

Affordable Chiral Columns, Brilliant Separation Power

- Guaranteed alternatives to CHIRALCEL[®] and CHIRALPAK[®] columns



NEW

Amylose-O-CONH

Lux Amylose-1
Guaranteed Alternative to
CHIRALPAK[®] AD[®] Columns



Lux Chiral Columns

Dependable. Scalable. Affordable.

- Stable in Normal Phase (NP), Polar Organic (PO), Reversed Phase (RP), and Supercritical Fluid Chromatography (SFC) conditions
- 3 μm and 5 μm for packed columns, and 10 μm and 20 μm bulk media for scale-up
- High efficiency, high loading capacity, and outstanding durability

Lux Chiral Stationary Phases

Lux Amylose-1	Amylose tris(3,5-dimethylphenylcarbamate)	6
Lux Amylose-2	Amylose tris(5-chloro-2-methylphenylcarbamate)	7
Lux Cellulose-1	Cellulose tris(3,5-dimethylphenylcarbamate)	8
Lux Cellulose-2	Cellulose tris(3-chloro-4-methylphenylcarbamate)	9
Lux Cellulose-3	Cellulose tris(4-methylbenzoate)	10
Lux Cellulose-4	Cellulose tris(4-chloro-3-methylphenylcarbamate)	11



Preparative Advantage

Axia™ Packed Technology	12-13
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SFC Compatibility

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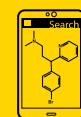
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“Lux Axia preparative columns are wonderful! I regularly use Lux chiral stationary phase Cellulose-2 and Cellulose-4 and less frequently, the Lux Amylose-2. In our community of chiral analysis/purification scientists, there are some who use the CC4 column instead of the *equivalent* Lux Cellulose-4. On several occasions we’ve seen separation and good peak shape on the Lux Cellulose-4 that was completely missing from the CC4. Customer support and delivery times are always within a few days. ”

Julia G. Christie. GlaxoSmithKline, USA.



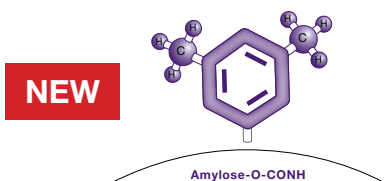
guarantee

If Lux analytical columns (≤ 4.6 mm ID) do not provide at least an equivalent or better separation as compared to a competing column of the same particle size, similar phase and dimensions, send in your comparative data within 45 days and keep the Lux column for FREE.

Six Chiral Stationary Phases With Brilliant Separation Power

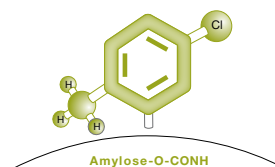
Lux columns are guaranteed to perform as well or better than the equivalent DAICEL Chiral Technologies column. Lux phases can also provide alternative selectivity to other chiral selectors for the most challenging chiral separations.

Lux columns offer a wide and complementary range of enantioselectivity for even the most difficult chiral separation projects. Our six distinct Lux polysaccharide phases can resolve over 92% of your enantiomers*.



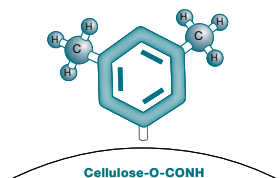
Lux Amylose-1

Amylose tris(3,5-dimethylphenylcarbamate)



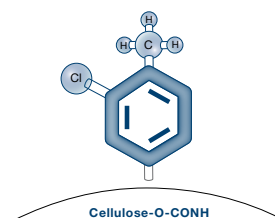
Lux Amylose-2

Amylose tris(5-chloro-2-methylphenylcarbamate)



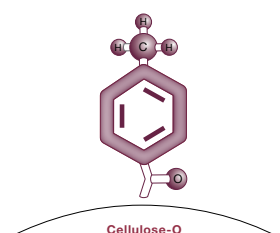
Lux Cellulose-1

Cellulose tris(3,5-dimethylphenylcarbamate)



