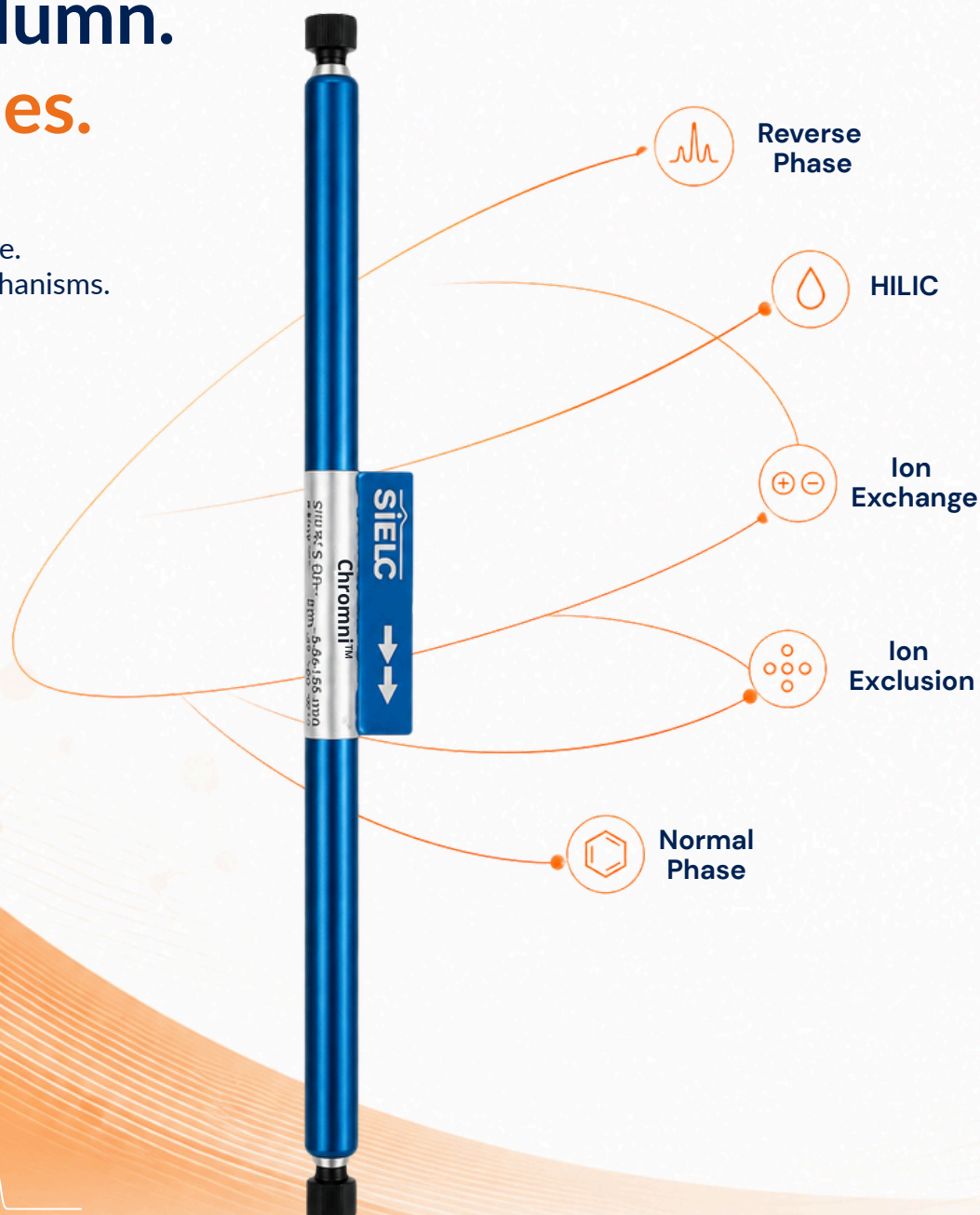


CHROMNI™

HPLC Column

One Column.
All Modes.

One stationary phase.
Five separation mechanisms.



Universal Selectivity
One phase for any challenge



Save Time & Resources
Fewer columns.
More results.



Robust & Reliable
Results You Can Trust



Sustainable Choice
Reduce waste.
Improve efficiency.

The All-in-One HPLC Column

In traditional liquid chromatography, analyzing different classes of compounds often requires multiple specialized columns—each optimized for a single type of interaction, such as reversed-phase, HILIC, ion-exchange, or normal phase. This leads to higher costs, longer workflows, and limited flexibility.

“**Chromni™** changes **this paradigm.**”

It is a revolutionary stationary phase capable of performing reversed-phase, HILIC, ion-exchange, ion-exclusion, and normal-phase separations within a single column. Unlike conventional stationary phases, Chromni™ uses a unified, adaptive surface chemistry that dynamically responds to the mobile phase, unlocking the appropriate



retention mechanism for each analyte class.

This unique surface chemistry provides a balance of hydrophobic, polar, and ionizable groups, which respond to the mobile phase environment to emphasize the desired interactions.

Aqueous-organic mobile phases → Hydrophobic Retention (reverse phase mode)

High-organic conditions → Polar Retention (HILIC mode)

Buffered ionic modifiers → Ion-Exchange, Ion-Exclusion

Pure organic solvents → Normal Phase Separations

Chromni™ is compatible with all common HPLC detectors and mobile phases, and its exceptionally low bleed makes it ideal for sensitive trace-level analyses.

Create a Column Part Number Using the Chart Below



To order a column or ask a question send your message to sales@sielc.com

Type of Packing		Column ID		Column Length		Particle Size		Pore Size	
CHROMNI™ CHR		4.6 mm	46	250 mm	250	3 µm	03	100 A	10
		3.2 mm	32	150 mm	150	5 µm	05		
		2.1 mm	21	100 mm	100				
		1.0 mm	10	50 mm	050				
				25 mm	025				

CHR - 46.150.0510

How One Column Can Do It All

Chromni's™ surface chemistry is dynamic and adaptive, allowing it to shift its retention mechanism depending on mobile phase composition. The column combines hydrophobic, polar, and ionizable groups in a single, unified surface, which emphasizes the interactions required for each analyte.



REVERSIBLE ADAPTATION

The dominant interaction changes with the mobile phase: hydrophobic in aqueous-organic, polar in high-organic (HILIC), ionic in buffered or ion-modifier conditions.

One column can replace multiple specialized columns.



SINGLE-PHASE ADVANTAGE

All interactions—hydrophobic, polar, and ionic—exist on a uniform surface.

No phase separation or uneven packing, ensuring consistent flow and reproducible retention.

Provides multiple chromatographic modes without switching columns.



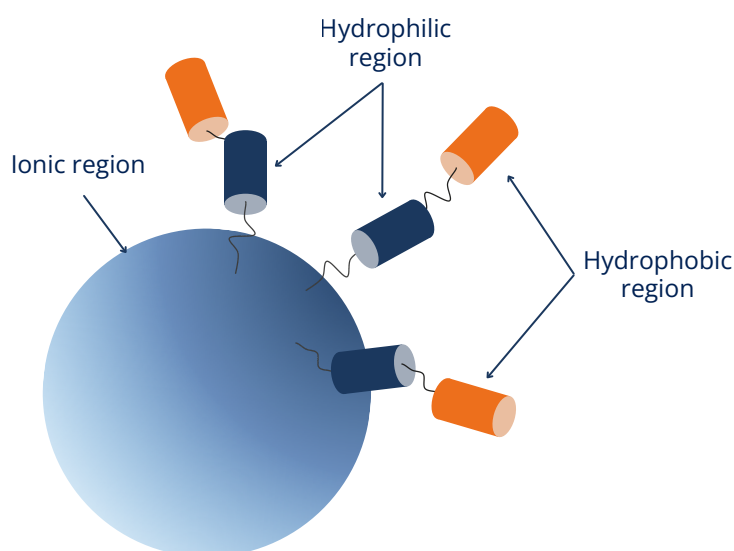
FLEXIBLE SELECTIVITY

Retention and selectivity can be precisely adjusted with small changes in organic fraction, buffer type, pH, or ionic modifiers.

The combination of adaptive surface chemistry and fine-tuning allows optimal resolution for complex mixtures, improving peak separation and reproducibility.

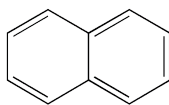
Enables rapid method optimization without changing the column.

