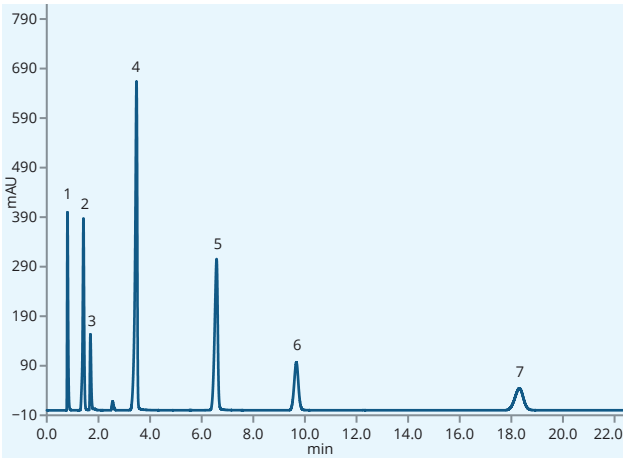


Peak shape selectivity

Batch to batch reproducibility



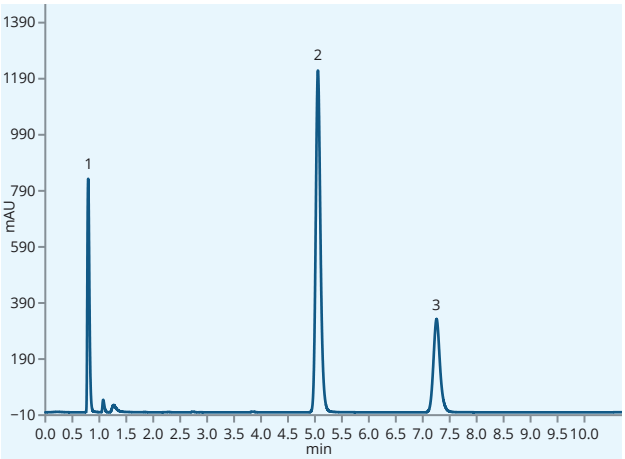
Batch A



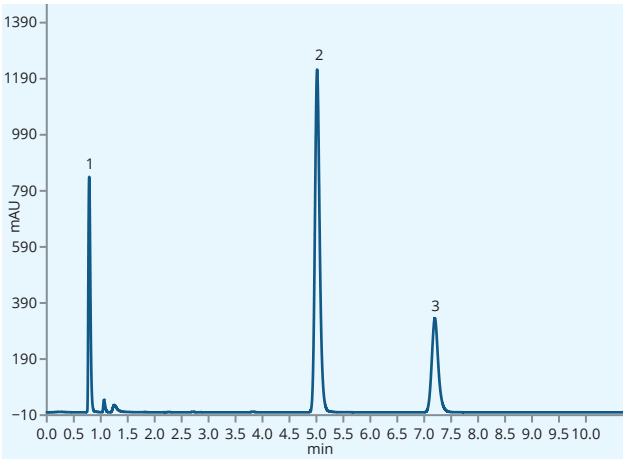
Batch B

Analysis of two batches based on the Engelhardt test.

Column	ARION® Plus C18, 1.7 µm
Dimensions	100 mm × 2.1 mm
Mobile phase	Methanol : water 49/51 (v/v) Isocratic elution
Flow rate	0.3 mL/min
Temperature	40 °C
Analytes	**1. Uracil** (t_0) **2. Aniline** **3. Phenol** **4. N,N-dimethyl-aniline** **5. p-Ethyl-aniline** **6. Toluene** **7. Ethylbenzene**



Batch A



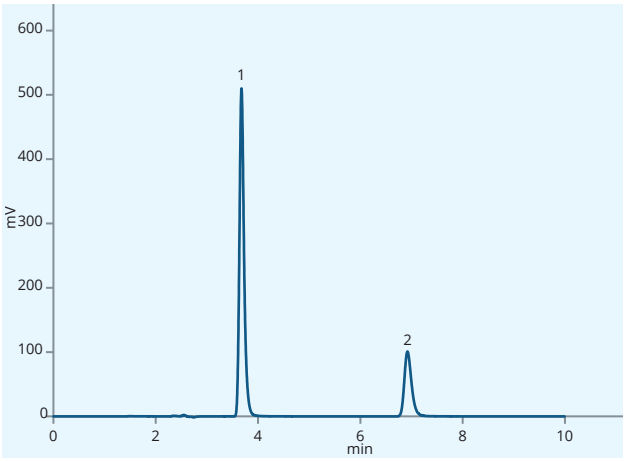
Batch B

Analysis of two batches based on the Shape selectivity test.

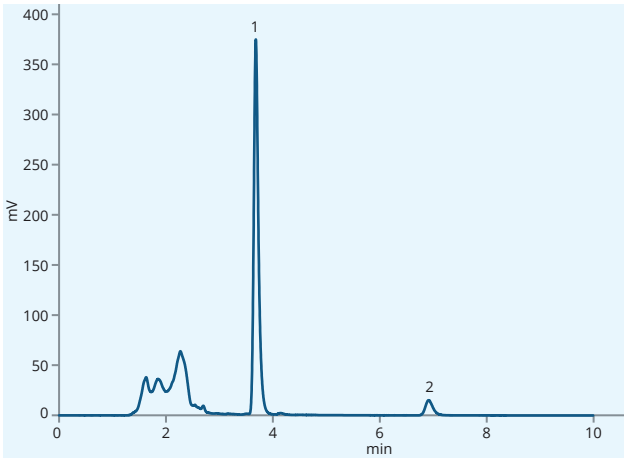
Column	ARION® Plus C18, 1.7 µm
Dimensions	100 mm × 2.1 mm
Mobile phase	Methanol : water 79/21 (v/v) Isocratic elution
Flow rate	0.3 mL/min
Temperature	40 °C
Analytes	**1. Uracil** (t_0) **2. Triphenylene** **3. o-Terpenyl**

Alcaloids – xanthine derivatives

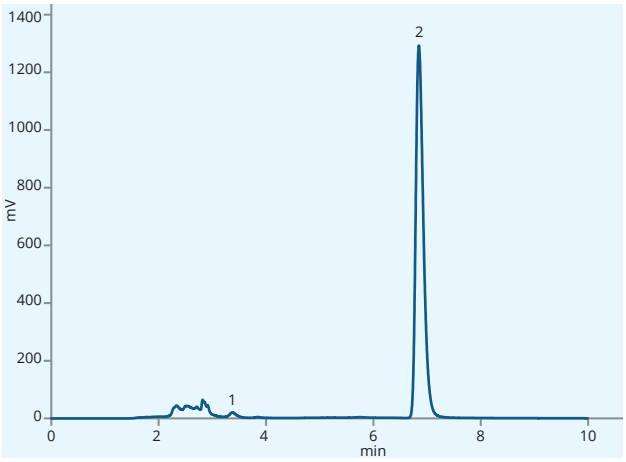
Xanthine alkaloids occur naturally in various plants, such as cocoa, tea and coffee trees. They are commonly used for their effects as mild stimulants. Xanthine alkaloids are monitored in food and drinks, e.g. in chocolate, cocoa powder, and energy drinks.



Theobromine and caffeine standard



Cocoa sample

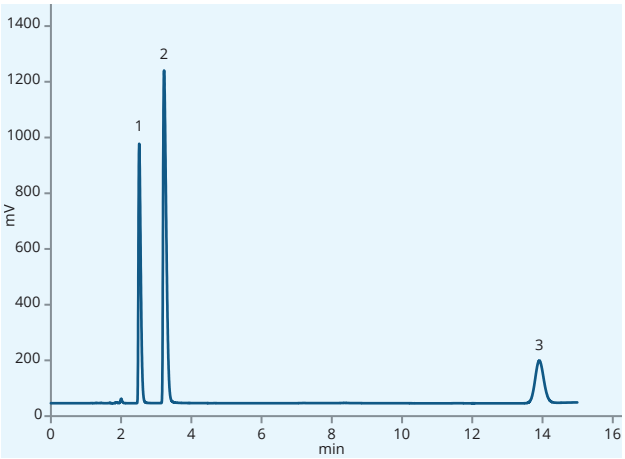


Energy drink

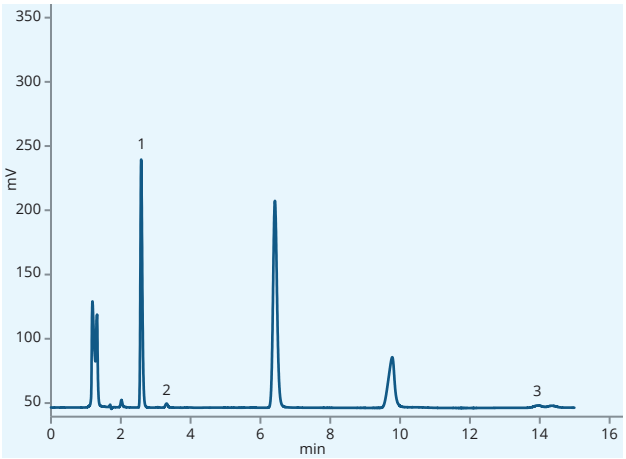
Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Methanol : water 30/70 (v/v)
Flow rate	1.0 mL/min
Temperature	30 °C
Detection	UV @280 nm
Analytes	**1. Theobromine** **2. Caffeine**

Non-nutritive sweeteners

Low-calorie sweeteners are commonly used worldwide in the food and drink industry. The list of approved sweeteners varies from country to country. The most common method used to monitor these highly consumed products involves high performance liquid chromatography (HPLC or UHPLC).



Standard mixture

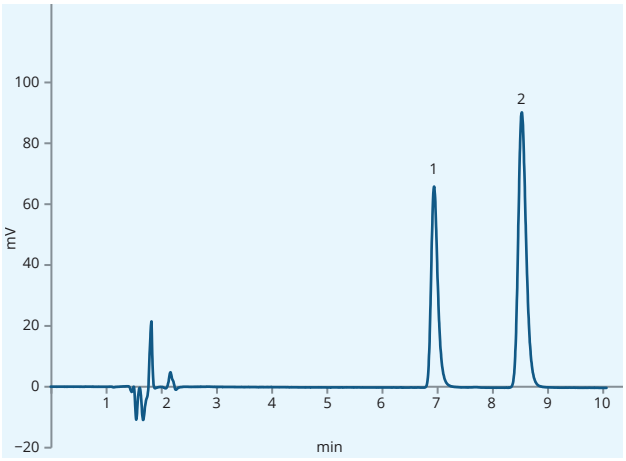


Energy drink

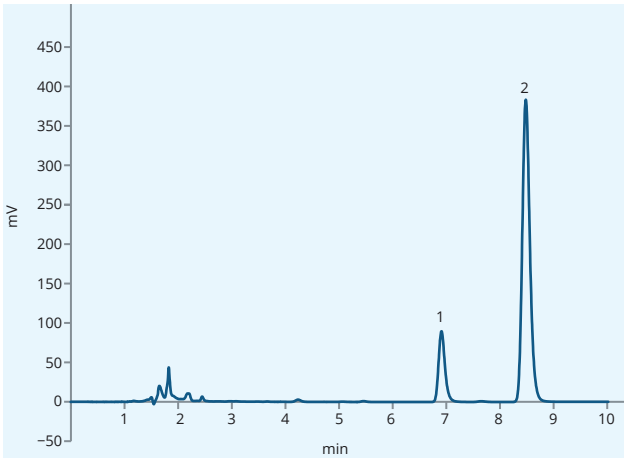
Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	20 mM KH_2PO_4 : ACN 90/10 (v/v)
Flow rate	2.0 mL/min
Temperature	30 °C
Detection	UV @220 nm
Analytes	**1. Acesulfame-K (ACS-K)** **2. Saccharin (SAC)** **3. Aspartame (ASP)**

Preservatives in syrup

Sodium and potassium salts of benzoic acid and sorbic acid are well-known food preservatives. The permitted amount in food is strictly regulated with the level depending on the food group. As an example, European regulation EC 1333/2008 sets the rules on food additives: definitions, conditions of use, labelling and procedures.



Standard mixture



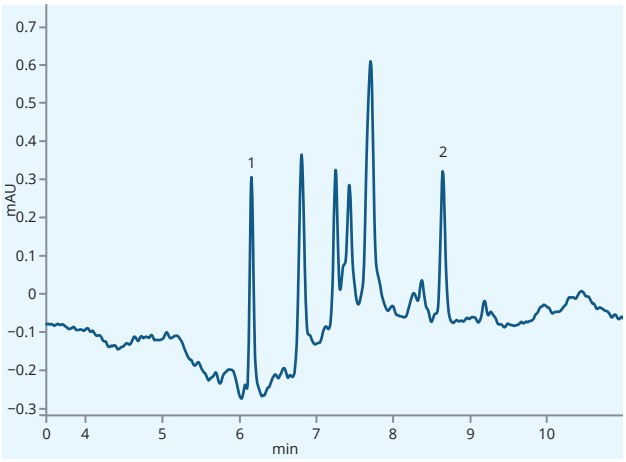
Fruit syrup sample

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Citrate buffer pH 4.1 : ACN : MeOH 70/20/10 (v/v/v)

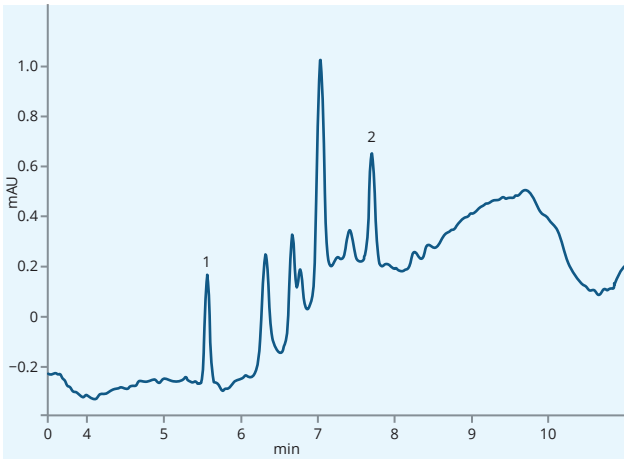
Flow rate	1.5 mL/min
Temperature	30 °C
Detection	UV @240 nm
Analytes	**1. Sodium benzoate** **2. Potassium sorbate**

Preservatives in fats and oils

BHA is used as an antioxidant and preservative in food, animal feed, cosmetics and in rubber and petroleum products. BHT is also used as a preservative and, additionally, as a dietary supplement. BHA is generally recognized as being safe for use in food if the total amount does not exceed 0.02 % fat or oil (FDA). It is suspected of being a human carcinogen.