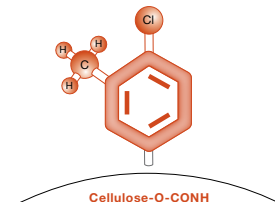
Lux Cellulose-2

Cellulose tris(3-chloro-4-methylphenylcarbamate)



Lux Cellulose-3

Cellulose tris(4-methylbenzoate)



Lux Cellulose-4

Cellulose tris(4-chloro-3-methylphenylcarbamate)

If you are using one of the DAICEL columns below:	Guaranteed alternative:	Phase description for both columns:
CHIRALPAK® AD®, AD-H®, AD-3, AD-RH®, and AD-3R	Lux Amylose-1	Amylose tris(3,5-dimethylphenylcarbamate)
CHIRALPAK AY®, AY-H®, AY-3, AY-RH, and AY-3R	Lux Amylose-2	Amylose tris(5-chloro-2-methylphenylcarbamate)
CHIRALCEL® OD®, OD-H®, OD-3, OD-RH®, and OD-3R	Lux Cellulose-1	Cellulose tris(3,5-dimethylphenylcarbamate)
CHIRALCEL OZ®, OZ-H®, OZ-3, OZ-RH, and OZ-3R	Lux Cellulose-2	Cellulose tris(3-chloro-4-methylphenylcarbamate)
CHIRALCEL OJ®, OJ-H®, OJ-3, OJ-RH®, and OJ-3R	Lux Cellulose-3	Cellulose tris(4-methylbenzoate)
CHIRALCEL OX-H, OX-3, OX-RH, and OX-3R	Lux Cellulose-4	Cellulose tris(4-chloro-3-methylphenylcarbamate)

*Based on 233 compounds screened on all five Lux phases.



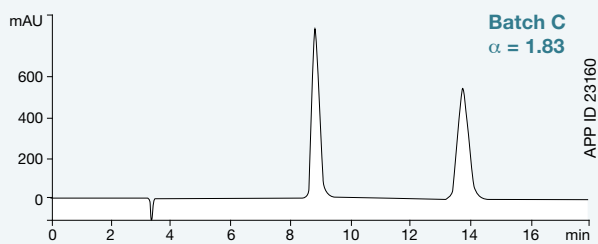
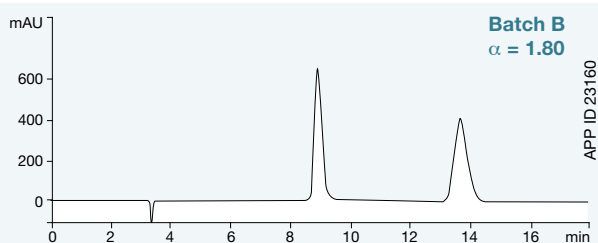
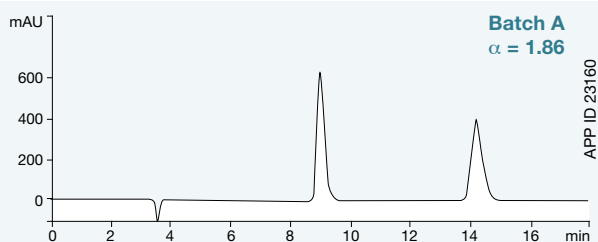
Many chiral screening groups use all 6 Lux phases on their primary screen to increase chances of locating the optimal enantiomeric separation.

Dependability

Batch-to-Batch, Column-to-Column

Your chiral separations depend upon consistent quantitation and consistent results. With the reliability of the Lux chiral column LC product line, you do not have to settle for the inconsistent results that many other polysaccharide CSPs show. Our highest standards of quality will ensure that you are fully satisfied with each and every Lux chiral column.