Fig. 1. Chromni™ Stationary Phase Representation

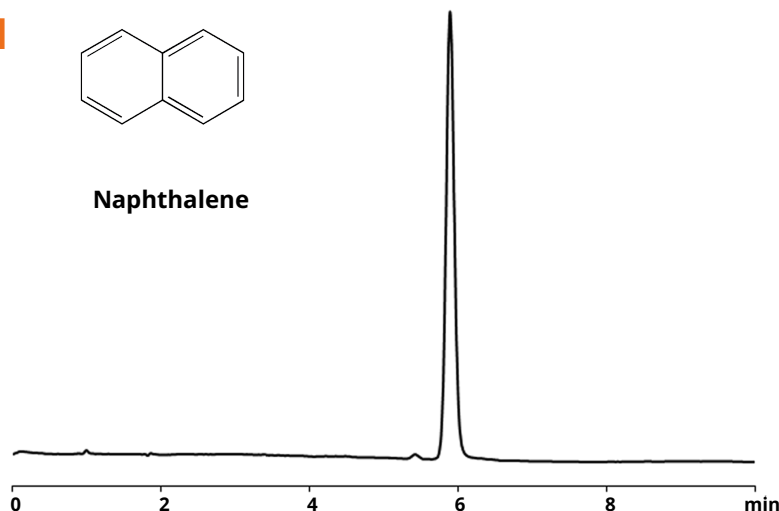


Applications

NAPHTHALENE ANALYSIS IN REVERSED-PHASE MODE

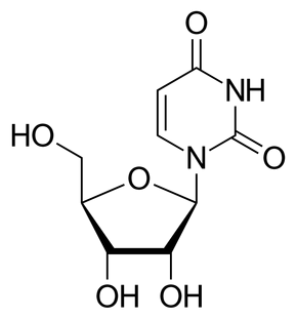


Naphthalene

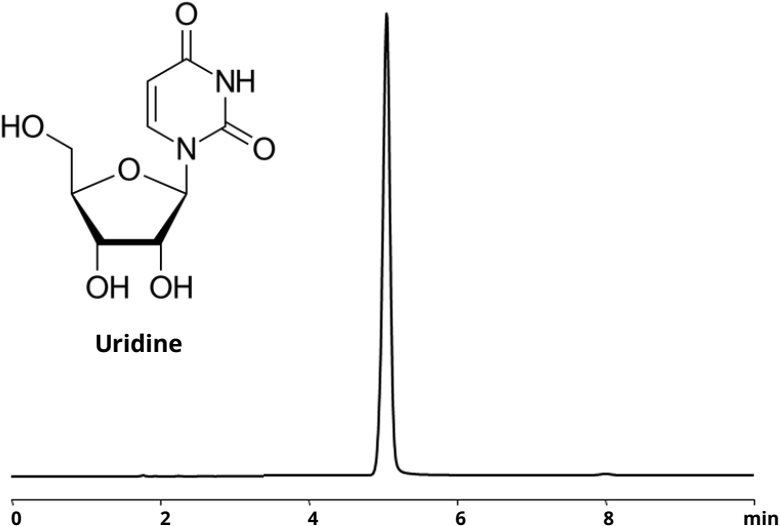


Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeCN/H₂O – 20/80%
Buffer: None
Flow rate: 1.0 mL/min
Detection: UV 220 nm

Naphthalene, a nonpolar aromatic hydrocarbon, is retained under aqueous/organic mobile phases through hydrophobic interactions. Chromni™ produces sharp peaks and stable retention, demonstrating its ability to perform as a high-quality reversed-phase column for hydrophobic analytes.



Uridine



URIDINE RETENTION IN HILIC MODE

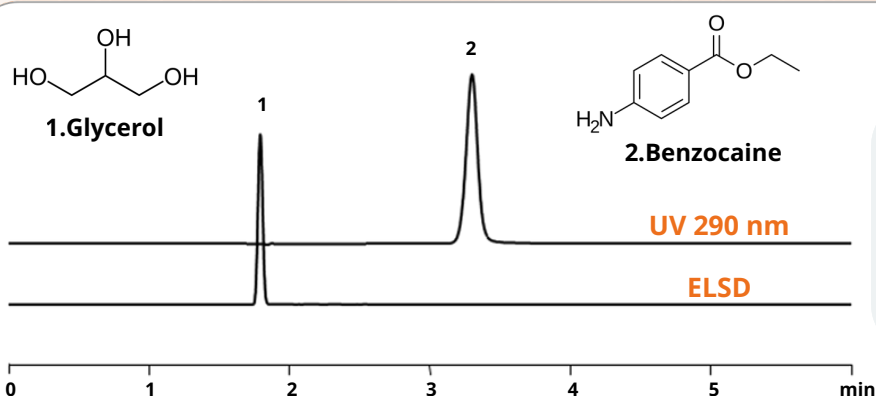
Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeCN/H₂O – 95/05%
Buffer: None
Flow rate: 1.0 mL/min
Detection: UV 260 nm

Uridine, a highly polar nucleoside, is efficiently retained in HILIC mode using high-acetonitrile mobile phases. Chromni™ provides excellent selectivity and reproducibility for polar analytes such as nucleosides, sugars, and metabolites where conventional RP columns fail.

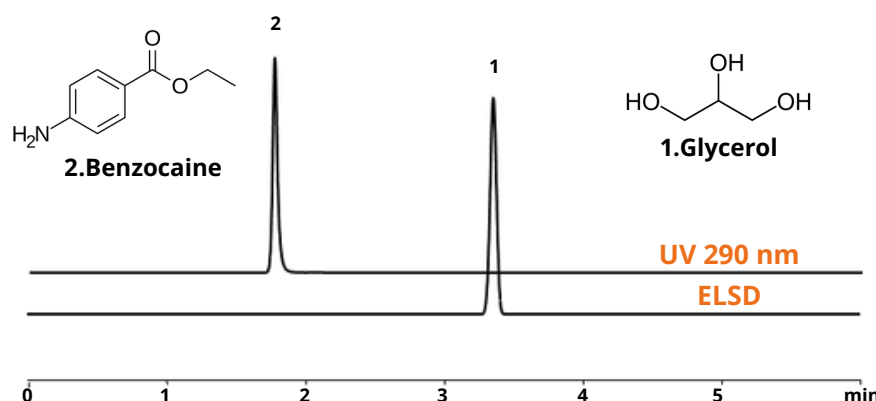
Applications

FROM POLAR TO NONPOLAR IN ONE SYSTEM

Single-mode columns are typically optimized for a narrow range of analyte properties, which can limit method performance when a sample contains compounds with very different physicochemical characteristics. In a mixed sample containing both polar compounds such as glycerol and less polar compounds such as benzocaine, achieving optimal retention and reliable quantification for each analyte can be challenging. As a result, when accurate quantification of each component is required, multiple columns are often needed. Chromni™ addresses this limitation through a tunable interaction profile that enables flexible adjustment of retention behavior within the same stationary phase, supporting robust quantification of both analytes using a single column platform.



Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeCN/H₂O – 10/90%
Buffer: FA – 0.1%
Flow rate: 1.0 mL/min
Detection: UV 290 nm, ELSD

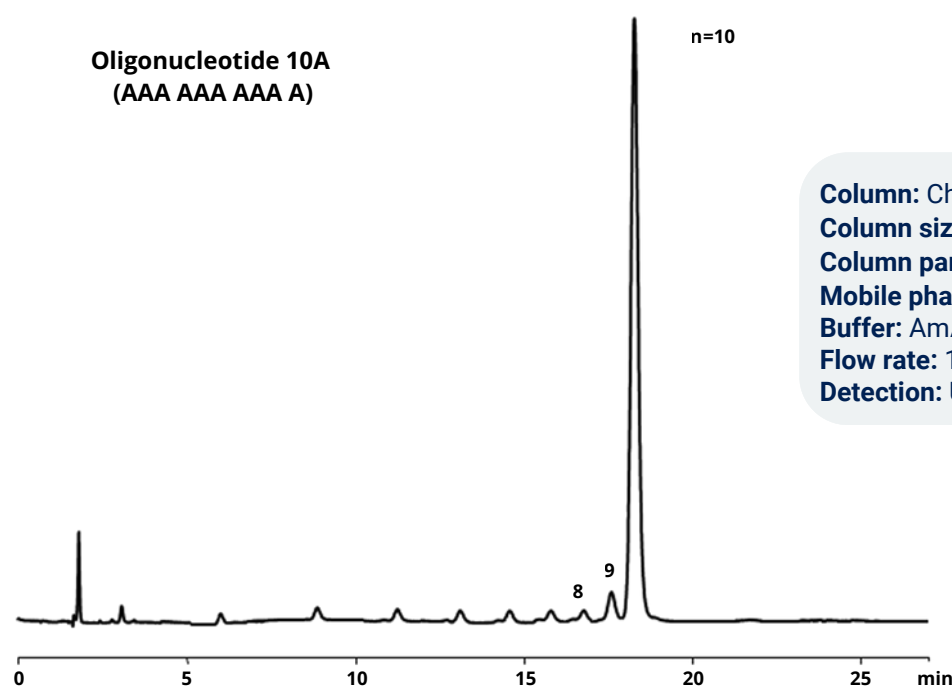


Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeCN/H₂O – 90/10%
Buffer: FA – 0.1%
Flow rate: 1.0 mL/min
Detection: UV 290 nm, ELSD