Matrix standard on ARION® column



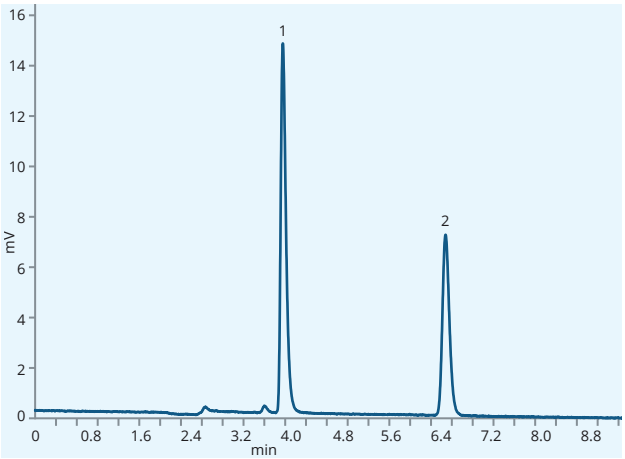
Matrix standard on competitive column (Competitor LI)

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Citrate buffer pH 4.1 : ACN : MeOH 70/20/10 (v/v/v)

Flow rate	Proprietary
Temperature	Proprietary
Detection	UV (wavelength proprietary)
Analytes	**1. BHA** **2. BHT**

Organic acids

The identification and quantitative analysis of major organic acids in fruits and vegetables is considered very important for the food and beverage industry. Organic acids play a significant role thanks to their influence on flavour, stability and keeping quality. Organic acids are generated during the aerobic oxidation of carbohydrates, proteins and fats in most biological systems.

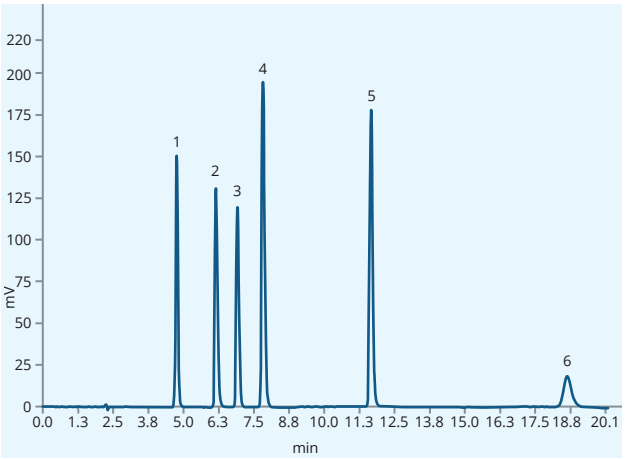


Standard mixture

Column	ARION® Polar C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5721-LM46
Mobile phase	0.05% H_3PO_4
Flow rate	1.0 mL/min
Temperature	30 °C
Detection	UV @207 nm
Analytes	**1. Formic acid** **2. Acetic acid**

Drink additives

This application shows the separation of three groups of compounds in parallel: non-nutritive sweeteners, preservatives (organic acids) and xanthine derivatives.



Standard mixture

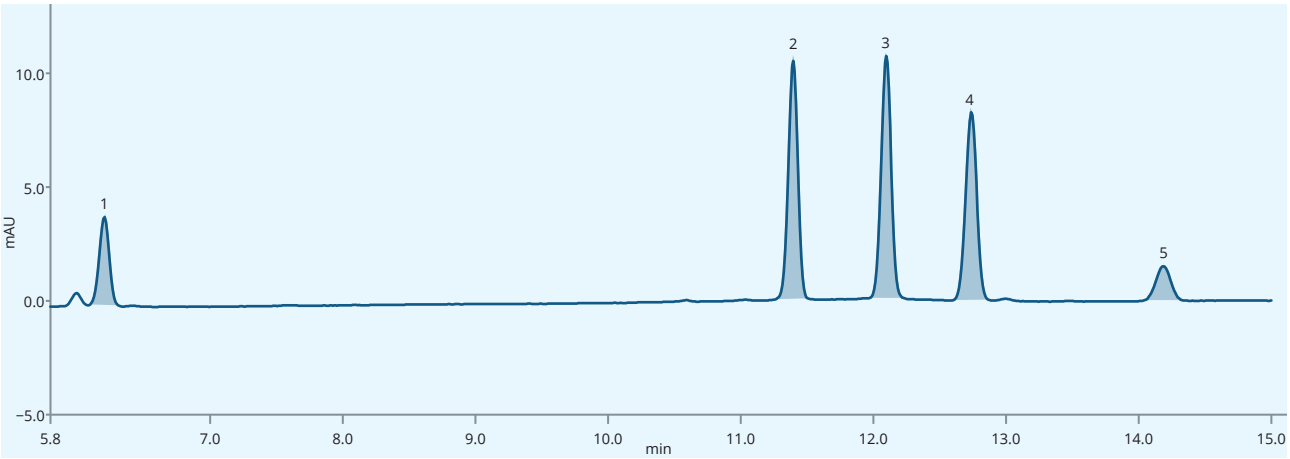
Column	ARION® Plus C18, 5.0 µm
Dimensions	150 mm × 4.6 mm
Part number	ARI-5720-LK46
Mobile phase	Acetonitril : methanol : 17.5 mmol/L KH_2PO_4 0.1 mol/L NaOH > pH=6.0 gradient according table below*
Temperature	Ambient
Detection	UV @214 & 230 nm
Analytes	**1. Acesulfame-K** **2. Benzoic acid** **3. Saccharin** **4. Sorbic acid** **5. Caffeine** **6. Aspartame**

* Gradient program

Time (min)	Flow rate (mL/min)	Wavelength (nm)	A (%) Water	B (%) 17.5 mmol KH_2PO_4	C (%) Acetonitrile	D (%) Methanol
0	1.3	230	0	90	2	8
7	1.5	214	0	80	8	12
14	1.5	214	0	80	8	12
15	1.3	214	0	90	2	8
17	1.3	214	0	90	2	8

Vitamins A and E

Fat-soluble vitamins are monitored not only in patient's samples, but are also the subject of quality control in various food and dietary supplements.

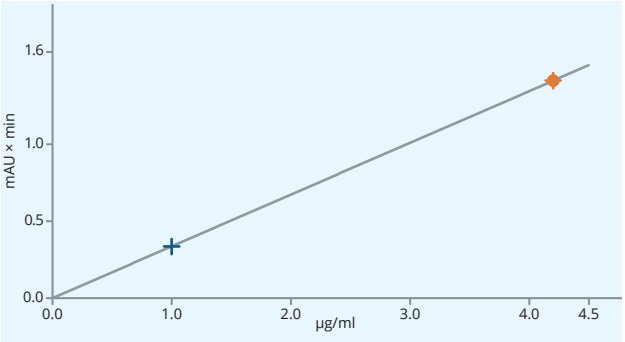


Standard on ARION® column

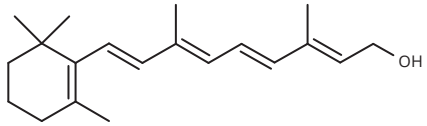
Column	ARION® Plus C18, 3 µm		
Dimensions	100 mm × 4.6 mm		
Part number	ARI-5720-II46		
Mobile phase	A: Water B: Methanol		
Gradient elution	**Time**	**A (%)**	**B (%)**
	0	15	85
	10	0	100
	18	0	100
Flow rate	1.0 mL/min		
Temperature	40 °C		
Injection volume	5.0 µL		
Detection	UV @284 nm		
Analytes	**1. Retinol (Vitamin A)** **2. Delta-tocopherol (D-Vitamin E)** **3. Gamma-tocopherol (Vitamin E γ)** **4. Alfa-tocopherol (Vitamin E α)** **5. Alpha-Tocopheryl acetate (Vitamin E acetate)**		

Vitamins A and E

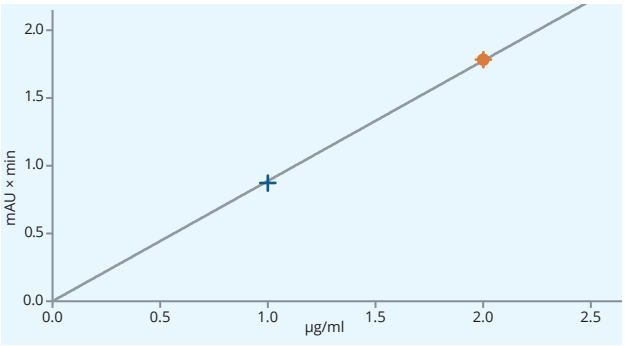
Calibration curves of analytes



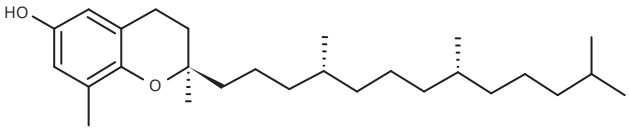
Retinol (Vitamin A)



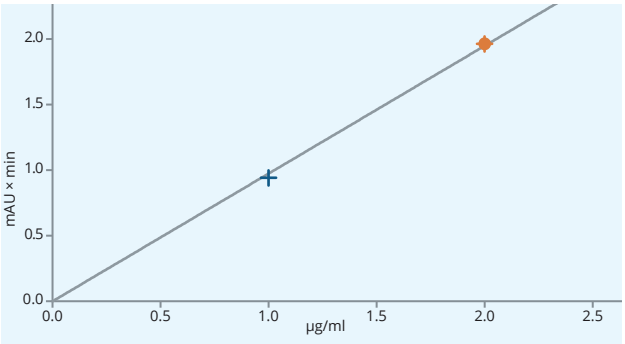
Retinol (Vitamin A)



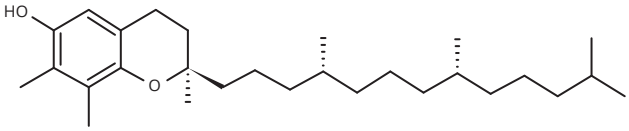
Delta-tocopherol (D-Vitamin E)



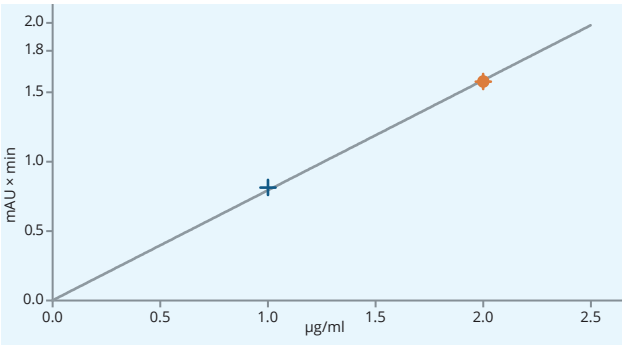
Delta-tocopherol (D-Vitamin E)



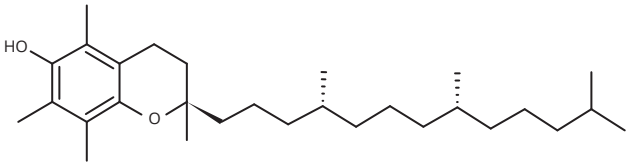
Gamma-tocopherol (Vitamin E γ)



Gamma-tocopherol (Vitamin E γ)



Alfa-tocopherol (Vitamin E α)

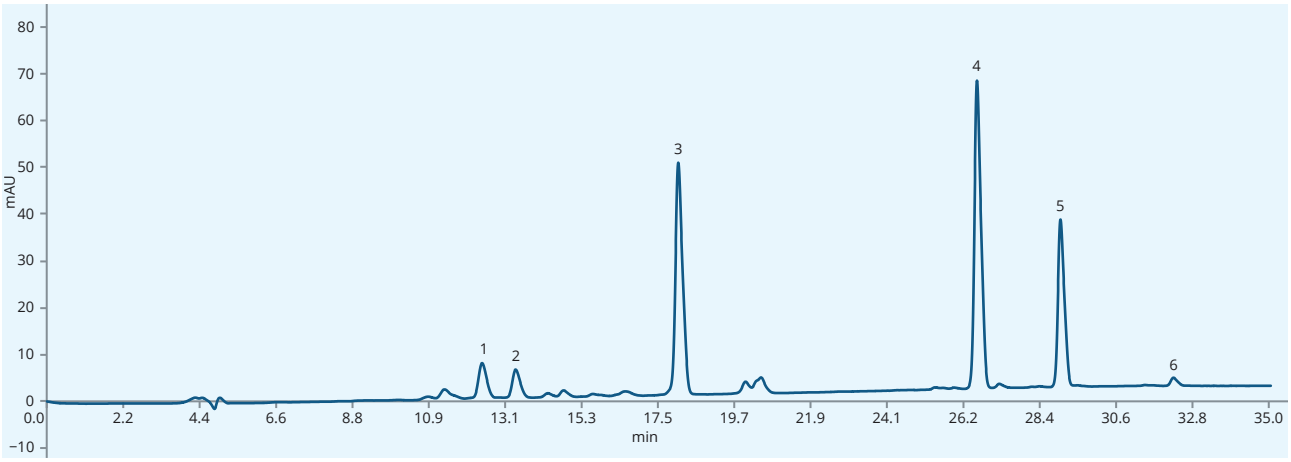


Alfa-tocopherol (Vitamin E α)

This application has been developed by WESSLING Hungary Kft.

Wheat pigments

This application has been developed by ALGATECH, the Institute of Microbiology of the Academy of Sciences, Czech Republic. Chlorophylls and carotenoids are essential cofactors for oxygenic photosynthesis. As the content and stoichiometries of individual pigments are vary significantly in plant leaves under different environmental conditions, the quantification of pigments is important for understanding plant physiology, but also for food-quality monitoring.