Lux 5 μ m Cellulose-1



Conditions for all batches:

Dimensions: 250 x 4.6 mm

Mobile Phase: 0.1 % Diethylamine in Hexane /
0.1 % Diethylamine in Ethanol
(80:20)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm

Temperature: Ambient

Sample: Propranolol

Quality Assurance

Phenomenex's quality management system is ISO 9001:2008 certified. This certification validates that all our processes are fully established, functional and meet international standards. Phenomenex's employees believe that the implementation of our quality system is everyone's responsibility. From the manufacturing of our products to their timely delivery and continued customer support, we are dedicated to continually improve our processes to consistently meet or exceed our customers' expectations.

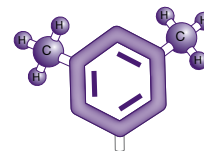
QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
== ISO 9001:2008 ==

NEW

Lux Amylose-1

Dimethyl Amylose Chiral Selector

This universally trusted amylose phenylcarbamate derivative is absolutely essential to any chiral screen. Lux Amylose-1 is a guaranteed alternative to CHIRALPAK® AD®. Expect equivalent or better performance when using this Lux phase.



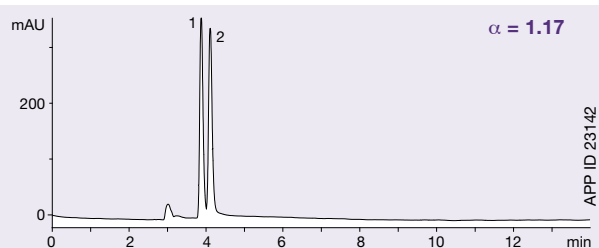
Amylose-O-CONH

Amylose tris(3,5-dimethylphenylcarbamate)

Guaranteed alternative to
CHIRALPAK® AD®, AD-H®, AD-3,
AD-RH®, and AD-3R

LUX PERFORMANCE ADVANTAGE

Lux 5 µm Amylose-1



Conditions for both columns:

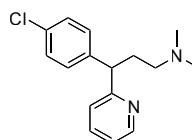
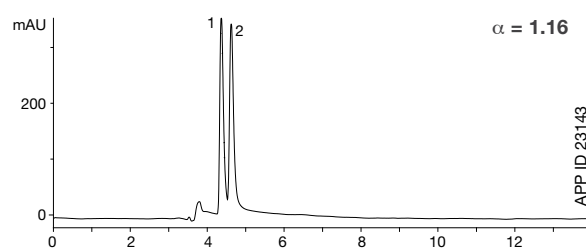
Dimensions: 250 x 4.6 mm

Mobile Phase: 0.1% Diethylamine in Hexane /
0.1% Diethylamine in IPA
(60:40)

Flow Rate: 1 mL/min

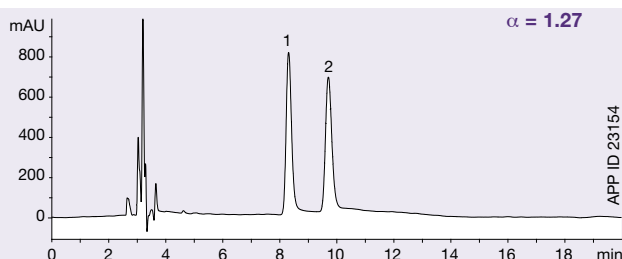
Detection: UV @ 254 nm
Temperature: Ambient

CHIRALPAK® 5 µm AD-H®



Chlorpheniramine

Lux 5 µm Amylose-1



Conditions for both columns:

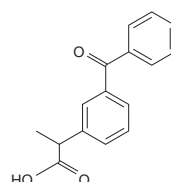
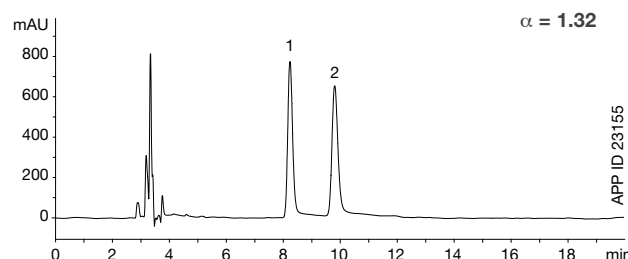
Dimensions: 250 x 4.6 mm

Mobile Phase: 0.1% Formic acid in Hexane /
0.1% Formic acid in IPA
(80:20)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm
Temperature: Ambient

CHIRALPAK 5 µm AD-H



Ketoprofen

Comparative separations may not be representative of all applications.