Applications

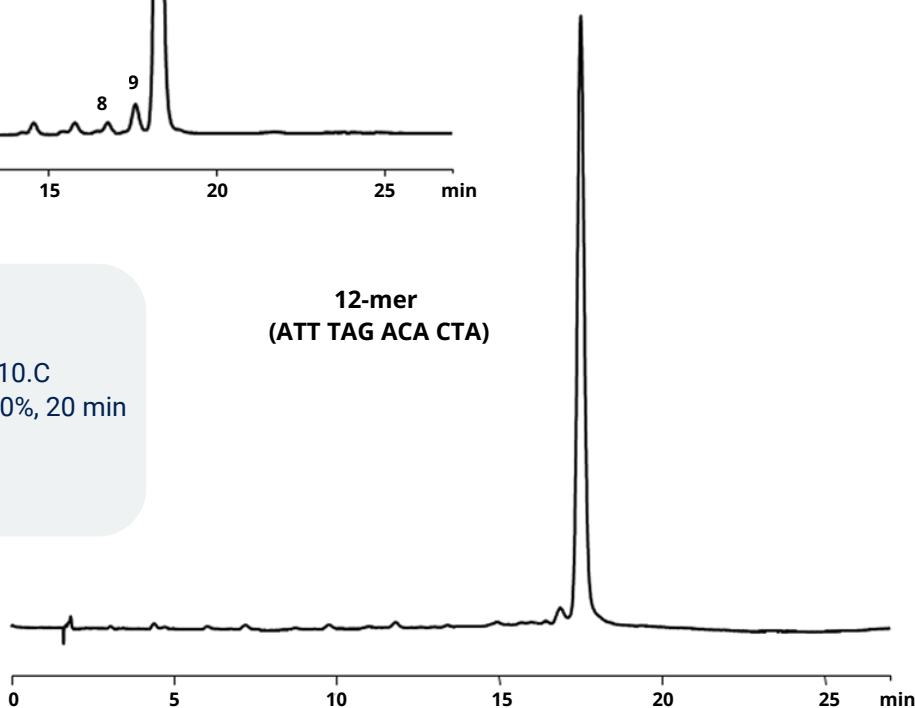
OLIGONUCLEOTIDE ANALYSIS

Oligonucleotides are highly charged, polar biomolecules that often require complex chromatographic methods for reliable separation and quantification. The Chromni™ column simplifies oligonucleotide analysis through its adaptive stationary phase chemistry with carefully balanced interaction properties, delivering excellent retention control, peak shape, and reproducibility. Robust separations can be achieved using simple mobile phases consisting of ammonium acetate (pH 5) and a high-to-low acetonitrile gradient, reducing method complexity while maintaining high analytical performance.



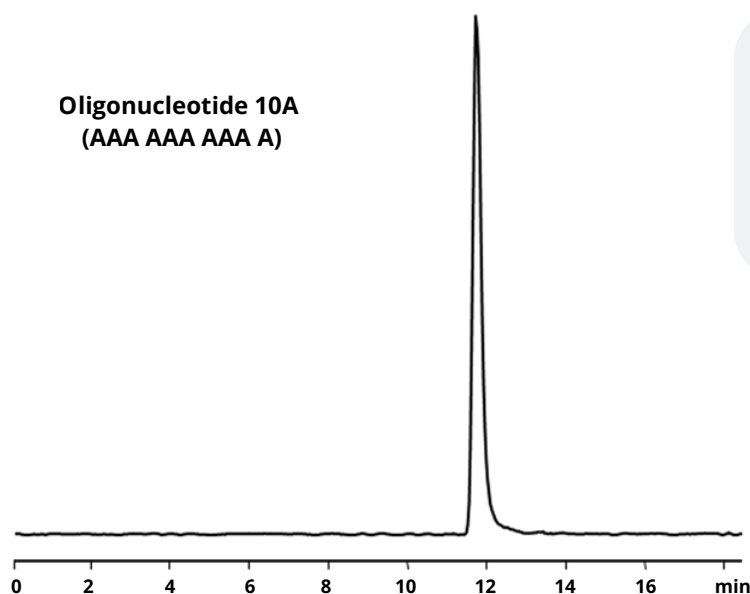
12-mer
(ATT TAG ACA CTA)

Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310.C
Mobile phase: Gradient MeCN - 75 - 60%, 20 min
Buffer: AmAc pH 5.0 – 10 mM
Flow rate: 1.0 mL/min
Detection: UV 260 nm



Applications

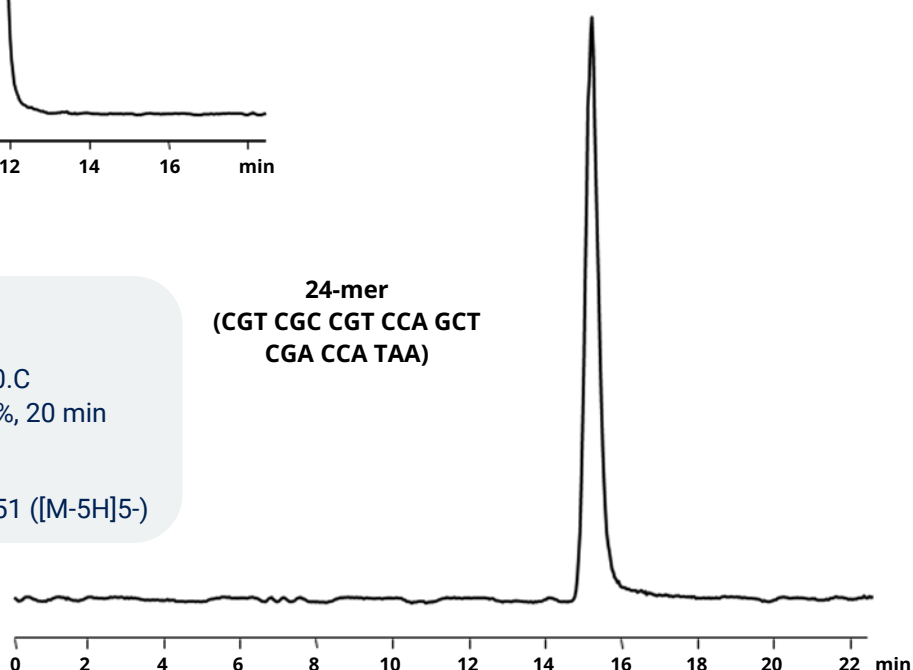
LC-MS OLIGONUCLEOTIDE ANALYSIS



Column: Chromni™ (coated)
Column size: 2.1 × 150 mm, 3 µm
Column part number: CHR-21.150.0310.C
Mobile phase: Gradient MeCN - 70 - 50%, 15 min
Buffer: AmAc pH 5.0 – 5 mM
Flow rate: 0.2 mL/min
Detection: LC-MS (ESI-, SIM), m/z 1022 ([M-3H]3-)

Column: Chromni™ (coated)
Column size: 2.1 × 150 mm, 3 µm
Column part number: CHR-21.150.0310.C
Mobile phase: Gradient MeCN - 70 - 50%, 20 min
Buffer: AmAc pH 5.0 – 5 mM
Flow rate: 0.2 mL/min
Detection: LC-MS (ESI-, SIM), m/z 1451 ([M-5H]5-)

24-mer
(CGT CGC CGT CCA GCT
CGA CCA TAA)