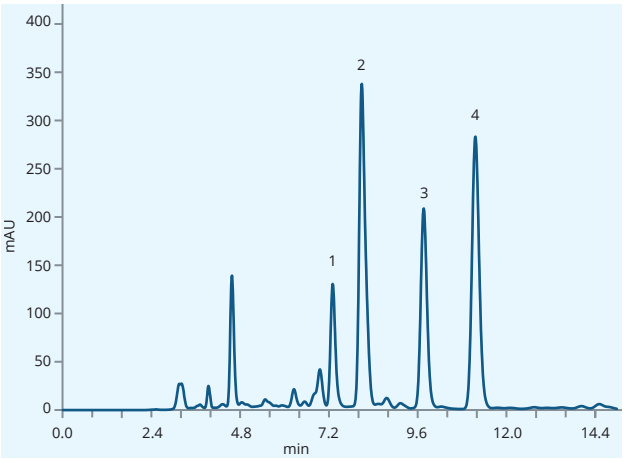


Wheat extract on ARION® column

Column	ARION® C8, 5 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5734-LM46
Mobile phase	A: Methanol : Acetonitrile : 0.25M pyridine 32/14/54 (v/v/v) B: Methanol : Acetonitrile : Acetone 20/60/20 (v/v/v)
Gradient	Linear gradient of solvent B (60–100 % in 25 min) followed by 100 % solvent B
Flow rate	0.8 mL/min
Temperature	40 °C
Detection	DAD @450 nm
Analytes	**1. Neoxanthin** **2. Violaxanthin** **3. Lutein** **4. Chlorophyll b** **5. Chlorophyll a** **6. β-Carotene**

Bitter acids in hop

Alpha-bitter acids are precursors of iso-α-bitter acids that are formed during the brewing process. They are present in hops (*Humulus Lupulus L.*) and their content depends on plant species and growing conditions. Iso-α-bitter acids give an appreciable bitter taste to the beer.

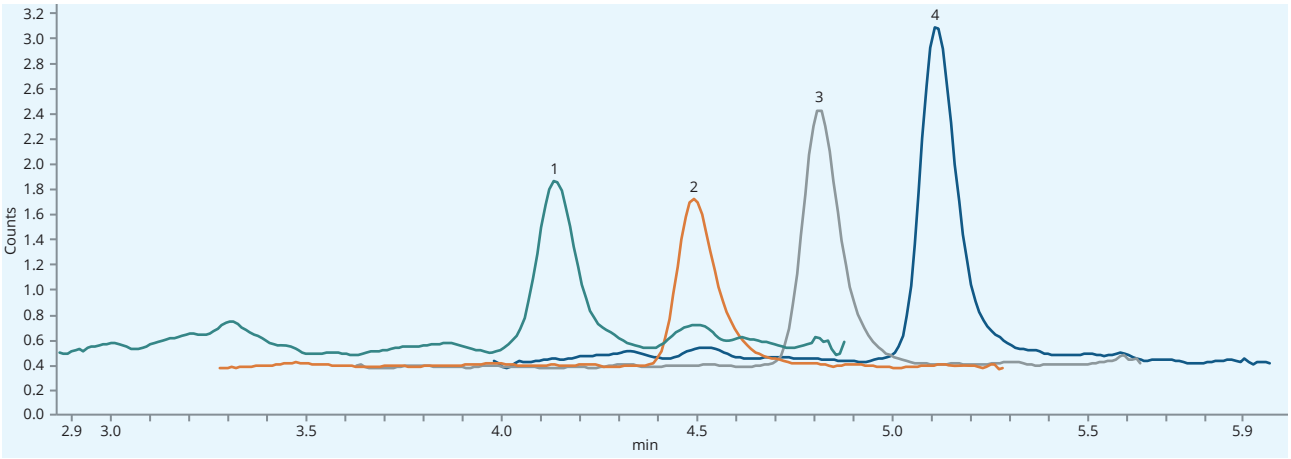


Alpha- & beta- acids in hop sample

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	MeOH : water : phospohoric acid 850/150/5 (v/v/v) Isocratic elution
Flow rate	0.8 mL/min
Temperature	40 °C
Detection	UV @314 nm
Analytes	**1. Co-humulone** **2. Humulone** **3. Co-lupulone** **4. Lupulone**

Aflatoxins by LC/MS

Aflatoxins are Group 1 carcinogens and are a natural product of mould. Mycotoxines are monitored worldwide and allowed concentration limits depend not only on the territory, but also on the food/feed matrix and are given by local administrations.

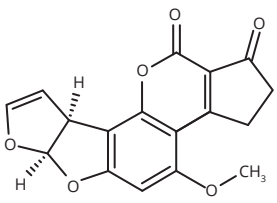


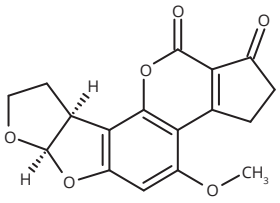
Stress test – test mixture on ARION® column

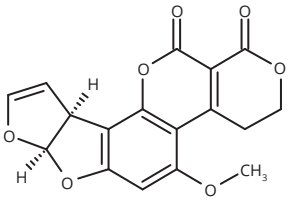
Column	ARION® Plus C18, 2.2 µm
Dimensions	100 mm × 2.1 mm
Part number	ARI-5720-EI21
Mobile phase	A: 5mM ammonium formate / 0.2% formic acid B: Methanol / 0.2% formic acid
Gradient elution	**Time** **A (%)** 0.0 70 0.5 70 8.0 0 10.5 0 10.6 70
Flow rate	0.35 mL/min
Temperature	40 °C
Analytes	**1. Aflatoxin B1** **2. Aflatoxin B2** **3. Aflatoxin G1** **4. Aflatoxin G2**

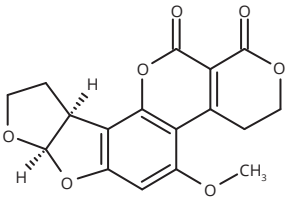
MS method:

Compound name	Precursor Ion	Product Ion	Collision energy
Aflatoxin B1	313.07	284.9	25
Aflatoxin B1	313.07	240.9	45
Aflatoxin B2	315.09	286.9	33
Aflatoxin B2	315.09	259	33
Aflatoxin G1	329.07	310.9	25
Aflatoxin G1	329.07	198.9	57
Aflatoxin G2	331.08	312.9	25
Aflatoxin G2	331.08	189.1	49


Aflatoxin B1

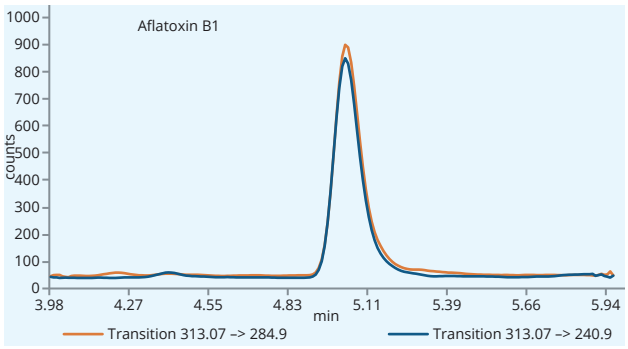

Aflatoxin B2

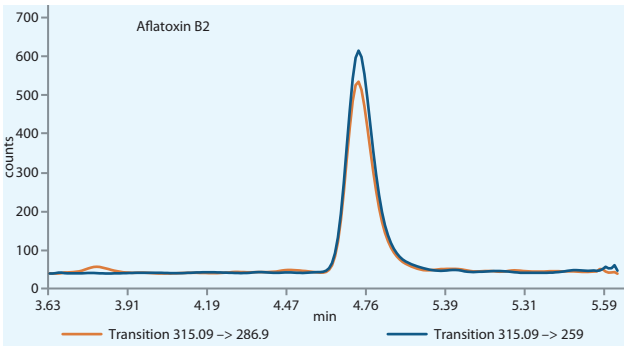

Aflatoxin G1

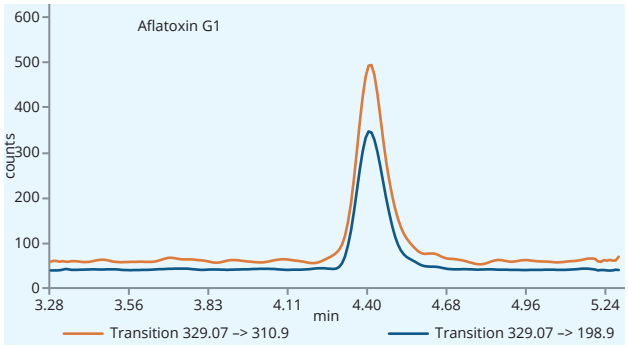

Aflatoxin G2

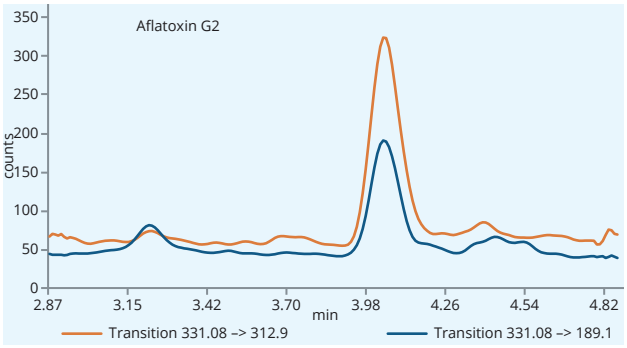
Aflatoxins by LC/MS

This page shows analyses of peppers and Brazil nuts.

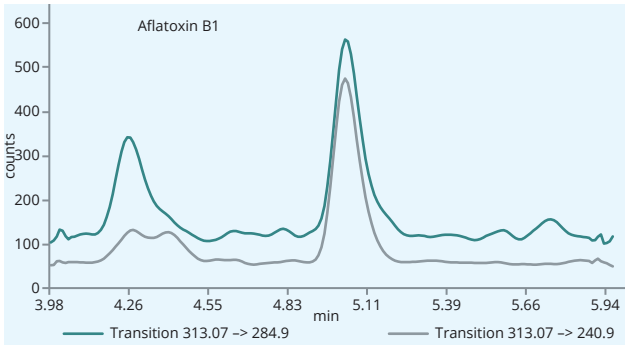


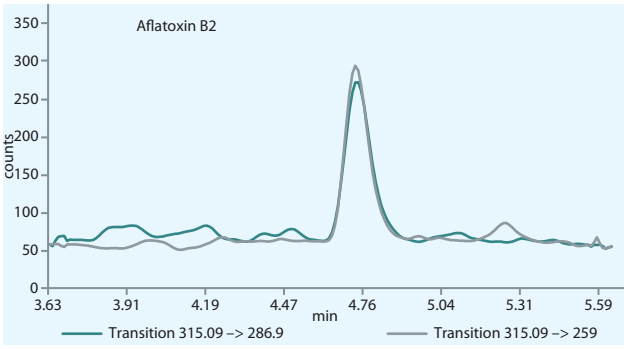


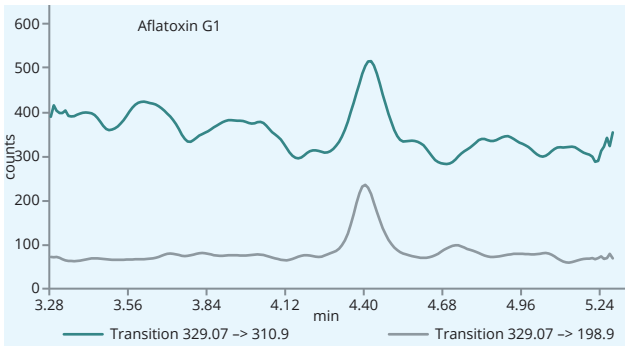


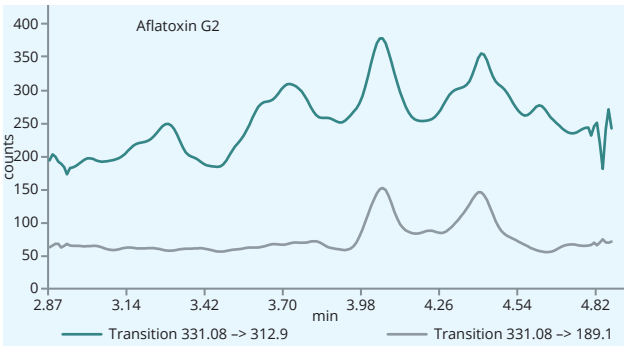


LC/MS analyses of aflatoxins in Brazil nuts





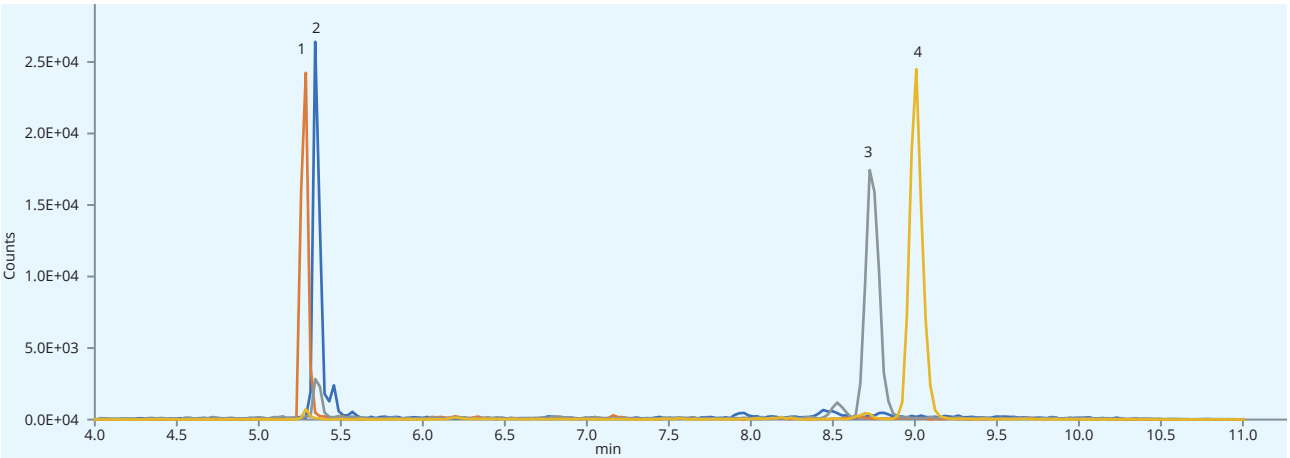




LC/MS analyses of aflatoxins in peppers

Vitamin D in dry blood spot

Vitamin D is a group of steroids that have various effects on the human body and support the immune system. This application shows LC/MS/MS separation of the hydroxylated and non-hydroxylated forms of vitamin D2 and vitamin D3. The amount of their hydroxylated forms determines the total vitamin D in a blood sample. Non-hydroxylated forms of vitamin D2 and vitamin D3 are important for food analysis. The LC/MS/MS chromatogram shows the separation of all the above mentioned analytes.