UPGRADE TO LUX

Manufacturer	Part Number	Description	Particle Size	Dimensions (mm)
Phenomenex	00G-4732-E0	Lux Amylose-1	5 µm	250 x 4.6
DAICEL	19325	CHIRALPAK AD-H	5 µm	250 x 4.6
Phenomenex	00G-4732-P0-AX	Lux Amylose-1	5 µm	250 x 21.2
DAICEL	19345	CHIRALPAK AD-H	5 µm	250 x 20

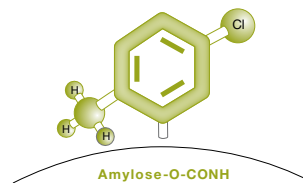
More column dimensions
on page 22



Lux Amylose-2

Chlorinated Amylose Chiral Selector

This first-to-market chlorinated amylose phenylcarbamate phase offers chiral recognition properties that greatly increase the chances of achieving chiral resolution.

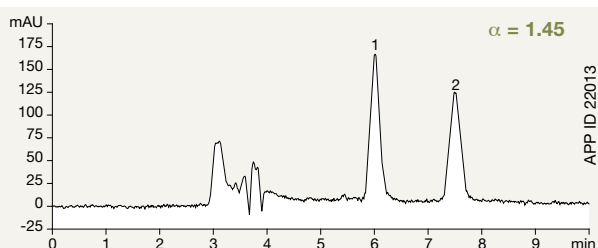


Amylose tris(5-chloro-2-methylphenylcarbamate)

Guaranteed alternative to
CHIRALPAK® AY®, AY-H®, AY-3,
AY-RH, and AY-3R

LUX PERFORMANCE ADVANTAGE

Lux 5 µm Amylose-2



Conditions for both columns:

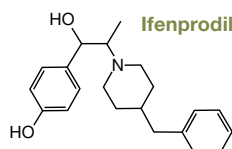
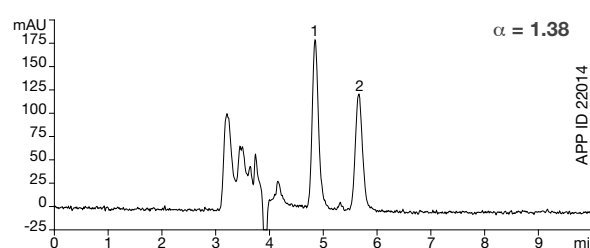
Dimensions: 250 x 4.6 mm

Mobile Phase: 0.1 % Diethylamine in Hexane /
0.1 % Diethylamine in Ethanol
(80:20)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm
Temperature: Ambient

CHIRALPAK® 5 µm AY-H®

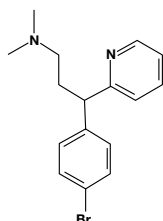


Comparative separations may not be representative of all applications.