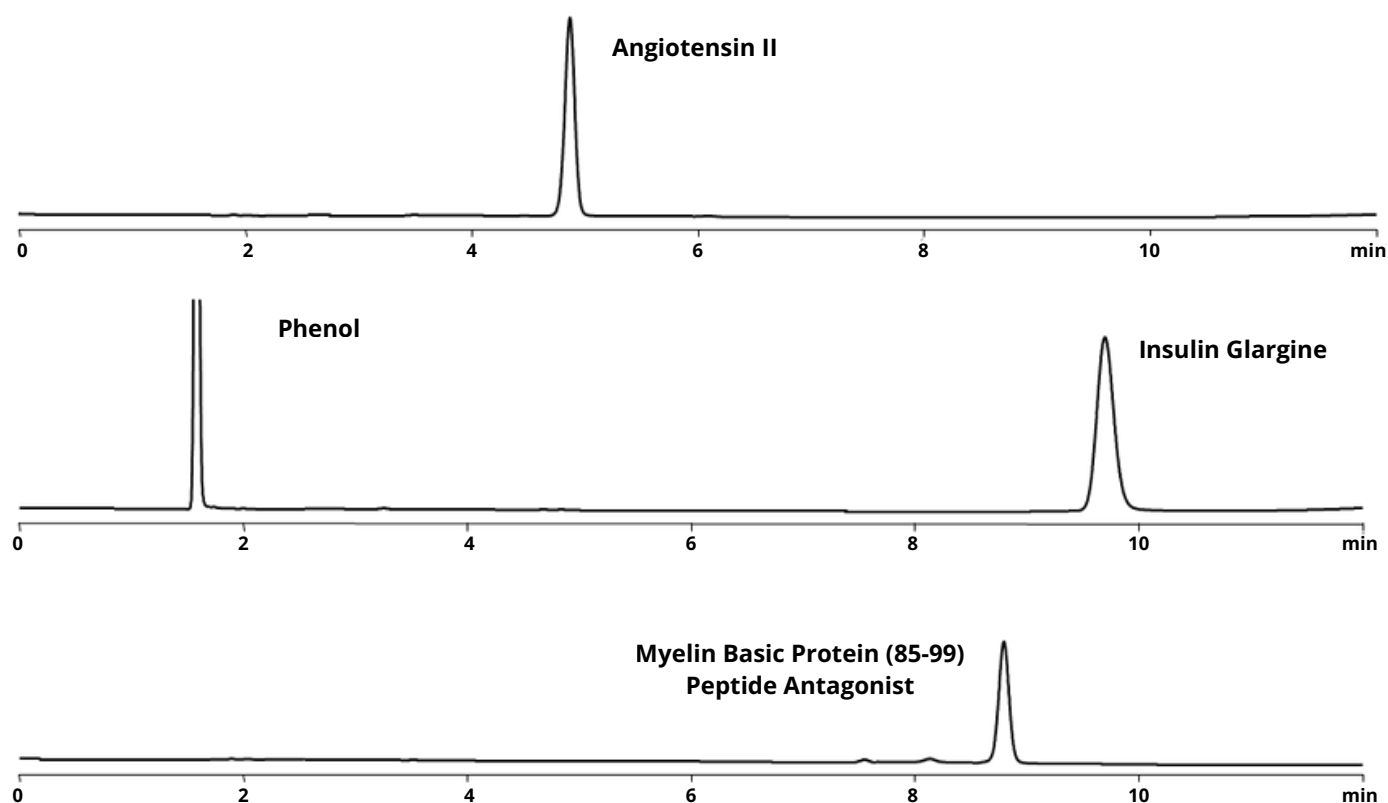


Analysis of oligonucleotides by LC-MS is often challenging because traditional single-mode columns typically require ion-pairing reagents or high buffer concentrations to retain and elute these highly charged, polar molecules. Such conditions can suppress ionization, contaminate the MS source, and complicate LC-MS method development. The adaptive stationary phase chemistry of Chromni™ provides strong and controllable retention without relying on ion-pairing reagents, enabling oligonucleotide analysis using low concentrations of volatile buffers. This simplifies LC-MS workflows while supporting sensitive detection, accurate mass measurements, and reliable impurity characterization.

Applications

PEPTIDE ANALYSIS

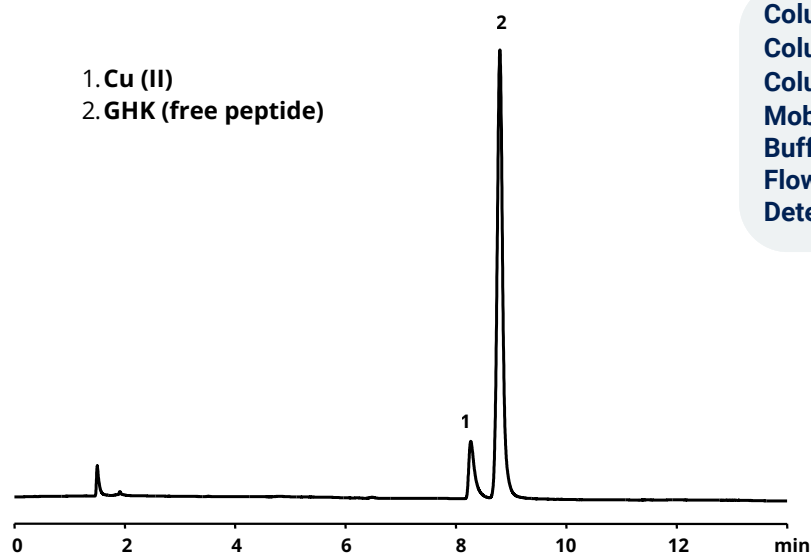
Peptides vary widely in size, structure, and physicochemical properties, which can make method development challenging with conventional chromatographic phases. Chromni™ provides a versatile interaction profile that enables reliable and reproducible analysis of individual peptides across a broad range of structures. This includes small bioactive peptides such as angiotensin II, myelin basic protein (85-99) peptide, and insulin as a larger peptide model, all under simple analytical conditions.



Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 µm
Column part number: CHR-46.150.0310.C
Mobile phase: Gradient MeCN - 80 - 60%, 10 min
Buffer: H₂SO₄ - 0.2%
Flow rate: 1.0 mL/min
Detection: UV 200 nm, 280 nm

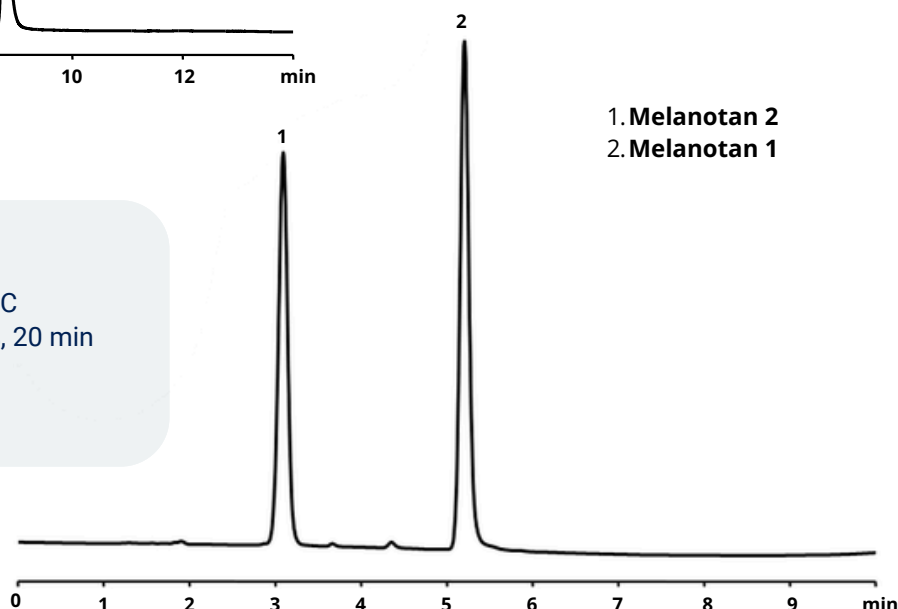
Applications

PEPTIDE ANALYSIS



Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 µm
Column part number: CHR-46.150.0310.C
Mobile phase: Gradient MeCN - 80 - 70%, 10 min
Buffer: H₂SO₄ - 0.2%
Flow rate: 1.0 mL/min
Detection: UV 200 nm

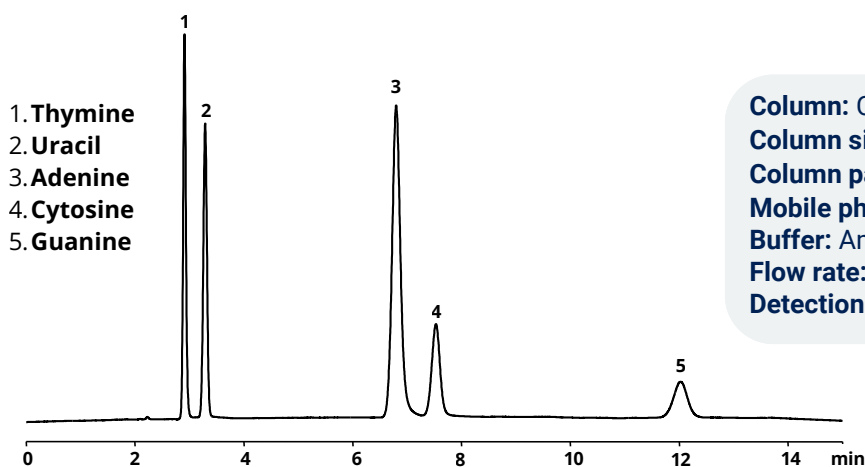
Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 µm
Column part number: CHR-46.150.0310.C
Mobile phase: Gradient MeCN - 80 - 60%, 20 min
Buffer: H₂SO₄ - 0.1%
Flow rate: 1.0 mL/min
Detection: UV 200 nm, 280 nm



The structural diversity of peptides can present unique challenges for chromatographic separation, particularly for modified, metal-bound, and cyclic peptide structures. Chromni™ offers a versatile separation mechanism that can accommodate peptides with different sizes, conformations, and chemical functionalities. GHK-Cu demonstrates the analysis of a metal-bound peptide complex, while Melanotan I and Melanotan II provide examples of structurally distinct synthetic peptides, including linear and cyclic architectures. Together, these applications highlight the broad applicability of Chromni™ for the analysis of diverse and challenging peptide compounds under simple HPLC conditions.