Standard mixture on ARION® column

Chromatography method:

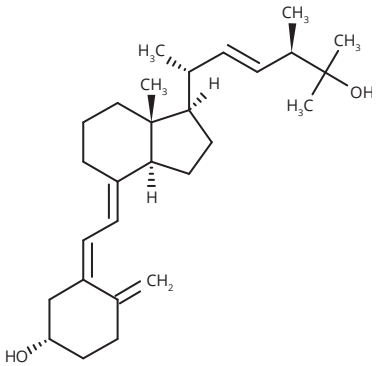
Column	ARION® Polar C18, 2.2 µm		
Dimensions	100 mm × 2.1 mm		
Part number	ARI-5720-EI21		
Mobile phase	A: H_2O, 0.1% formic acid B: MeOH, 0.1% formic acid		
Gradient elution	**Time**	**A (%)**	**B (%)**
	0.0	70	30
	2.0	0	100
	7.0	0	100
	7.1	30	70
	12.0	30	70
Flow rate	0.4 mL/min		
Temperature	25 °C		
Injection volume	10 µL		
Detection	UV @280 nm		
Analytes	**1. 25-OH-Vitamin D3** **2. 25-OH-Vitamin D2** **3. Vitamin D2** **4. Vitamin D3**		

Vitamin D in dry blood spot

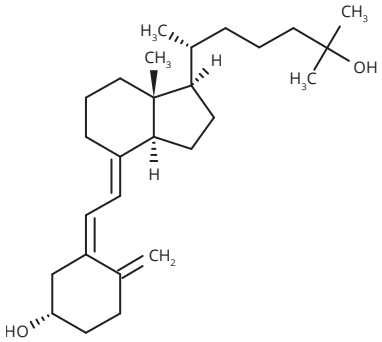
MS method:

Ionisation	Positive APCI		
Collision gas	Nitrogen		
MRM transition	**Analyte**	**Q1 (Da)**	**Q3 (Da)**
	25-OH-Vitamin D2	413.32	395.30
	25-OH-Vitamin D3	401.22	365.40
	Vitamin D2	397.44	379.20
	Vitamin D3	385.32	259.40
Dwell time	150 ms		

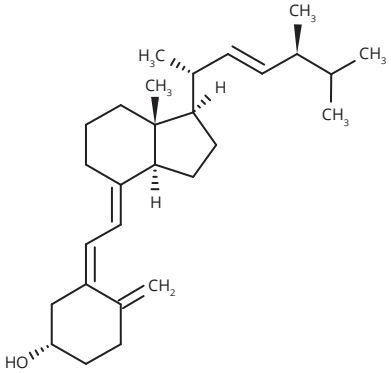
This application was developed by Ján Šmoldas.



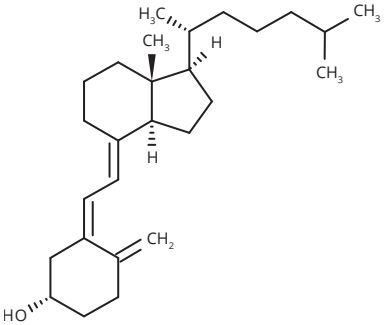
25-OH-Vitamin D2



25-OH-Vitamin D3



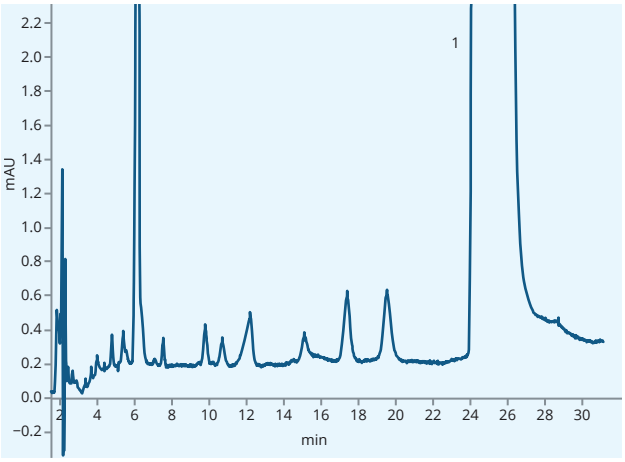
Vitamin D2



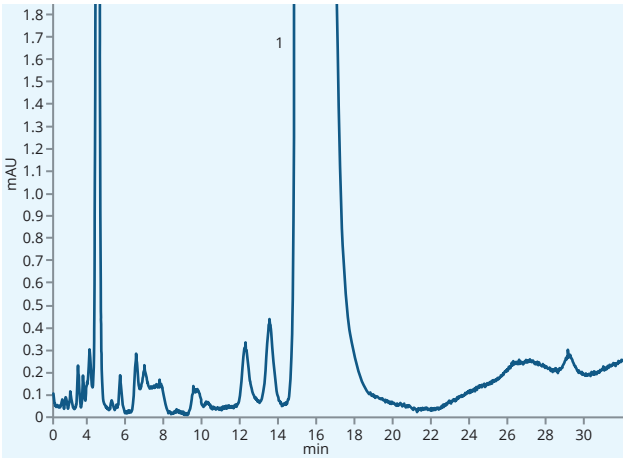
Vitamin D3

Pharmaceutical drugs

Penicillin is a well known antibiotic discovered by Alexander Fleming, which was isolated from the mold *Penicillium notatum*. The application shows better separation of impurities in pharmaceutical production.



Separation on ARION® column

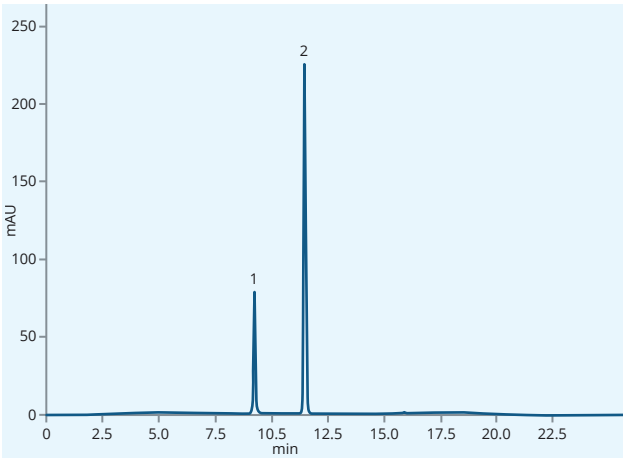


Separation on competitive column (Competitor LI)

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Gradient elution (proprietary)
Flow rate	1.2 mL/min
Detection	UV @254 nm
Analytes	**1. Penicillin**

Ipidacrine

Ipidacrine is a drug inhibitor of acetylcholinesterase produced for the treatment of memory disorders caused by various diseases. It was first synthetized by the National Research Centre for Biologically Active Compounds (Russian Federation).

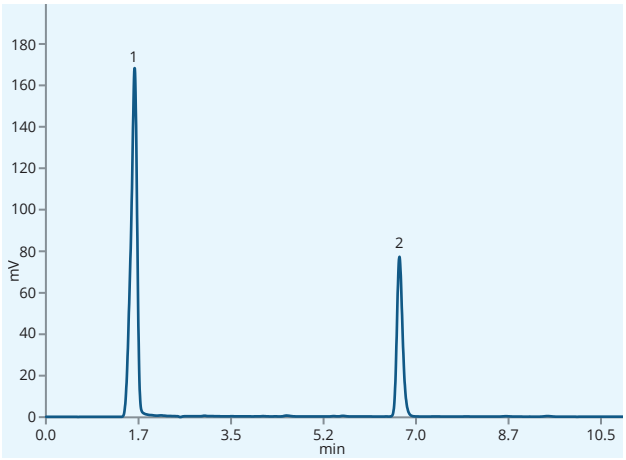


Standard mixture

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Proprietary
Flow rate	Proprietary
Temperature	Proprietary
Detection	DAD
Analytes	**1. Impurity A** **2. Ipidacrine**

Ibuprofen

Ibuprofen is a substance from a group of non-steroidal anti-inflammatory drugs. In order for the drug release to be targeted on the basis of pH change (gradual release for up to 30 days), binding to a polymeric carrier is used.

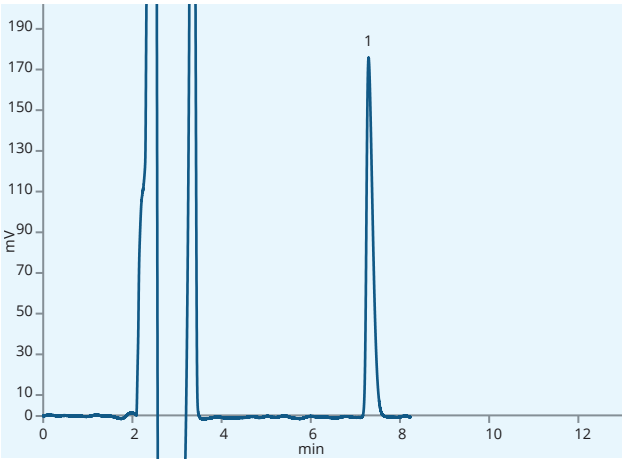


Standard mixture

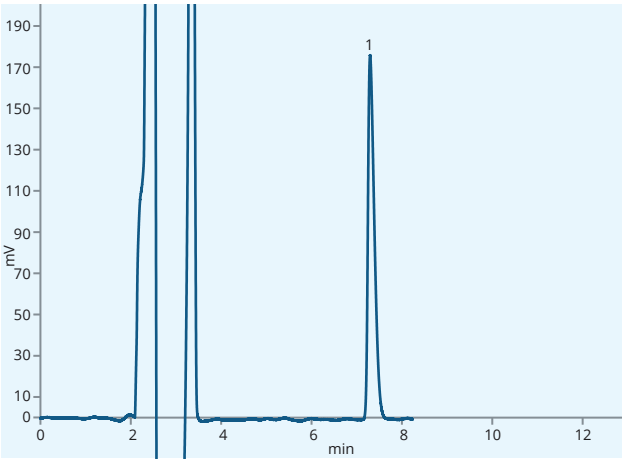
Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	ACN : water 70/30 (v/v) + 0.1% formic acid Isocratic elution
Flow rate	1.0 mL/min
Temperature	Ambient
Detection	UV @265 nm
Analytes	**1. Ibuprofen on polymer carrier** **2. Ibuprofen**

Pharmaceutical drugs

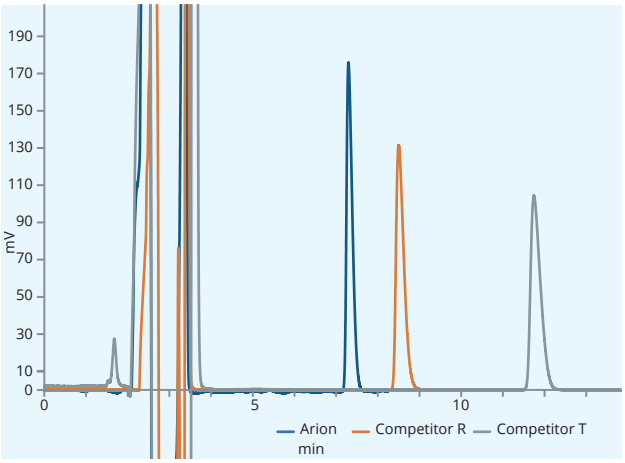
Tamsulosin hydrochloride is used to treat the symptoms of an enlarged prostate. Tamsulosin hydrochloride is an alpha-blocker which is used to treat the symptoms of an enlarged prostate by relaxing the muscles of the prostate and bladder. Tamsulosin is sold under various trade names, e.g. Flomax, Urimax, Contiflo XL, Mesir LP, Prostanil MR, Tamsin and Fokusin. Shown below is a chromatogram of the determination of the tamsulosin hydrochloride content according to the proprietary method.



Standard mixture



Drug sample

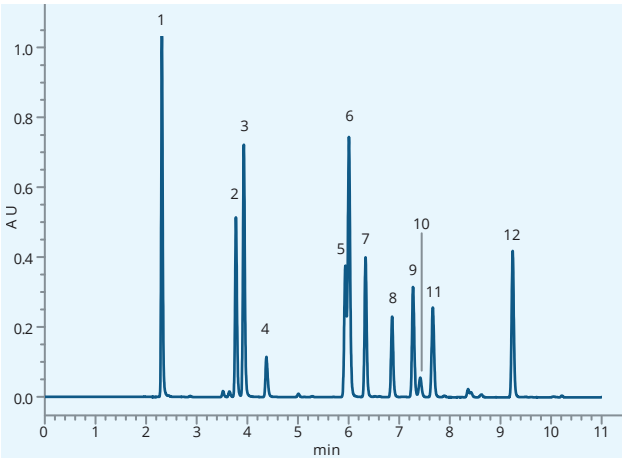


Comparison of fully porous particles

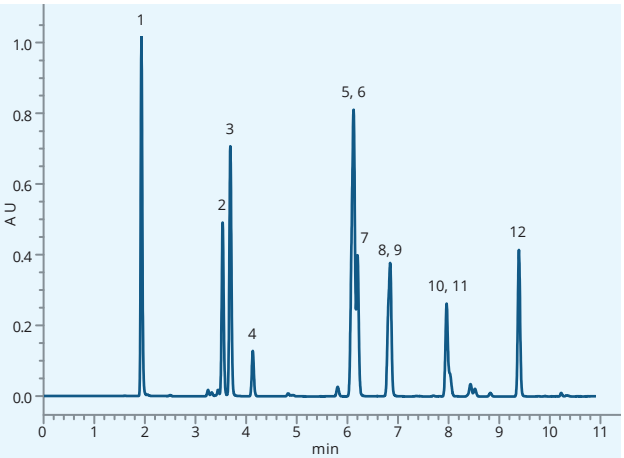
Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Acetate buffer : acetonitrile
Flow rate	1.0 mL/min
Temperature	30 °C
Detection	UV @225 nm
Analytes	**1. Tamsulosin hydrochloride**

Fluorinated compounds

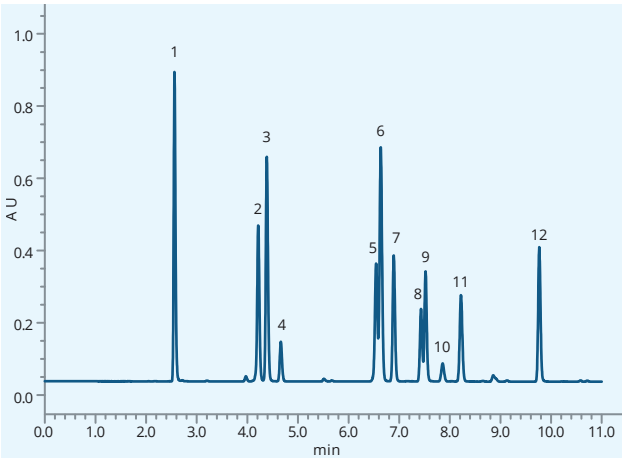
This application shows the ARION® column overcomes a co-elution of two critical pairs of fluoro- and des-fluoro-compounds. Separation of these compounds is problematic in general.