UPGRADE TO LUX

Manufacturer	Part Number	Description	Particle Size	Dimensions (mm)
Phenomenex	00G-4472-E0	Lux Amylose-2	5 µm	250 x 4.6
DAICEL	47325	CHIRALPAK AY-H	5 µm	250 x 4.6
Phenomenex	00G-4472-N0	Lux Amylose-2	5 µm	250 x 10
DAICEL	47335	CHIRALPAK AY-H	5 µm	250 x 10
Phenomenex	00G-4472-P0-AX	Lux Amylose-2	5 µm	250 x 21.2
DAICEL	47345	CHIRALPAK AY-H	5 µm	250 x 20

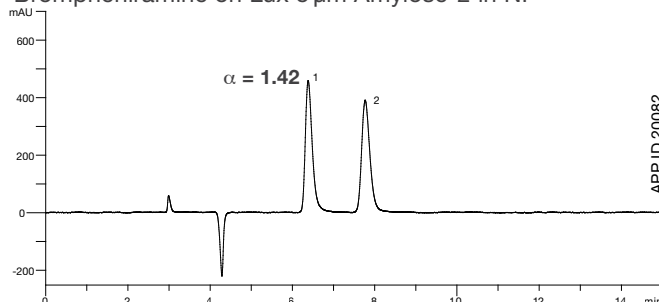
More column dimensions
on page 22



Brompheniramine

Are you analyzing Anti-Allergic drugs?

Brompheniramine on Lux 5 µm Amylose-2 in NP

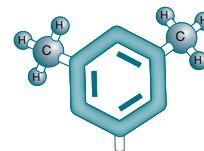


For additional Anti-Allergic Drug separations, request technote:
TN-1143 Chromatographic Enantioseparation of 15 Racemic Anti-Allergic Drugs.

Lux Cellulose-1

Dimethyl Cellulose Chiral Selector

This universally trusted cellulose phenylcarbamate derivative is absolutely essential to any chiral screen. Lux Cellulose-1 is a guaranteed alternative to Chiralcel® OD-H®. Expect equivalent or better performance when using this Lux phase.



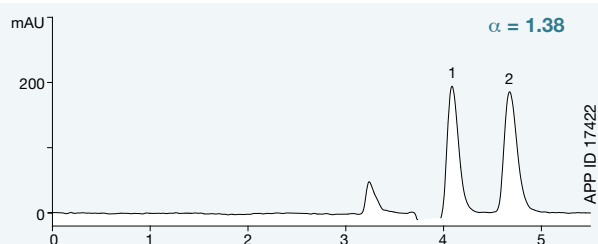
Cellulose-O-CONH

Cellulose tris(3,5-dimethylphenylcarbamate)

Guaranteed alternative to
CHIRALCEL® OD®, OD-H®, OD-3,
OD-RH, and OD-3R

LUX PERFORMANCE ADVANTAGE

Lux 5 µm Cellulose-1



Conditions for both columns:

Dimensions: 250 x 4.6 mm

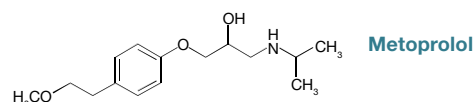
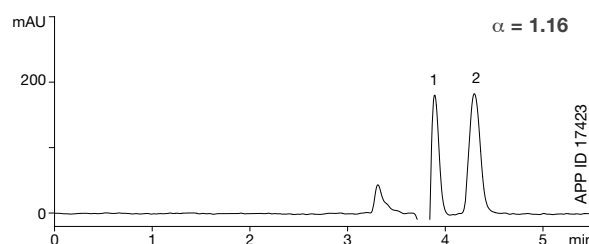
Mobile Phase: 0.1 % Diethylamine in Acetonitrile /
0.1 % Diethylamine in Isopropanol
(95:5)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm

Temperature: Ambient

CHIRALCEL® 5 µm OD-H®



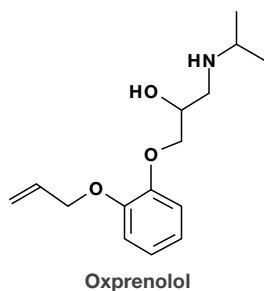
Metoprolol

Comparative separations may not be representative of all applications.