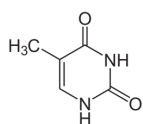
Applications

NUCLEOBASE & NUCLEOSIDE ANALYSIS

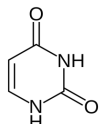


1. Thymine
2. Uracil
3. Adenine
4. Cytosine
5. Guanine

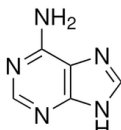
Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310.C
Mobile phase: MeCN – 90%
Buffer: AmAc pH 5.0 – 10 mM
Flow rate: 1.0 mL/min
Detection: UV 260 nm



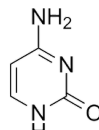
Thymine



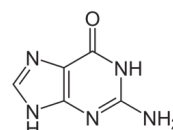
Uracil



Adenine

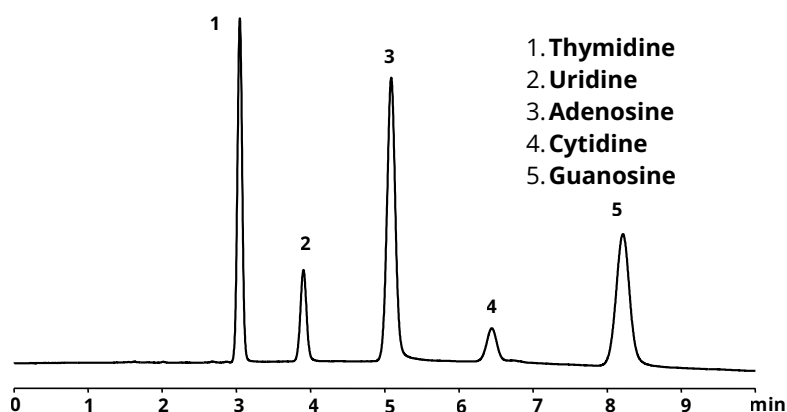


Cytosine

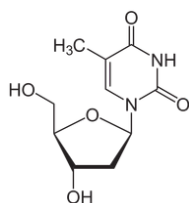


Guanine

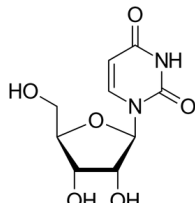
Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310.C
Mobile phase: MeCN – 85%
Buffer: AmAc pH 5.0 – 10 mM
Flow rate: 1.0 mL/min
Detection: UV 260 nm



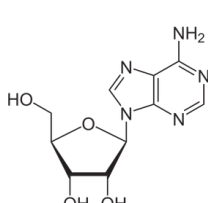
1. Thymidine
2. Uridine
3. Adenosine
4. Cytidine
5. Guanosine



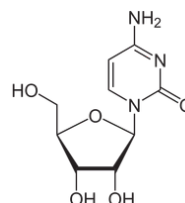
Thymidine



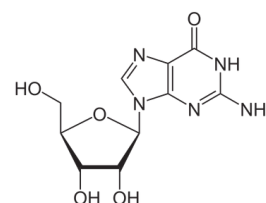
Uridine



Adenosine



Cytidine

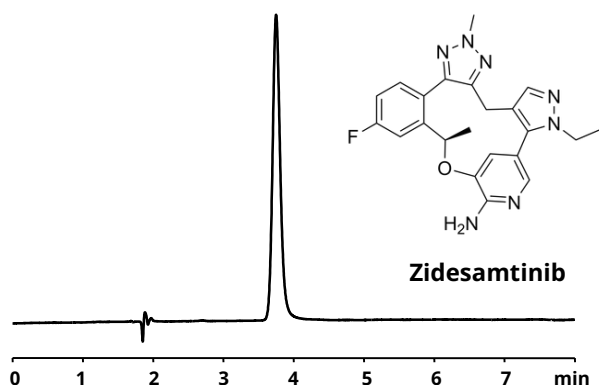


Guanosine

Nucleobases and nucleosides are highly polar biomolecules with closely related structures and multiple hydrogen-bonding functionalities, making their chromatographic separation challenging with conventional reversed-phase phases. Chromni™ provides versatile interactions that enable effective separation of these structurally similar compounds under simple HPLC conditions. The applications demonstrate Chromni™'s capability for the analysis of both individual nucleobases and nucleosides across a range of polarities and molecular structures.

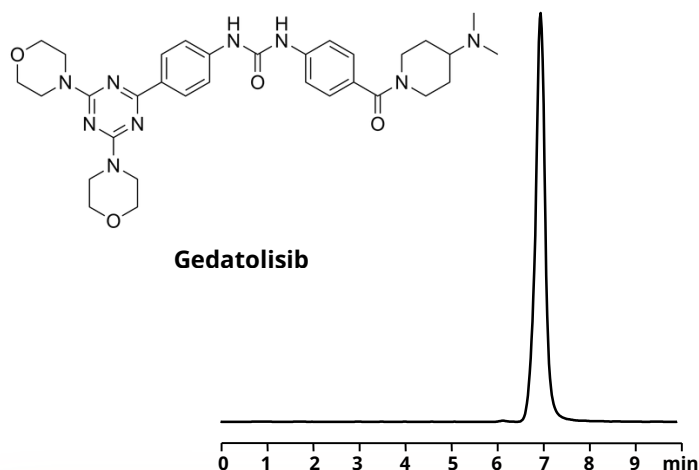
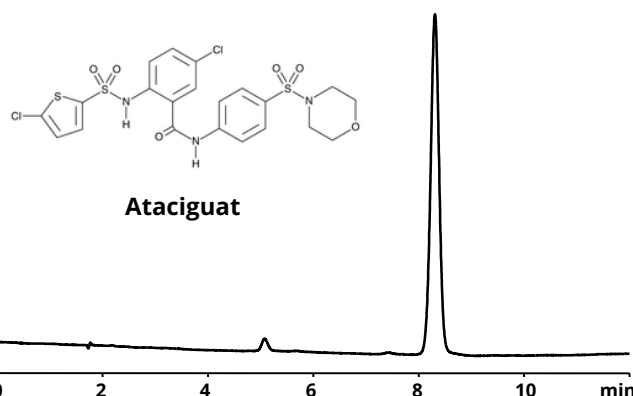
Applications

PHARMACEUTICAL & BIOACTIVE SMALL-MOLECULE ANALYSIS



Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310.C
Mobile phase: MeCN – 20%
Buffer: AmAc pH 7.0 – 20 mM
Flow rate: 1.0 mL/min
Detection: UV 260 nm

Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310.C
Mobile phase: Gradient MeCN 30 – 45% in 10 min
Buffer: AmAc pH 5.0 – 10 mM
Flow rate: 1.0 mL/min
Detection: UV 270 nm

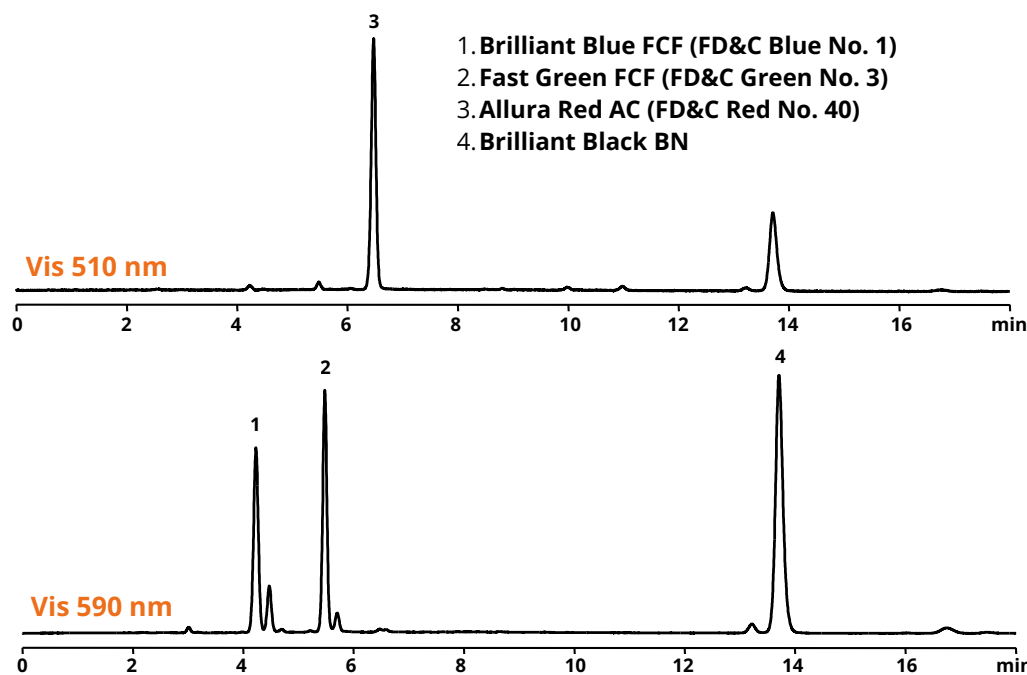


Column: Chromni™ (coated)
Column size: 3.2 × 100 mm, 3 μm
Column part number: CHR-32.100.0310.C
Mobile phase: Gradient MeCN - 90 - 70%, 10 min
Buffer: AmFm pH 3.0 – 20 mM
Flow rate: 0.5 mL/min
Detection: LC MS ESI SIM 616 [M+H]⁺ , 309 [(M+2H)/2]²⁺

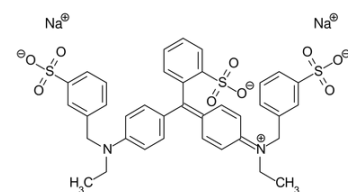
Pharmaceutical compounds encompass a wide range of chemical structures, ionization properties, and physicochemical characteristics, presenting diverse challenges for chromatographic method development. Chromni™ provides a versatile interaction profile for the analysis of structurally diverse small molecules, including bioactive compounds and modern pharmaceutical agents. Applications featuring ataciguat, gedatolisib, and zidesamtinib demonstrate the applicability of Chromni™ to challenging ionizable small-molecule compounds.