Sample on ARION® column



Sample on Competitive hybrid column TE

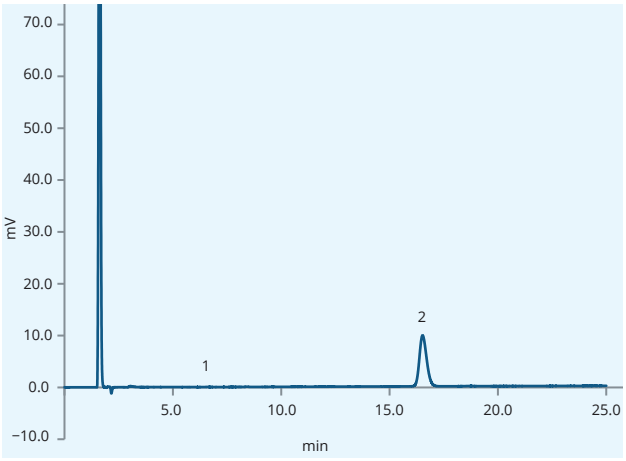


Sample on Competitive hybrid column TS

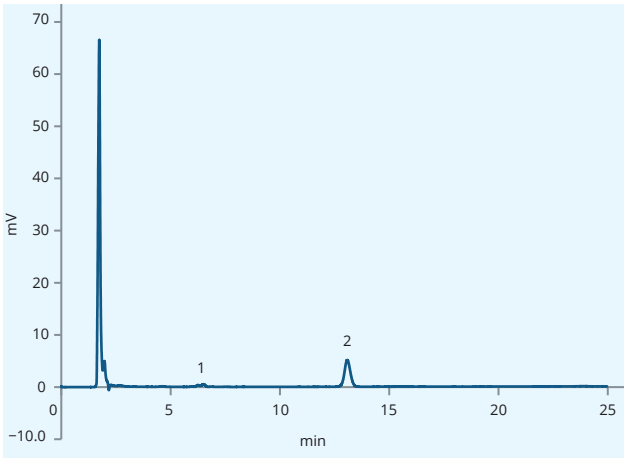
Column	ARION® Plus C18, 3.0 µm		
Dimensions	150 mm × 4.6 mm		
Part number	ARI-5720-IK46		
Mobile phase	A: 0.1% formic acid (dissolve 1 mL of formic acid in 1000 mL of Milli-Q water) B: ACN		
Gradient elution	**Time**	**A (%)**	**B (%)**
	0	60	40
	9	20	80
	10	5	95
	14	5	95
	14.1	60	40
	15.5	60	40
Flow rate	1.0 mL/min		
Temperature	30 °C		
Detection	UV @275 nm		
Analytes	**5. Fluoro-compound** **6. Fluoro-compound** **7. Des-fluoro-compound** **8. Des-fluoro-compound** **All other compounds are confidential.**		

Veterinary drugs

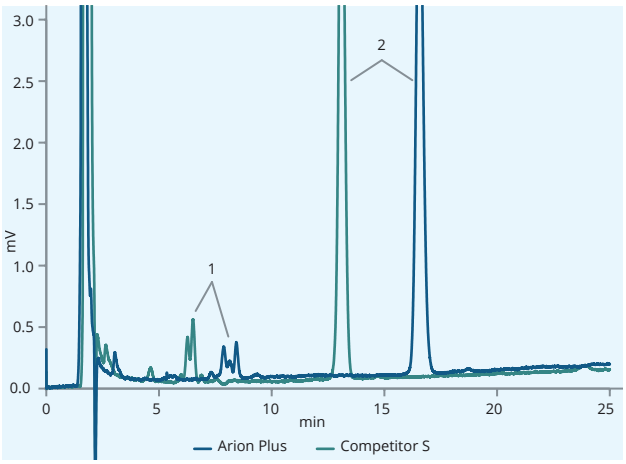
Tiamulin hydrogen fumarate is a semisynthetic drug with an antibacterial effect. It is used to treat animal diseases, such as swine dysentery (caused by *Brachyspira hyodysenteriae*), swine pneumonia or mycoplasmal arthritis. Tiamulin is also used for the prevention and treatment of chronic respiratory diseases in domestic chickens and turkeys.



Sample – 2% premix on ARION® column



Sample – 2% premix on competitive column (Competitor S)

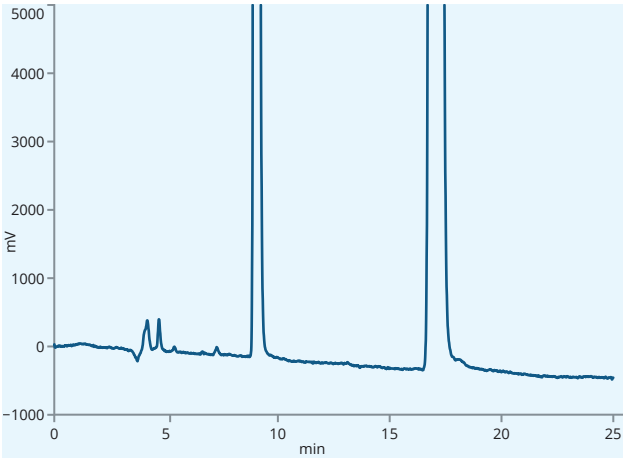


Detailed view on impurities

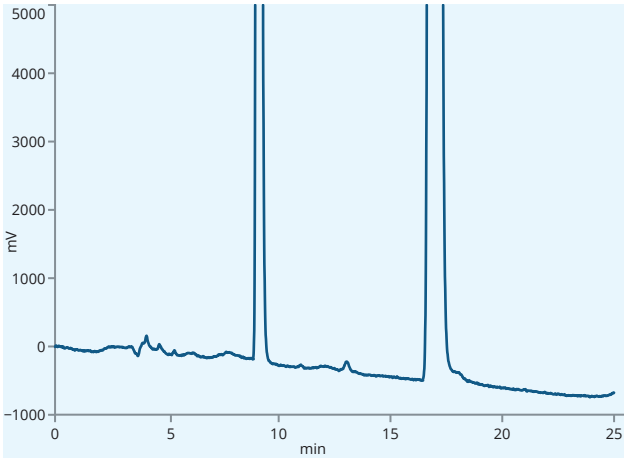
Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	Confidential, optimized method of Czech Pharmacopoeia (2017, 6.0:1659)
Analytes	**1. Impurities** **2. Tiamulin hydrogen fumarate**

Veterinary drugs

Trimetoprim and Sulfamethazine are veterinary drugs used to treat animals of various species with gastrointestinal and respiratory tract infections. This drug is used in diseases of various species of animals.



Standard on ARION® column



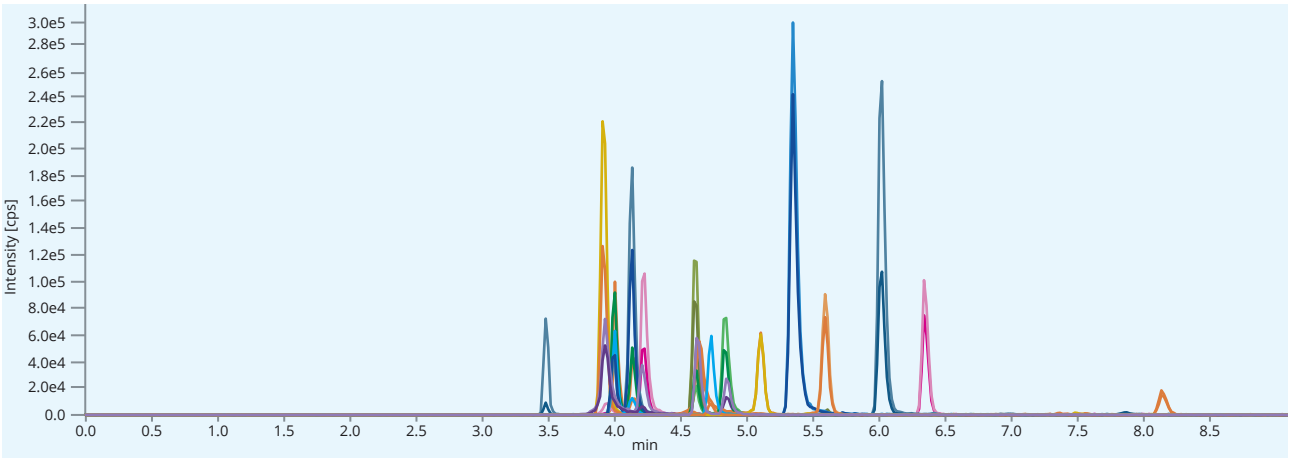
Drug sample

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm × 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	0.1% TEA : Methanol : ACN 80/10/10 (v/v/v) Isocratic elution
Flow rate	1.0 mL/min
Temperature	40 °C
Detection	UV @254 nm
Analytes	**1. Trimetoprim** **2. Sulfamethazine sodium**

Opioids and Tramadol and their metabolites by LC/MS

This application shows the LC/MS method for the most common opiates and their metabolites analyzed by toxicological labs.

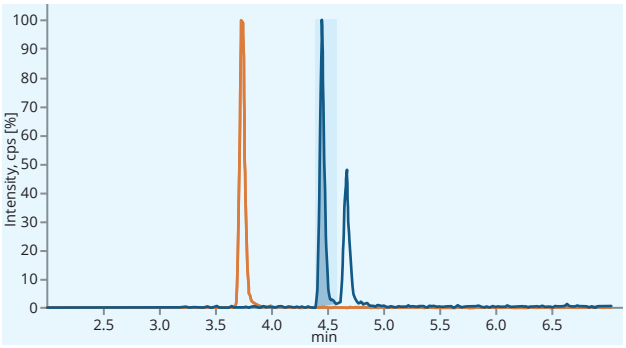
Substance	**Codeine**, CAS Number 76-57-3 **Morphine**, CAS Number 57-27-2 **6-O-Acetylmorphine**, **6-Monoacetylmorphine**, CAS Number 2784-73-8 **Morphine-6-glucuronide**, CAS Number 20290-10-2 **Buprenorphine**, CAS Number 52485-79-7 **Dihydrocodeine**, CAS Number 125-28-0 **Fentanyl**, CAS Number 437-38-7 **Acetylfentanyl**, CAS Number 3258-84-2 **Naloxone**, CAS Number 465-65-6 **Naltrexone**, CAS Number 16590-41-3	**Hydromorphone**, CAS Number 466-99-9 **Oxymorphone**, CAS Number 76-41-5 **Hydrocodone**, CAS Number 125-29-1 **Norbuprenorphine**, CAS Number 78715-23-8 **Norcodeine**, CAS Number 467-15-2 **Norfentanyl**, CAS Number 1609-66-1 **Oxycodone**, CAS Number 76-42-6 **Meperidine**, **Pethidine**, CAS Number 57-42-1 **Tramadol**, CAS Number 27203-92-5 **Methadone**, CAS Number 76-99-3 **EDDP**, CAS Number 30223-73-5



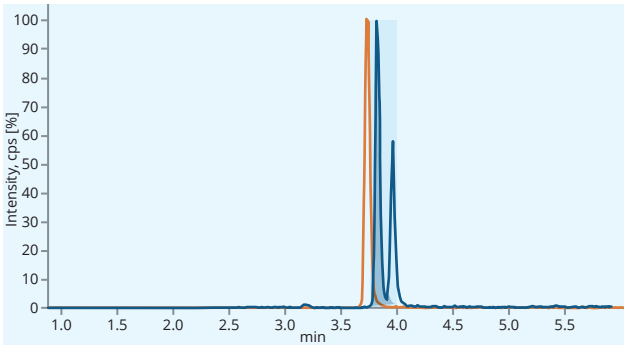
Standard mixture on ARION® column (50 mg/L)

Opioids and Tramadol and their metabolites by LC/MS

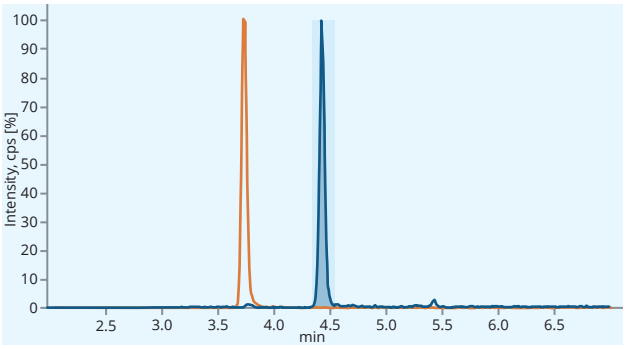
Column	ARION® Plus C18, 3 µm		
Dimensions	50 mm × 3.0 mm		
Part number	ARI-5720-IG30		
Mobile phase	A: 1% ammonium formate in water B: Methanol : 1% ammonium formate in ACN 50/50 (v/v)		
Gradient elution	**Time**	**A (%)**	**B (%)**
	0	100	0
	1	100	0
	6	10	90
	8	10	90
	8.1	100	0
Flow rate	0.5 mL/min		
Temperature	30 °C		
Detection	MS/MS		
Analytes	**See MS/MS method**		



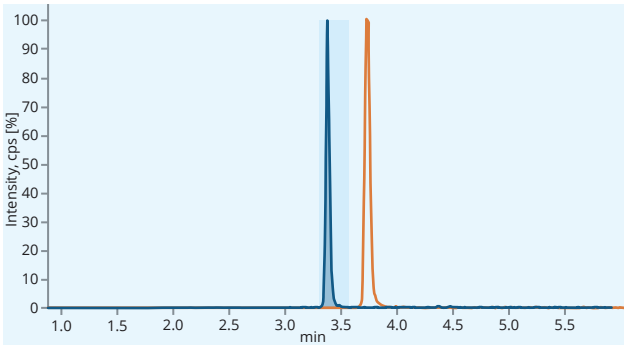
Codeine (300.1->152.0)