Applications

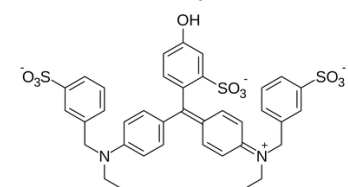
DYES



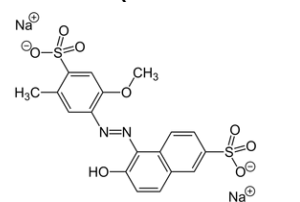
1. Brilliant Blue FCF (FD&C Blue No. 1)
2. Fast Green FCF (FD&C Green No. 3)
3. Allura Red AC (FD&C Red No. 40)
4. Brilliant Black BN



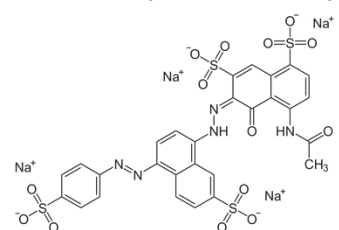
Brilliant Blue FCF (FD&C Blue No. 1)



Fast Green FCF (FD&C Green No. 3)



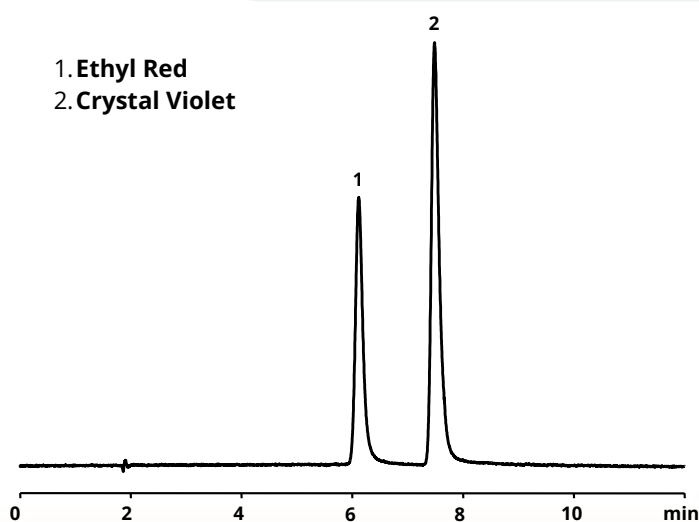
Allura Red AC (FD&C Red No. 40)



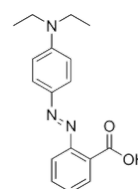
Brilliant Black BN

Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: Gradient MeCN - 85 - 60%, 15 min
Buffer: AmAc pH 5.0 - 10 mM
Flow rate: 1.0 mL/min
Detection: Vis 510 nm, 590 nm

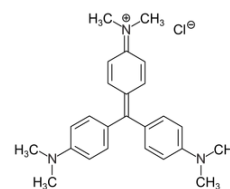
1. Ethyl Red
2. Crystal Violet



Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: Gradient MeCN - 20 - 40%, 10 min
Buffer: AmAc pH 5.0 - 10 mM
Flow rate: 1.0 mL/min
Detection: Vis 560 nm



Ethyl Red



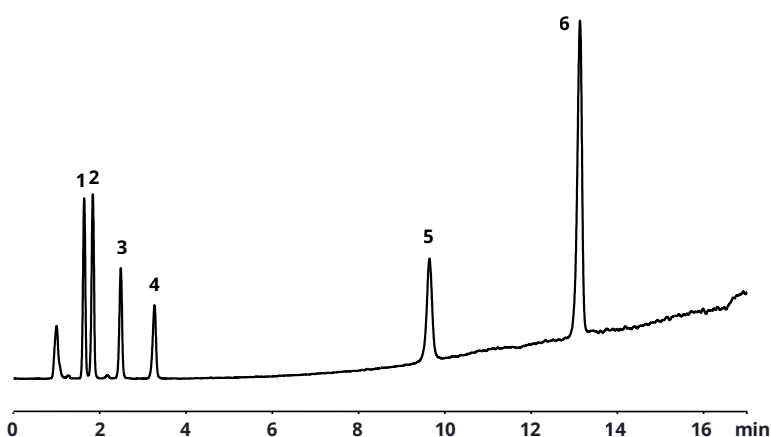
Crystal Violet

Synthetic dyes encompass a wide range of chemical structures, charge states, and polarities, making their chromatographic separation challenging. Chromni™ utilizes a multimode separation approach, providing versatile interactions for the analysis of structurally diverse dyes, from highly charged food colorants to basic and aromatic dye compounds.

Applications

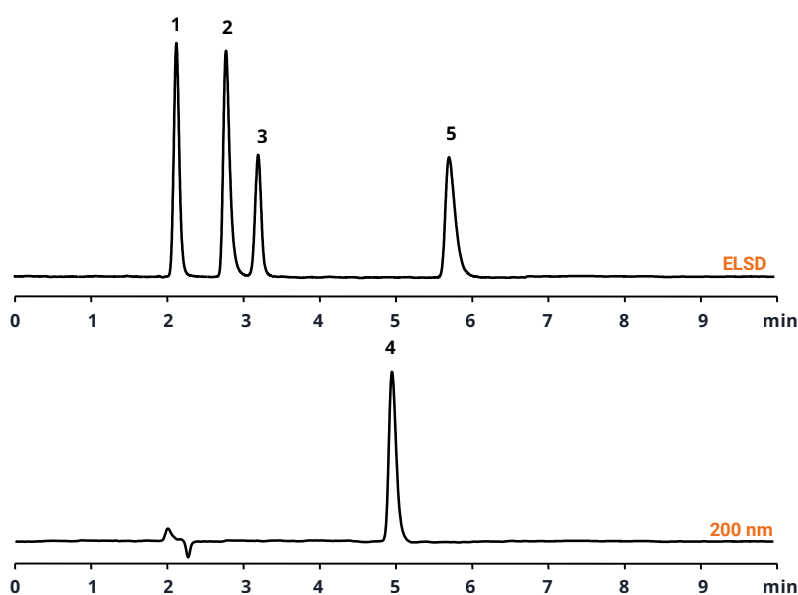
INORGANIC IONS

Chromni™ provides versatile mixed-mode interactions for the separation of inorganic ions with different charge states and polarities. Ionic interactions with the stationary phase, combined with differences in ion charge, hydration, and polarity, enable effective differentiation of monovalent, divalent, and trivalent species. This broad selectivity allows simultaneous analysis of diverse inorganic anions and cations, including chlorate, nitrate, bromate, chloride, sulfate, sodium, potassium, magnesium, nickel, and chromium ions.



- | | |
|------------------------------------|-------------------------------------|
| 1. ClO_3^- (chlorate ion) | 4. Cl^- (chloride ion) |
| 2. NO_3^- (nitrate ion) | 5. Na^+ (sodium ion) |
| 3. BrO_3^- (bromate ion) | 6. SO_4^{2-} (sulfate ion) |

Column: Chromni™ (coated)
Column size: 3.2 × 100 mm, 3 μm
Column part number: CHR-32.100.0310.C
Mobile phase: Gradient MeCN - 90 - 70%, 15 min
Buffer: AmAc pH 5.0 - 10 mM
Flow rate: 0.5 mL/min
Detection: ELSD

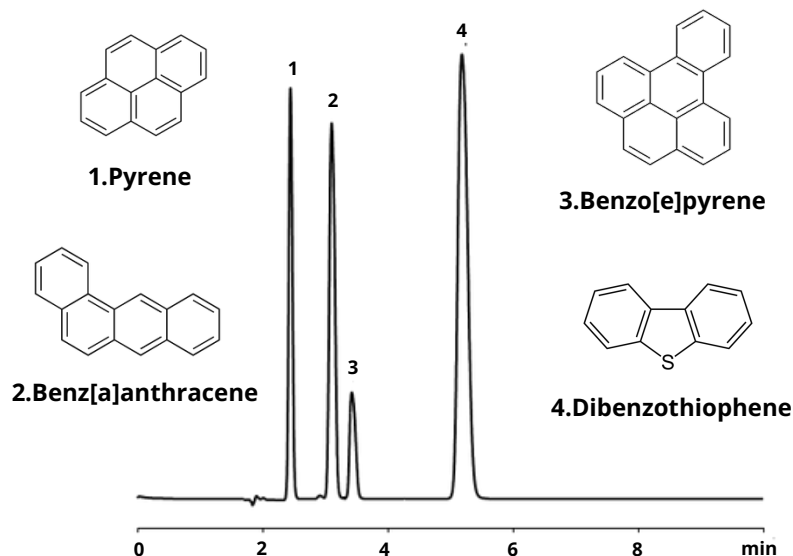


- | | |
|---------------------------------------|--|
| 1. K^+ (potassium ion) | 4. NO_3^- (nitrate ion) |
| 2. Ni^{2+} (nickel (II) ion) | 5. Cr^{3+} (chromium (III) ion) |
| 3. Mg^{2+} (magnesium ion) | |

Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310.C
Mobile phase: MeCN/H₂O - 80/20%
Buffer: TFA - 0.2%
Flow rate: 1.0 mL/min
Detection: ELSD, UV 200 nm

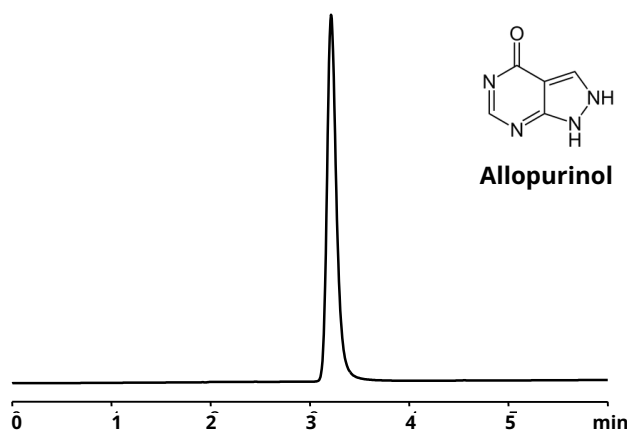
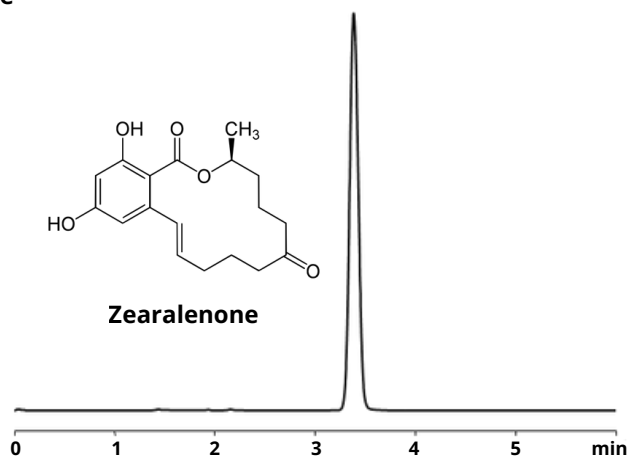
Applications

NON-AQUEOUS ANALYSIS



Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeOH/MeCN – 10/90%
Buffer: None
Flow rate: 1.0 mL/min
Detection: UV 272 nm

Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeOH – 100%
Buffer: None
Flow rate: 1.0 mL/min
Detection: UV 264 nm



Column: Chromni™ (coated)
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: EtOH– 100%
Buffer: None
Flow rate: 1.0 mL/min
Detection: UV 250 nm

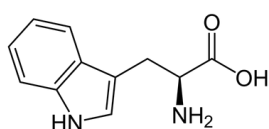
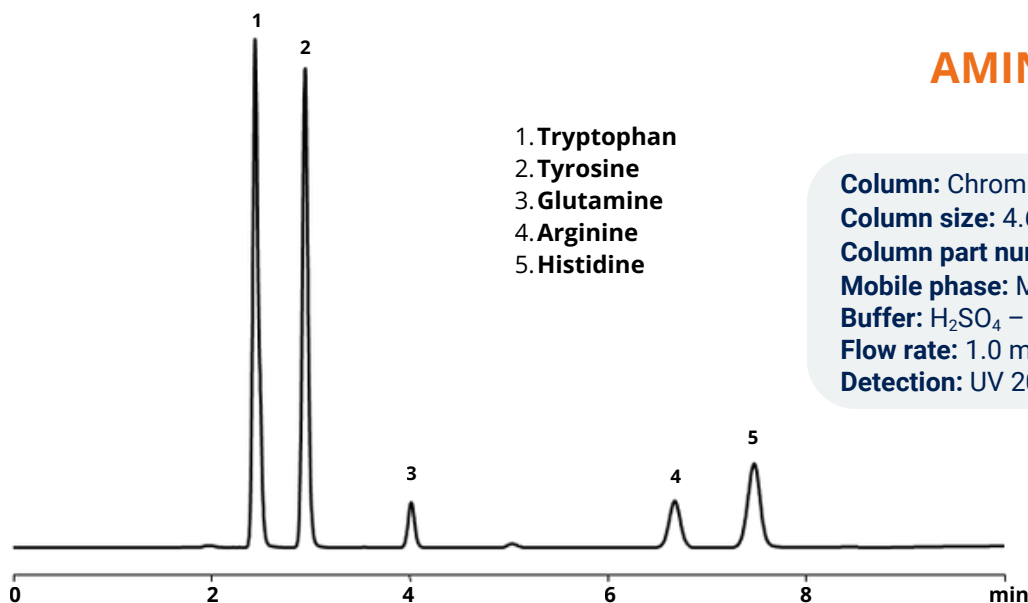
Traditional single-mode columns often exhibit limited selectivity under non-aqueous conditions due to their reliance on a single dominant retention mechanism. By combining multiple interaction modes, Chromni™ maintains versatile retention behavior in organic-rich mobile phases, enabling the analysis of a broad range of compounds under simple non-aqueous conditions.

Applications

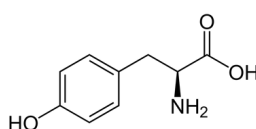
AMINO ACIDS

1. Tryptophan
2. Tyrosine
3. Glutamine
4. Arginine
5. Histidine

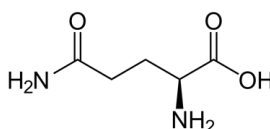
Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeCN/H₂O – 80/20%
Buffer: H₂SO₄ – 0.2%
Flow rate: 1.0 mL/min
Detection: UV 200 nm



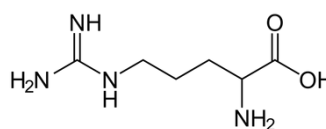
1. Tryptophan



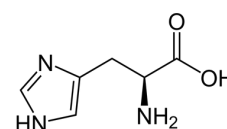
2. Tyrosine



3. Glutamine



4. Arginine

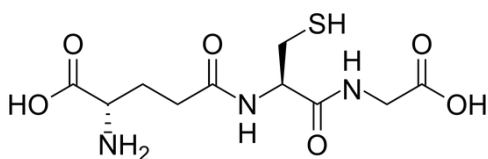
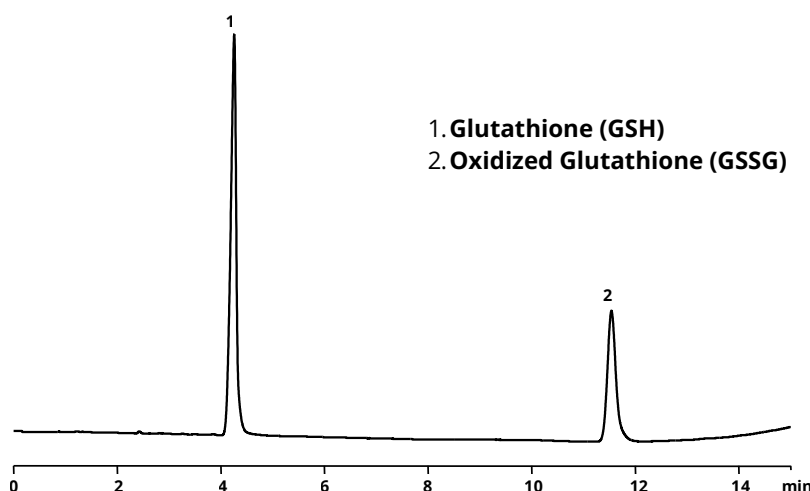


5. Histidine

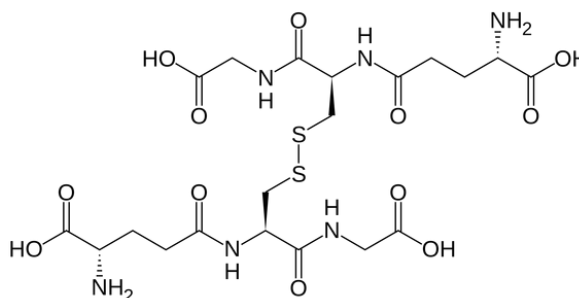
GLUTATHIONE AND OXIDIZED GLUTATHIONE (GSSG) SEPARATION

1. Glutathione (GSH)
2. Oxidized Glutathione (GSSG)

Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: Hold 80% MeCN, 5 min → Gradient 80–70% MeCN, 10 min
Buffer: H₃PO₄ – 0.1%
Flow rate: 1.0 mL/min
Detection: UV 200 nm