Morphine (286.1 -> 152.0)

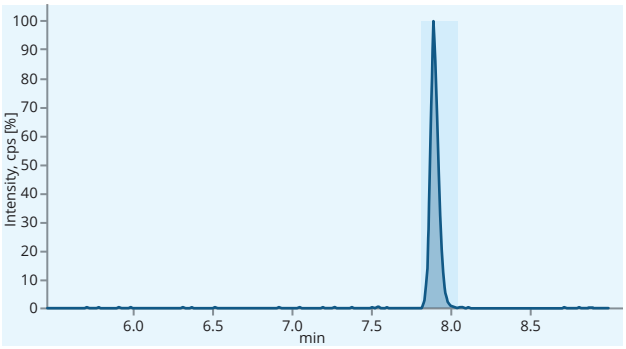


6-O-Acetylmorphine (328.1 -> 165.0)

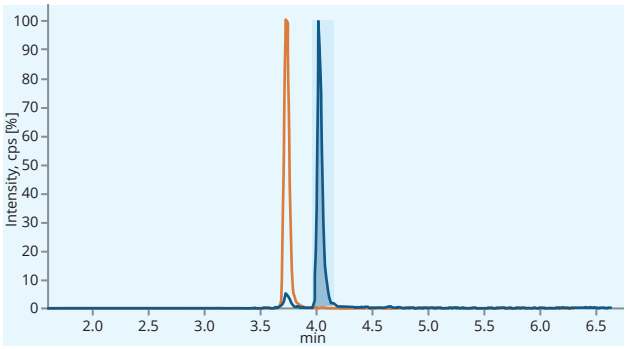


Morphine-6-glucuronide (462.2 -> 286.2)

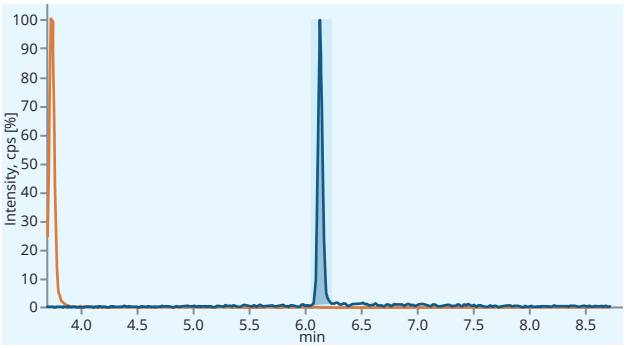
Opioids and Tramadol and their metabolites by LC/MS



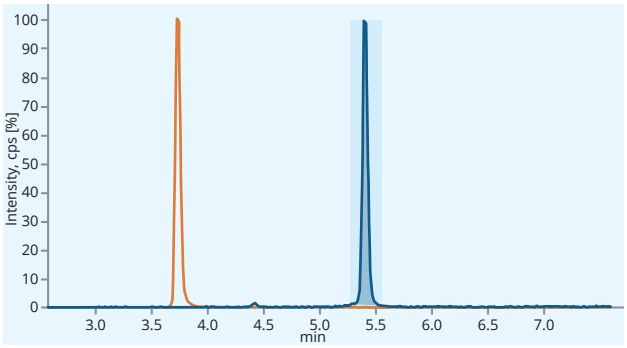
Buprenorphine (468.2 -> 396.0)



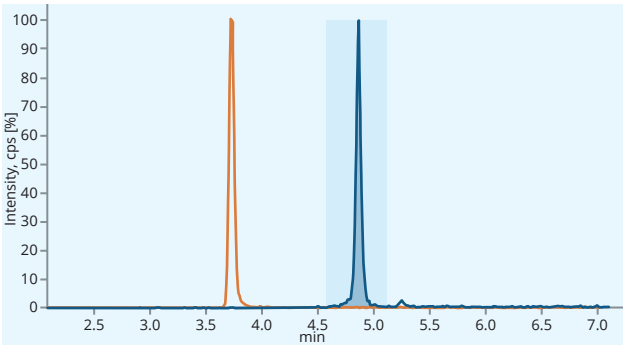
Dihydrocodeine (302.2 -> 199.2)



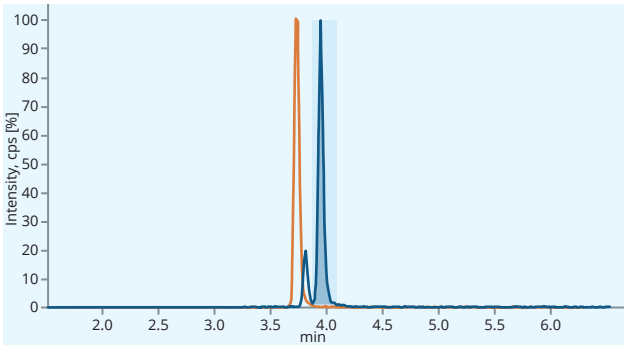
Fentanyl (337.2 -> 105.1)



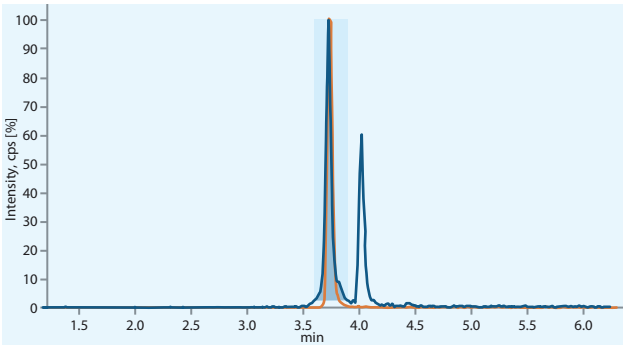
Naloxone (328.1 ->212.1)



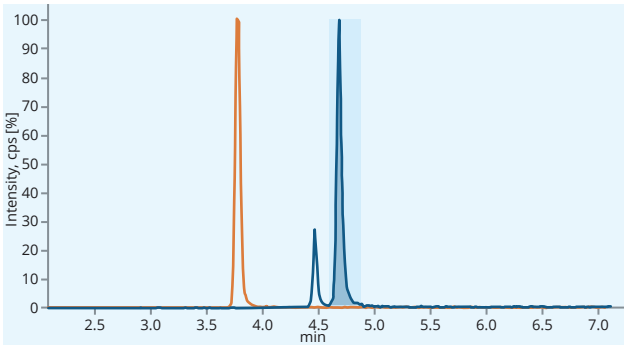
Naltrexone (342.1 -> 267.2)



Hydromorphone (286.1 -> 185.0)

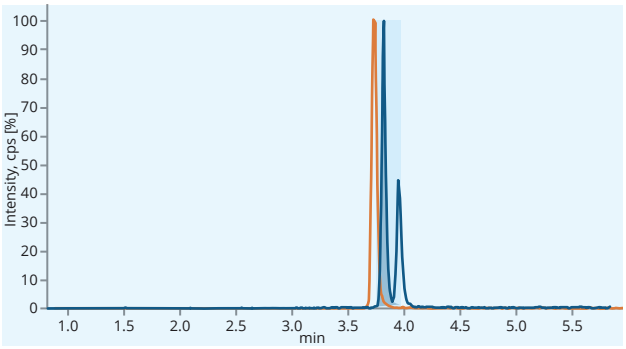


Oxymorphone (302.0 -> 227.1)

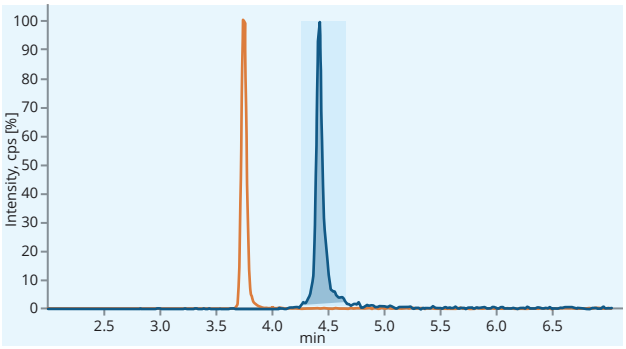


Hydrocodone (300.1 -> 199.0)

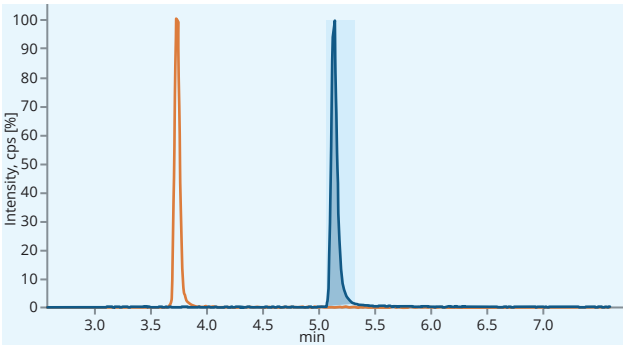
Opioids and Tramadol and their metabolites by LC/MS



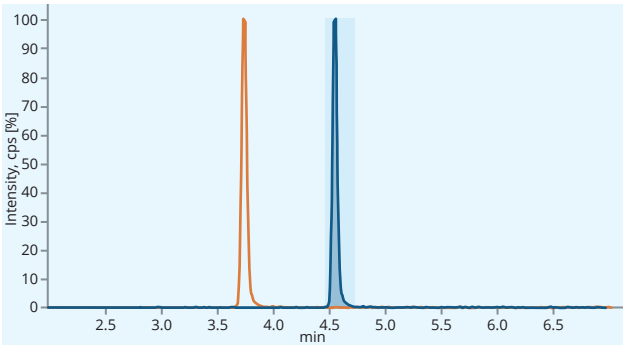
Norcodeine (286.1 -> 152.0)



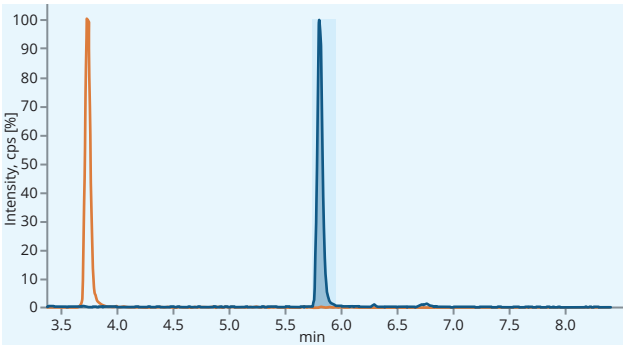
Oxycodone (316.1 -> 241.1)



Meperidine (Pethidine) (248.1 -> 220.1)



Tramadol (264.1 -> 58.1)



Methadone (310.1 -> 265.0)

Opioids and Tramadol and their metabolites by LC/MS

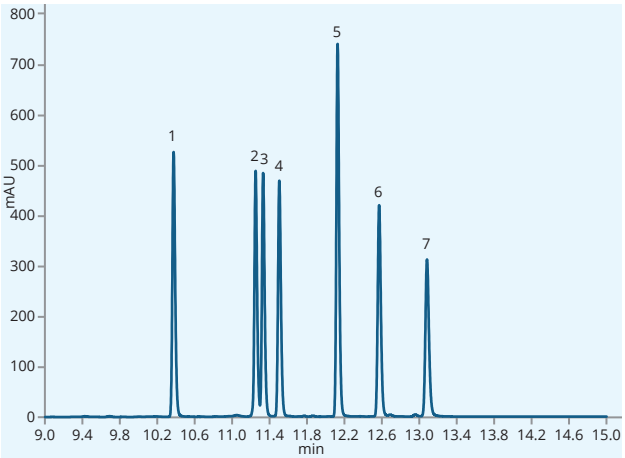
MS/MS method

Compound name	Precursor mass	Fragment mass	Type	Collision energy
Codeine	300.1	152.0	Quantifier	35 ± 15 eV
	300.1	165.1	Qualifier	35 ± 15 eV
Morphine	286.1	152.0	Quantifier	35 ± 15 eV
	286.1	165.1	Qualifier	35 ± 15 eV
6-O-Acetylmorphine	328.1	165.0	Quantifier	35 ± 15 eV
	328.1	211.0	Qualifier	35 ± 15 eV
Morphine-6-glucuronide	462.2	286.2	Qualifier	35 ± 15 eV
	462.2	201.1	Qualifier	35 ± 15 eV
Buprenorphine	468.2	396.0	Quantifier	35 ± 15 eV
	468.2	414.0	Qualifier	35 ± 15 eV
Dihydrocodeine	302.2	199.2	Quantifier	35 ± 15 eV
	302.2	171.2	Qualifier	35 ± 15 eV
Fentanyl	337.2	105.1	Quantifier	35 ± 15 eV
	337.2	188.2	Qualifier	35 ± 15 eV
Acetylfentanyl*	323.1	188.1	Quantifier	35 ± 15 eV
	323.1	105.1	Qualifier	35 ± 15 eV
Naloxone	328.1	212.1	Quantifier	35 ± 15 eV
	328.1	253.1	Qualifier	35 ± 15 eV
Naltrexone	342.1	267.2	Quantifier	35 ± 15 eV
	342.1	282.1	Qualifier	35 ± 15 eV
Hydromorphone	286.1	185.0	Quantifier	35 ± 15 eV
	286.1	157.0	Qualifier	35 ± 15 eV
Oxymorphone	302.0	227.1	Quantifier	35 ± 15 eV
	302.0	198.1	Qualifier	35 ± 15 eV
Hydrocodone	300.1	199.0	Quantifier	35 ± 15 eV
	300.1	128.0	Qualifier	35 ± 15 eV
Norbuprenorphine*	414.3	55.0	Quantifier	35 ± 15 eV
	414.3	83.0	Qualifier	35 ± 15 eV
Norcodeine	286.1	152.0	Quantifier	35 ± 15 eV
	286.1	165.0	Qualifier	35 ± 15 eV
Norfentanyl*	233.1	84.1	Quantifier	35 ± 15 eV
	233.1	150.1	Qualifier	35 ± 15 eV
Oxycodone	316.1	241.1	Quantifier	35 ± 15 eV
	316.1	256.1	Qualifier	35 ± 15 eV
Meperidine (Pethidine)	248.1	220.1	Quantifier	35 ± 15 eV
	248.1	174.0	Qualifier	35 ± 15 eV
Tramadol	264.1	58.1	Quantifier	35 ± 15 eV
	264.1	42.2	Qualifier	35 ± 15 eV
Methadone	310.1	265.0	Quantifier	35 ± 15 eV
	310.1	105.0	Qualifier	35 ± 15 eV
EDDP*	278.1	234.1	Quantifier	35 ± 15 eV
	278.1	186.1	Qualifier	35 ± 15 eV

* Not shown in chromatogram.
Note: Internal standard: Morphine D6.

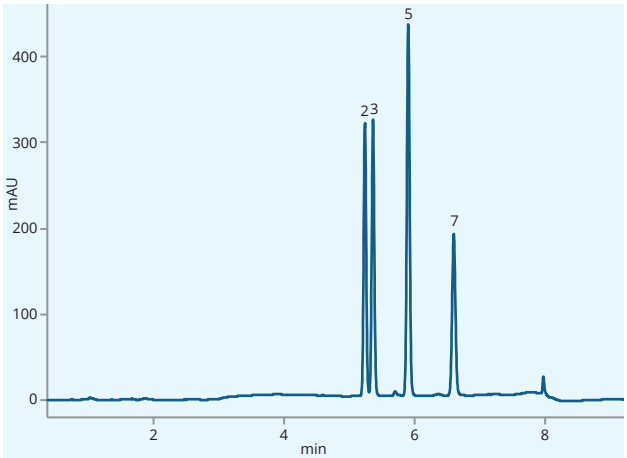
Cannabinoids

Cannabinoids have became more and more popular thanks to their heath effects and the decriminalisation of their use. Analytical columns that can offer a suitable resolution play an important role. The challenge is to achieve the separation of the critical pair – CBD and CBG.



Standard on ARION® Plus C18, 1.7 µm

Columns	ARION® Plus C18, 1.7 µm		
Dimensions	100 mm × 2.1 mm		
Part numbers	ARI-5720-BI21		
Mobile phase	A: Water B: Acetonitrile		
Gradient elution	**Time**	**A (%)**	**B (%)**
	0	70	30
	1	70	30
	5	50	50
	10	10	90
	13	10	90
	14	70	30
	16	70	30
Flow rate	0.3 mL/min		
Temperature	30 °C		
Detection	DAD @220 nm		
Analytes	**1. CBDV** **2. CBG** **3. CBD** **4. THCV** **5. CBN** **6. THC** **7. CBC**		



Fast method – standard on ARION® Plus C18, 3.0 µm

Columns	ARION® Plus C18, 3.0 µm		
Dimensions	150 mm × 4.6 mm		
Part numbers	ARI-5720-IK46		
Mobile phase	A: Acetonitrile B: Water with formic acid (0.1%)		
Gradient elution	**Time**	**A (%)**	**B (%)**
	0	30	70
	0.3	30	70
	2.3	100	0
	5.3	100	0
	8.3	30	70
	11.0	30	70
Flow rate	1.0 mL/min		
Temperature	40 °C		
Injection volume	20 µL		
Detection	DAD @220 nm		
Analytes	**2. CBG** **3. CBD** **5. CBN** **7. CBC**		

lipomed SERVICES TO HEALTH

The analyses were performed using Lipomed reference materials.

Ordering information

UHPLC and LC/MS columns

1.7 µm ARION® all dimensions in mm							**ARION® Guard Cartridges***
Phase		**30 × 2.1**	**50 × 2.1**	**75 × 2.1**	**100 × 2.1**	**150 × 2.1**	**5 × 2.1**
Plus C18		ARI-5720-BD21	ARI-5720-BG21	ARI-5720-BH21	ARI-5720-BI21	ARI-5720-BK21	AGS-5731-RA2

1.7 µm ARION® all dimensions in mm						**ARION® Guard Cartridges***
Phase		**50 × 3.0**	**75 × 3.0**	**100 × 3.0**	**150 × 3.0**	
Plus C18		ARI-5720-BG30	ARI-5720-BH30	ARI-5720-BI30	ARI-5720-BK30	Inquire**

1.7 µm ARION® all dimensions in mm						**ARION® Guard Cartridges***
Phase		**50 × 4.6**	**75 × 4.6**	**100 × 4.6**	**150 × 4.6**	**5 × 4.0**
Plus C18		ARI-5720-BG46	ARI-5720-BH46	ARI-5720-BI46	ARI-5720-BK46	Inquire**

2.2 µm ARION® all dimensions in mm							**ARION® Guard Cartridges***
Phase		**30 × 2.1**	**50 × 2.1**	**75 × 2.1**	**100 × 2.1**	**150 × 2.1**	**5 × 2.1**
Plus C18		ARI-5720-ED21	ARI-5720-EG21	ARI-5720-EH21	ARI-5720-EI21	ARI-5720-EK21	AGS-5731-RB2
Polar C18		ARI-5721-ED21	ARI-5721-EG21	ARI-5721-EH21	ARI-5721-EI21	ARI-5721-EK21	AGS-5731-RB2
Phenyl-Butyl		ARI-5735-ED21	ARI-5735-EG21	ARI-5735-EH21	ARI-5735-EI21	ARI-5735-EK21	AGS-5731-RB2
NH_2		ARI-5736-ED21	ARI-5736-EG21	ARI-5736-EH21	ARI-5736-EI21	ARI-5736-EK21	AGS-5731-CB2
HILIC Plus		ARI-5738-ED21	ARI-5738-EG21	ARI-5738-EH21	ARI-5738-EI21	ARI-5738-EK21	AGS-5731-HB2
Si		ARI-5739-ED21	ARI-5739-EG21	ARI-5739-EH21	ARI-5739-EI21	ARI-5739-EK21	AGS-5731-NB2

2.2 µm ARION® all dimensions in mm						**ARION® Guard Cartridges***
Phase		**50 × 3.0**	**75 × 3.0**	**100 × 3.0**	**150 × 3.0**	**5 × 2.1**
Plus C18		ARI-5720-EG30	ARI-5720-EH30	ARI-5720-EI30	ARI-5720-EK30	AGS-5731-RB2
Polar C18		ARI-5721-EG30	ARI-5721-EH30	ARI-5721-EI30	ARI-5721-EK30	AGS-5731-RB2
Phenyl-Butyl		ARI-5735-EG30	ARI-5735-EH30	ARI-5735-EI30	ARI-5735-EK30	AGS-5731-RB2
NH_2		ARI-5736-EG30	ARI-5736-EH30	ARI-5736-EI30	ARI-5736-EK30	AGS-5731-CB2
HILIC Plus		ARI-5738-EG30	ARI-5738-EH30	ARI-5738-EI30	ARI-5738-EK30	AGS-5731-HB2
Si		ARI-5739-EG30	ARI-5739-EH30	ARI-5739-EI30	ARI-5739-EK30	AGS-5731-NB2

2.2 µm ARION® all dimensions in mm						**ARION® Guard Cartridges***
Phase		**50 × 4.6**	**75 × 4.6**	**100 × 4.6**	**150 × 4.6**	**5 × 4.0**
Plus C18		ARI-5720-EG46	ARI-5720-EH46	ARI-5720-EI46	ARI-5720-EK46	AGS-5731-RC4
Polar C18		ARI-5721-EG46	ARI-5721-EH46	ARI-5721-EI46	ARI-5721-EK46	AGS-5731-RC4
Phenyl-Butyl		ARI-5735-EG46	ARI-5735-EH46	ARI-5735-EI46	ARI-5735-EK46	AGS-5731-RC4
NH_2		ARI-5736-EG46	ARI-5736-EH46	ARI-5736-EI46	ARI-5736-EK46	Inquire**
HILIC Plus		ARI-5738-EG46	ARI-5738-EH46	ARI-5738-EI46	ARI-5738-EK46	Inquire**
Si		ARI-5739-EG46	ARI-5739-EH46	ARI-5739-EI46	ARI-5739-EK46	Inquire**

* ARION® Guard cartridges require ARION® Guard Holder p/n AGS-5731-000 (supplied without cartridges).
** The use of appropriate guard cartridge depends on the application. Please contact us.

Ordering information

Analytical columns

3 µm ARION® all dimensions in mm							ARION® Guard Cartridges*
Phase		**50 × 2.1**	**75 × 2.1**	**100 × 2.1**	**150 × 2.1**	**250 × 2.1**	**5 × 2.1**
Plus C18		ARI-5720-IG21	ARI-5720-IH21	ARI-5720-II21	ARI-5720-IK21	ARI-5720-IM21	AGS-5731-RC2
Polar C18		ARI-5721-IG21	ARI-5721-IH21	ARI-5721-II21	ARI-5721-IK21	–	AGS-5731-RC2
C8		ARI-5734-IG21	ARI-5734-IH21	ARI-5734-II21	ARI-5734-IK21	–	AGS-5731-RC2
Biphenyl		ARI-5868-IG21	ARI-5868-IH21	ARI-5868-II21	ARI-5868-IK21	–	AGS-5731-RC2
Phenyl-Butyl		ARI-5735-IG21	ARI-5735-IH21	ARI-5735-II21	ARI-5735-IK21	–	AGS-5731-RC2
NH_2		ARI-5736-IG21	ARI-5736-IH21	ARI-5736-II21	ARI-5736-IK21	–	AGS-5731-CC2
CN		ARI-5737-IG21	ARI-5737-IH21	ARI-5737-II21	ARI-5737-IK21	–	Inquire**
HILIC Plus		ARI-5738-IG21	ARI-5738-IH21	ARI-5738-II21	ARI-5738-IK21	–	AGS-5731-HC2
Si		ARI-5739-IG21	ARI-5739-IH21	ARI-5739-II21	ARI-5739-IK21	–	AGS-5731-NC2

3 µm ARION® all dimensions in mm							ARION® Guard Cartridges*
Phase		**50 × 3.0**	**75 × 3.0**	**100 × 3.0**	**150 × 3.0**	**250 × 3.0**	**5 × 4.0**
Plus C18		ARI-5720-IG30	ARI-5720-IH30	ARI-5720-II30	ARI-5720-IK30	ARI-5720-IM30	AGS-5731-RC4
Polar C18		ARI-5721-IG30	ARI-5721-IH30	ARI-5721-II30	ARI-5721-IK30	ARI-5721-IM30	AGS-5731-RC4
C8		ARI-5734-IG30	ARI-5734-IH30	ARI-5734-II30	ARI-5734-IK30	–	AGS-5731-RC4
Biphenyl		ARI-5868-IG30	ARI-5868-IH30	ARI-5868-II30	ARI-5868-IK30	ARI-5868-IM30	AGS-5731-RC4
Phenyl-Butyl		ARI-5735-IG30	ARI-5735-IH30	ARI-5735-II30	ARI-5735-IK30	ARI-5735-IM30	AGS-5731-RC4
NH_2		–	–	ARI-5736-II30	ARI-5736-IK30	–	AGS-5731-CC4
CN		–	–	ARI-5737-II30	ARI-5737-IK30	–	Inquire**
HILIC Plus		ARI-5738-IG30	ARI-5738-IH30	ARI-5738-II30	ARI-5738-IK30	–	AGS-5731-HC4
Si		ARI-5739-IG30	ARI-5739-IH30	ARI-5739-II30	ARI-5739-IK30	–	AGS-5731-NC4

3 µm ARION® all dimensions in mm								ARION® Guard Cartridges*
Phase		**50 × 4.6**	**75 × 4.6**	**100 × 4.6**	**125 × 4.6**	**150 × 4.6**	**250 × 4.6**	**5 × 4.0**
Plus C18		ARI-5720-IG46	ARI-5720-IH46	ARI-5720-II46	ARI-5720-IJ46	ARI-5720-IK46	ARI-5720-IM46	AGS-5731-RC4
Polar C18		ARI-5721-IG46	ARI-5721-IH46	ARI-5721-II46	–	ARI-5721-IK46	ARI-5721-IM46	AGS-5731-RC4
C8		ARI-5734-IG46	ARI-5734-IH46	ARI-5734-II46	–	ARI-5734-IK46	ARI-5734-IM46	AGS-5731-RC4
Biphenyl		ARI-5868-IG46	ARI-5868-IH46	ARI-5868-II46	–	ARI-5868-IK46	ARI-5868-IM46	AGS-5731-RC4
Phenyl-Butyl		ARI-5735-IG46	ARI-5735-IH46	ARI-5735-II46	–	ARI-5735-IK46	ARI-5735-IM46	AGS-5731-RC4
NH_2		ARI-5736-IG46	ARI-5736-IH46	ARI-5736-II46	–	ARI-5736-IK46	ARI-5736-IM46	AGS-5731-CC4
CN		ARI-5737-IG46	–	ARI-5737-II46	–	ARI-5737-IK46	–	Inquire**
HILIC Plus		ARI-5738-IG46	ARI-5738-IH46	ARI-5738-II46	–	ARI-5738-IK46	–	AGS-5731-HC4
Si		ARI-5739-IG46	ARI-5739-IH46	ARI-5739-II46	–	ARI-5739-IK46	ARI-5739-IM46	AGS-5731-NC4

* ARION® Guard cartridges require ARION® Guard Holder p/n AGS-5731-000 (supplied without cartridges).
** The use of appropriate guard cartridge depends on the application. Please contact us.