1. Glutathione (GSH)



2. Oxidized Glutathione (GSSG)

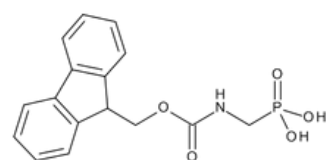
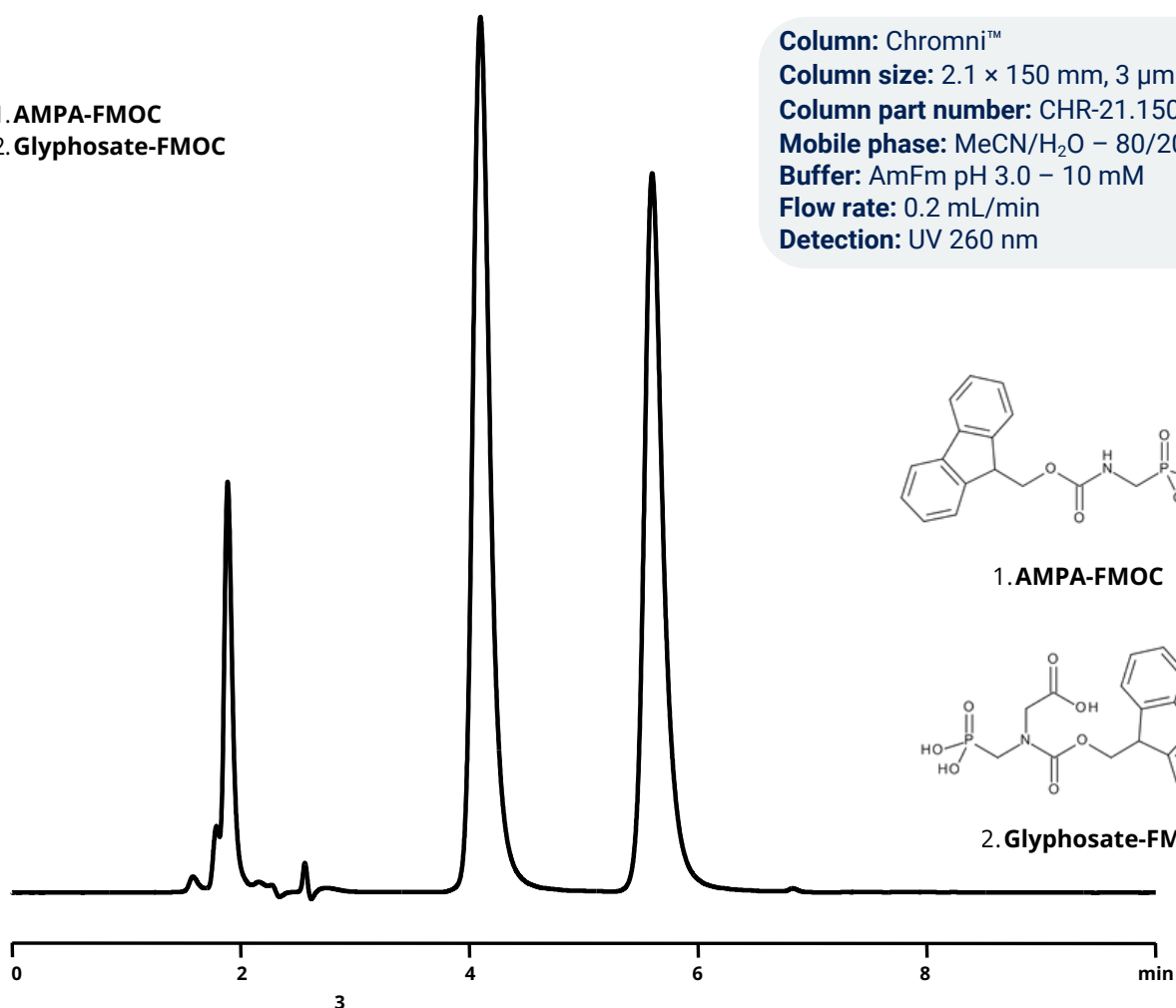
Applications

FMOC DERIVATIZED AMPA AND GLYPHOSATE

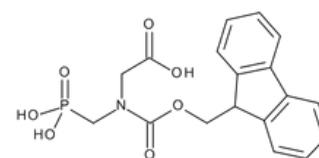
Glyphosate is a widely used herbicide, while aminomethylphosphonic acid (AMPA) is its primary environmental degradation product. Both compounds are highly polar and lack strong UV-absorbing groups, making direct UV detection challenging. FMOC (9-fluorenylmethyl chloroformate) derivatization converts AMPA and glyphosate into UV-active derivatives, enabling detection at 260 nm. Combined with Chromni™ and a simple mobile-phase system, this approach provides straightforward separation, detection, and quantification of AMPA and glyphosate in samples

1. AMPA-FMOC
2. Glyphosate-FMOC

Column: Chromni™
Column size: 2.1 × 150 mm, 3 µm
Column part number: CHR-21.150.0310.C
Mobile phase: MeCN/H₂O – 80/20%
Buffer: AmFm pH 3.0 – 10 mM
Flow rate: 0.2 mL/min
Detection: UV 260 nm



1. AMPA-FMOC



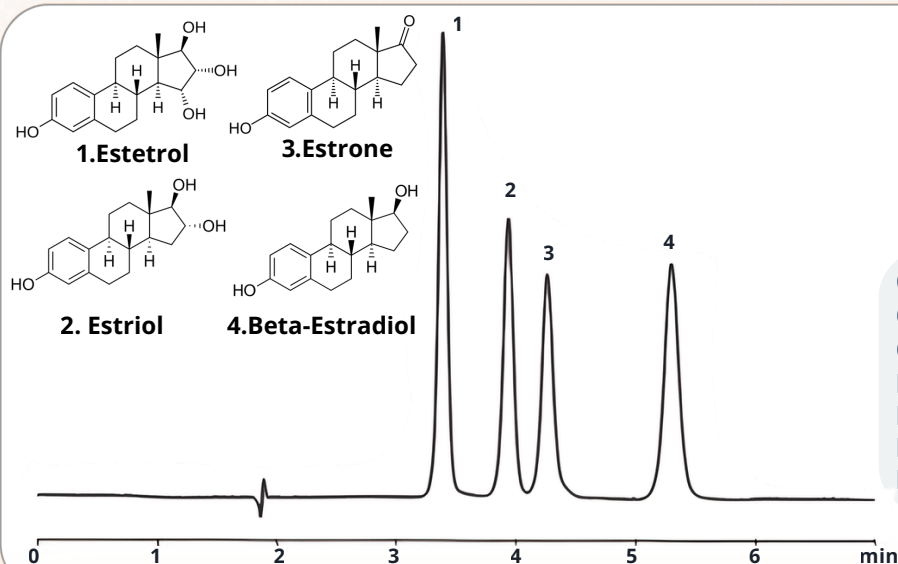
2. Glyphosate-FMOC

Applications

SEPARATION OF ESTROGEN HORMONES ON CHROMNI™

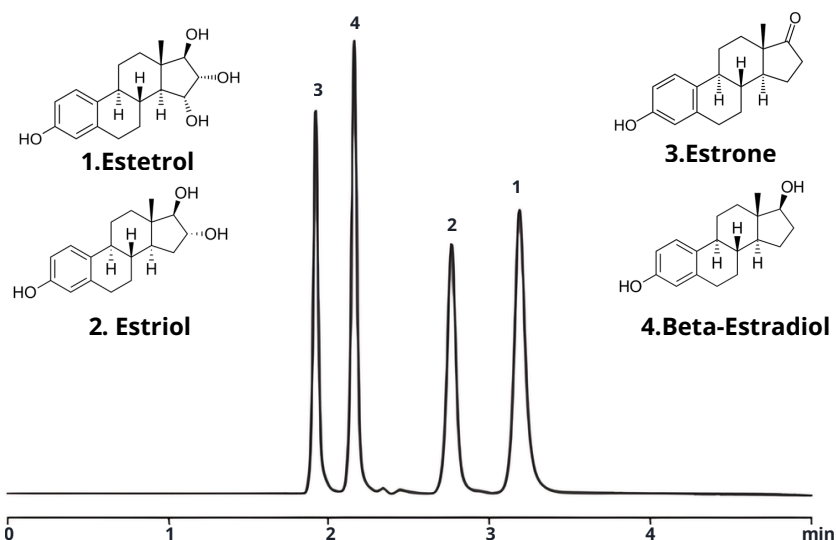
Chromni™ columns deliver exceptional flexibility for separating challenging analytes, such as estrogen hormones. In reverse-phase (RP) mode, these hormones elute in one order, while in HILIC mode, the elution order can shift dramatically, revealing a distinctly different separation profile. This unique capability adds an extra dimension of selectivity across multiple modes. By harnessing multiple interaction mechanisms within a single stationary phase, Chromni™ columns provide improved resolution, greater method development flexibility, and the ability to tailor separations to the complexity of real-world samples.

ONE COLUMN. TWO SEPARATION MODES.



HILIC MODE

Column: Chromni™
Column size: 4.6 × 150 mm, 3 μm
Column part number: CHR-46.150.0310
Mobile phase: MeCN/H₂O – 90/10%
Buffer: None
Flow rate: 1.0 mL/min
Detection: UV 280 nm



Contact Us

We're Here to Help

Our team is ready to support your success with Chromni™ columns and tailored HPLC solutions.



Product Information

sales@sielc.com



Method Development

research@sielc.com



Accounts Payable

finance@sielc.com

BEFORE YOU SCREEN FIVE DIFFERENT COLUMNS

TRY CHROMNI™



Scan to Learn More

Visit sielc.com for more information

Free Method Development

We offer free HPLC method development tailored to your specific compounds, ensuring optimized separations with reliable, reproducible results. Free custom solutions—designed for seamless analytical performance.

Call: 847 229-2629

Fax: 847 655-6079

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