Ordering information

Analytical columns

5 µm ARION® all dimensions in mm						ARION® Guard Cartridges*
Phase		**30 × 2.1**	**50 × 2.1**	**100 × 2.1**	**150 × 2.1**	**5 × 2.1**
Plus C18		ARI-5720-LD21	ARI-5720-LG21	ARI-5720-LI21	ARI-5720-LK21	AGS-5731-RD2
Polar C18		ARI-5721-LD21	ARI-5721-LG21	ARI-5721-LI21	ARI-5721-LK21	AGS-5731-RD2
C8		–	–	–	ARI-5734-LK21	AGS-5731-RD2
Biphenyl		ARI-5868-LD21	ARI-5868-LG21	ARI-5868-LI21	ARI-5868-LK21	AGS-5731-RD2
Phenyl-Butyl		ARI-5735-LD21	ARI-5735-LG21	ARI-5735-LI21	ARI-5735-LK21	AGS-5731-RD2
PFP		ARI-5873-LD21	ARI-5873-LG21	ARI-5873-LI21	ARI-5873-LK21	AGS-5731-RD2
NH_2		–	–	–	ARI-5736-LK21	AGS-5731-CD2
CN		–	–	–	ARI-5737-LK21	Inquire**
HILIC Plus		ARI-5738-LD21	ARI-5738-LG21	ARI-5738-LI21	ARI-5738-LK21	AGS-5731-HD2
Si		ARI-5739-LD21	ARI-5739-LG21	ARI-5739-LI21	ARI-5739-LK21	AGS-5731-ND2

5 µm ARION® all dimensions in mm						ARION® Guard Cartridges*
Phase		**30 × 3.0**	**50 × 3.0**	**75 × 3.0**	**100 × 3.0**	**5 × 4.0**
Plus C18		ARI-5720-LD30	ARI-5720-LG30	ARI-5720-LH30	ARI-5720-LI30	AGS-5731-RD4
Polar C18		ARI-5721-LD30	ARI-5721-LG30	ARI-5721-LH30	ARI-5721-LI30	AGS-5731-RD4
C8		–	ARI-5734-LG30	–	ARI-5734-LI30	AGS-5731-RD4
Biphenyl		ARI-5868-LD30	ARI-5868-LG30	ARI-5868-LH30	ARI-5868-LI30	AGS-5731-RD4
Phenyl-Butyl		ARI-5735-LD30	ARI-5735-LG30	ARI-5735-LH30	ARI-5735-LI30	AGS-5731-RD4
PFP		ARI-5873-LD30	ARI-5873-LG30	ARI-5873-LH30	ARI-5873-LI30	AGS-5731-RD4
NH_2		–	ARI-5736-LG30	ARI-5736-LH30	ARI-5736-LI30	AGS-5731-CD4
CN		–	ARI-5737-LG30	ARI-5737-LH30	ARI-5737-LI30	Inquire**
HILIC Plus		ARI-5738-LD30	ARI-5738-LG30	ARI-5738-LH30	ARI-5738-LI30	AGS-5731-HD4
Si		ARI-5739-LD30	ARI-5739-LG30	ARI-5739-LH30	ARI-5739-LI30	AGS-5731-ND4
SAX		–	ARI-5806-LG30	–	ARI-5806-LI30	–
SCX		–	ARI-5799-LG30	–	ARI-5799-LI30	–

5 µm ARION® all dimensions in mm					ARION® Guard Cartridges*
Phase		**125 × 3.0**	**150 × 3.0**	**250 × 3.0**	**5 × 4.0**
Plus C18		ARI-5720-LJ30	ARI-5720-LK30	–	AGS-5731-RD4
Polar C18		–	ARI-5721-LK30	–	AGS-5731-RD4
C8		–	ARI-5734-LK30	ARI-5734-LM30	AGS-5731-RD4
Biphenyl		ARI-5868-LJ30	ARI-5868-LK30	ARI-5868-LM30	AGS-5731-RD4
Phenyl-Butyl		–	ARI-5735-LK30	–	AGS-5731-RD4
PFP		ARI-5873-LJ30	ARI-5873-LK30	ARI-5873-LM30	AGS-5731-RD4
NH_2		–	ARI-5736-LK30	–	AGS-5731-CD2
CN		–	ARI-5737-LK30	–	Inquire**
HILIC Plus		–	ARI-5738-LK30	–	AGS-5731-HD4
Si		–	ARI-5739-LK30	–	AGS-5731-ND4
SAX		–	ARI-5806-LK30	ARI-5806-LM30	–
SCX		–	ARI-5799-LK30	ARI-5799-LM30	–

* ARION® Guard cartridges require ARION® Guard Holder p/n AGS-5731-000 (supplied without cartridges).

** The use of appropriate guard cartridge depends on the application. Please contact us.

Ordering information

Analytical columns

5 µm ARION® all dimensions in mm						ARION® Guard Cartridges*
Phase		**125 × 4.0**	**30 × 4.6**	**50 × 4.6**	**75 × 4.6**	**5 × 4.0**
Plus C18		ARI-5720-LJ40	ARI-5720-LD46	ARI-5720-LG46	ARI-5720-LH46	AGS-5731-RD4
Polar C18		ARI-5721-LJ40	ARI-5721-LD46	ARI-5721-LG46	ARI-5721-LH46	AGS-5731-RD4
C8		ARI-5734-LJ40	–	–	–	AGS-5731-RD4
Biphenyl		ARI-5868-LJ40	ARI-5868-LD46	ARI-5868-LG46	ARI-5868-LH46	AGS-5731-RD4
Phenyl-Butyl		–	–	–	–	AGS-5731-RD4
PFP		ARI-5873-LJ40	ARI-5873-LD46	ARI-5873-LG46	ARI-5873-LH46	AGS-5731-RD4
NH_2		–	–	–	–	AGS-5731-CD4
CN		–	–	–	–	Inquire**
HILIC Plus		–	ARI-5738-LD46	ARI-5738-LG46	ARI-5738-LH46	AGS-5731-HD4
Si		–	ARI-5739-LD46	ARI-5739-LG46	ARI-5739-LH46	AGS-5731-ND4
SAX		–	–	ARI-5806-LG46	–	Inquire
SCX		–	–	ARI-5799-LG46	–	Inquire

5 µm ARION® all dimensions in mm						ARION® Guard Cartridges*
Phase		**100 × 4.6**	**125 × 4.6**	**150 × 4.6**	**250 × 4.6**	**5 × 4.0**
Plus C18		ARI-5720-LI46	ARI-5720-LJ46	ARI-5720-LK46	ARI-5720-LM46	AGS-5731-RD4
Polar C18		ARI-5721-LI46	–	ARI-5721-LK46	ARI-5721-LM46	AGS-5731-RD4
C8		ARI-5734-LI46	ARI-5734-LJ46	ARI-5734-LK46	ARI-5734-LM46	AGS-5731-RD4
Biphenyl		ARI-5868-LI46	ARI-5868-LJ46	ARI-5868-LK46	ARI-5868-LM46	AGS-5731-RD4
Phenyl-Butyl		ARI-5735-LI46	–	ARI-5735-LK46	ARI-5735-LM46	AGS-5731-RD4
PFP		ARI-5873-LI46	ARI-5873-LJ46	ARI-5873-LK46	ARI-5873-LM46	AGS-5731-RD4
NH_2		ARI-5736-LI46	–	ARI-5736-LK46	ARI-5736-LM46	AGS-5731-CD4
CN		ARI-5737-LI46	–	ARI-5737-LK46	ARI-5737-LM46	Inquire**
HILIC Plus		ARI-5738-LI46	–	ARI-5738-LK46	ARI-5738-LM46	AGS-5731-HD4
Si		ARI-5739-LI46	–	ARI-5739-LK46	ARI-5739-LM46	AGS-5731-ND4
SAX		ARI-5806-LI46	–	ARI-5806-LK46	ARI-5806-LM46	Inquire
SCX		ARI-5799-LI46	–	ARI-5799-LK46	ARI-5799-LM46	Inquire

Note: Other dimensions on request.

* ARION® Guard cartridges require ARION® Guard Holder p/n AGS-5731-000 (supplied without cartridges).
** The use of appropriate guard cartridge depends on the application. Please contact us.

ARION® column test mixture 1 for RP columns p/n ARI-MIX-1

4 components in Acetonitrile / Water (75/25), 1 mL ampoule

Uracil	[CAS:66-22-8]	20 mg/L
Acetophenone	[CAS:98-86-2]	200 mg/L
Toluene	[CAS:108-88-3]	10000 mg/L
Naphthalene	[CAS:91-20-3]	9000 mg/L

ARION® column test mixture 5 for DIOL/HILIC phases p/n ARI-MIX-5

3 components in Acetonitrile ampoule

Acenaphthene	[CAS:108-88-3]	600 mg/L
Uracil	[CAS:66-22-8]	100 mg/L
Cytosine	[CAS:71-30-7]	200 mg/L

ARION® column test mixture 2 p/n ARI-MIX-2

7 components in Methanol, 1 mL ampoule

Uracil	[CAS:66-22-8]	200 mg/L
Aniline	[CAS:62-53-3]	1000 mg/L
Phenol	[CAS:108-95-2]	2000 mg/L
N,N-Dimethylaniline	[CAS:121-69-7]	400 mg/L
4-Ethylaniline	[CAS:589-16-2]	2000 mg/L
Toluene	[CAS:108-88-3]	10000 mg/L
Ethylbenzene	[CAS:100-41-4]	10000 mg/L

Ordering information

Semi-preparative and preparative columns

5 µm ARION® all dimensions in mm						ARION® Guard Cartridges
Phase	**250 × 10**	**50 × 21.2**	**100 × 21.2**	**150 × 21.2**	**250 × 21.2**	
Plus C18	ARI-5720-LM1X	ARI-5720-LG2Y	ARI-5720-LI2Y	ARI-5720-LK2Y	ARI-5720-LM2Y	PGS-5856-UD9**
Polar C18	ARI-5721-LM1X	ARI-5721-LG2Y	ARI-5721-LI2Y	ARI-5721-LK2Y	ARI-5721-LM2Y	Inquire*
Phenyl-Butyl	–	–	–	–	ARI-5735-LM2Y	Inquire*
Si	ARI-5739-LM1X	ARI-5739-LG2Y	ARI-5739-LI2Y	ARI-5739-LK2Y	ARI-5739-LM2Y	PGS-5856-VD9**

Preparative columns

5 µm ARION® all dimensions in mm					ARION® Guard Cartridges
Phase	**100 × 30**	**150 × 30**	**250 × 30**	**250 × 50**	
Plus C18	ARI-5720-LI3X	ARI-5720-LK3X	ARI-5720-LM3X	ARI-5720-LM5X	Inquire*
Polar C18	ARI-5721-LI3X	ARI-5721-LK3X	ARI-5721-LM3X	ARI-5721-LM5X	Inquire*
Phenyl-Butyl	–	–	ARI-5735-LM3X	ARI-5735-LM5X	Inquire*
Si	ARI-5739-LI3X	ARI-5739-LK3X	ARI-5739-LM3X	ARI-5739-LM5X	Inquire*

* The use of appropriate guard cartridge depends on the application. Please contact us.
** This guard cartridge requires a Preparative Guard Holder p/n PGS-5856-000

Semi-preparative column 250 × 10 mm

Preparative column 250 × 21.2 mm

Preparative column 250 × 30 mm

Preparative column 250 × 50 mm

Ordering information

Preparative columns

10 µm ARION® all dimensions in mm					**ARION® Guard Cartridges**
Phase	**150 × 4.6**	**250 × 4.6**	**150 × 10**	**250 × 10**	
Plus C18	ARI-5720-PK46	ARI-5720-PM46	ARI-5720-PK1X	ARI-5720-PM1X	Inquire*
Polar C18	ARI-5721-PK46	ARI-5721-PM46	ARI-5721-PK1X	ARI-5721-PM1X	Inquire*
Si	–	–	–	ARI-5739-PM1X	Inquire*

10 µm ARION® all dimensions in mm					**ARION® Guard Cartridges**
Phase	**50 × 21.2**	**100 × 21.2**	**150 × 21.2**	**250 × 21.2**	
Plus C18	ARI-5720-PG2Y	ARI-5720-PI2Y	ARI-5720-PK2Y	ARI-5720-PM2Y	Inquire*
Polar C18	ARI-5721-PG2Y	ARI-5721-PI2Y	ARI-5721-PK2Y	ARI-5721-PM2Y	Inquire*
Si	ARI-5739-PG2Y	ARI-5739-PI2Y	ARI-5739-PK2Y	ARI-5739-PM2Y	Inquire*

10 µm ARION® all dimensions in mm					**ARION® Guard Cartridges**
Phase	**100 × 30**	**150 × 30**	**250 × 30**	**250 × 50**	
Plus C18	ARI-5720-PI3X	ARI-5720-PK3X	ARI-5720-PM3X	ARI-5720-PM5X	Inquire*
Polar C18	ARI-5721-PI3X	ARI-5721-PK3X	ARI-5721-PM3X	ARI-5721-PM5X	Inquire*
Si	ARI-5739-PI3X	ARI-5739-PK3X	ARI-5739-PM3X	ARI-5739-PM5X	Inquire*

* The use of appropriate guard cartridge depends on the application. Please contact us.
Note: Bulk media available on request for 10 and 15 µm particles, in quantities: 10 g, 100 g, 1 kg.

Ordering information

Preparative columns

15 µm ARION® all dimensions in mm					**ARION® Guard Cartridges**
Phase	**150 × 4.6**	**250 × 4.6**	**150 × 10**	**250 × 10**	
Plus C18	ARI-5720-QK46	ARI-5720-QM46	ARI-5720-QK1X	ARI-5720-QM1X	Inquire*
Polar C18	ARI-5721-QK46	ARI-5721-QM46	ARI-5721-QK1X	ARI-5721-QM1X	Inquire*

15 µm ARION® all dimensions in mm					**ARION® Guard Cartridges**
Phase	**50 × 21.2**	**100 × 21.2**	**150 × 21.2**	**250 × 21.2**	
Plus C18	ARI-5720-QG2Y	ARI-5720-QI2Y	ARI-5720-QK2Y	ARI-5720-QM2Y	Inquire*
Polar C18	ARI-5721-QG2Y	ARI-5721-QI2Y	ARI-5721-QK2Y	ARI-5721-QM2Y	Inquire*

15 µm ARION® all dimensions in mm					**ARION® Guard Cartridges**
Phase	**50 × 30**	**100 × 30**	**150 × 30**	**250 × 30**	
Plus C18	ARI-5720-QG3X	ARI-5720-QI3X	ARI-5720-QK3X	ARI-5720-QM3X	Inquire*
Polar C18	ARI-5721-QG3X	ARI-5721-QI3X	ARI-5721-QK3X	ARI-5721-QM3X	Inquire*

Note: Bulk media available on request for 10 and 15 µm particles, in quantities: 10 g, 100 g, 1 kg.

* The use of appropriate guard cartridge depends on the application. Please contact us.

Product support

Not found the information you require? The ARION® website www.arionchromatography.com serves as your support source.

Application database
The ARION® website has a search engine to find an application based on different keywords, e.g. compound name, trivial name, formula etc.

Product selection guide
The section catalogue offers you text engine as well as sorting the required HPLC columns based on various parameters (column dimensions, particle size, surface chemistry, ...).

Distributor finder
The ARION® website includes a world map with an active finder of your distributor, who will support you with technical and price information.

Certificate download
If you cannot find your column certificate, please contact your local distributor or download the certificate from the **Downloads section**.