UPGRADE TO LUX

Manufacturer	Part Number	Description	Particle Size	Dimensions (mm)
Phenomenex	00G-4459-E0	Lux Cellulose-1	5 µm	250 x 4.6
DAICEL	14325	CHIRALPAK OD-H	5 µm	250 x 4.6
Phenomenex	00G-4459-N0	Lux Cellulose-1	5 µm	250 x 10
DAICEL	14335	CHIRALPAK OD-H	5 µm	250 x 10
Phenomenex	00G-4459-P0-AX	Lux Cellulose-1	5 µm	250 x 21.2
DAICEL	14345	CHIRALPAK OD-H	5 µm	250 x 20

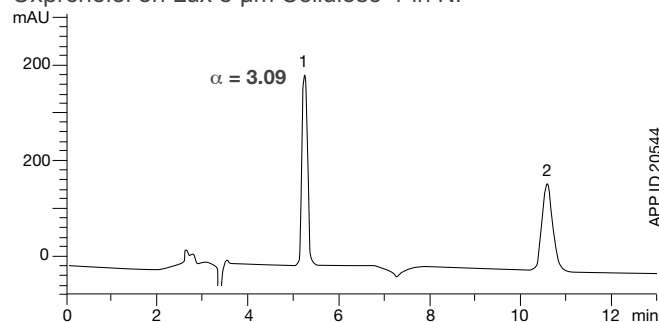
More column dimensions
on page 22



Oxprenolol

Are you analyzing Beta Blockers?

Oxprenolol on Lux 5 µm Cellulose-1 in NP

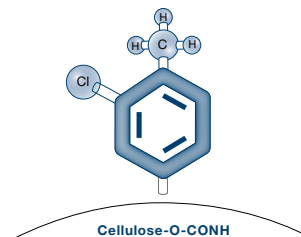


For additional Beta Blocker separations, request technote:
TN-1142 Chiral Separations of 15 Beta Blockers.

Lux Cellulose-2

Chlorinated Cellulose Carbamate Phase

This first-to-market halogenated cellulose phenylcarbamate derivative offers unique chiral recognition abilities that complement the rest of the Lux family of columns.

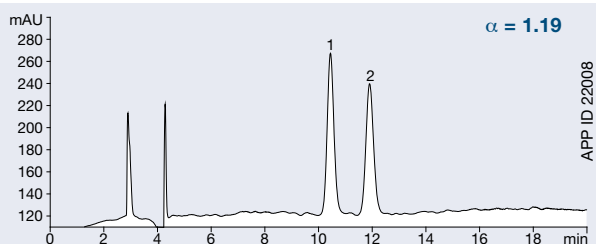


Cellulose tris(3-chloro-4-methylphenylcarbamate)

Guaranteed alternative to
CHIRALCEL® OZ, OZ-H®,
OZ-3, OZ-RH, and OZ-3R

LUX PERFORMANCE ADVANTAGE

Lux 5 µm Cellulose-2



Conditions for both columns:

Dimensions: 250 x 4.6 mm

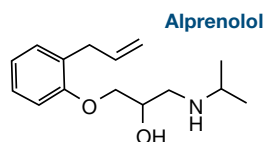
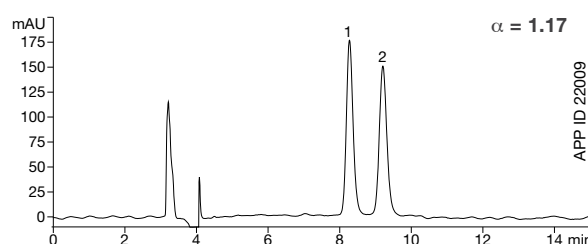
Mobile Phase: 0.1 % Diethylamine in Hexane /
0.1 % Diethylamine in Ethanol
(90:10)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm

Temperature: Ambient

CHIRALCEL® 5 µm OZ-H®

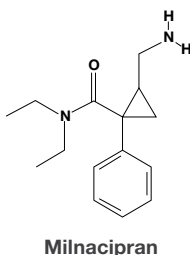


Comparative separations may not be representative of all applications.

UPGRADE TO LUX

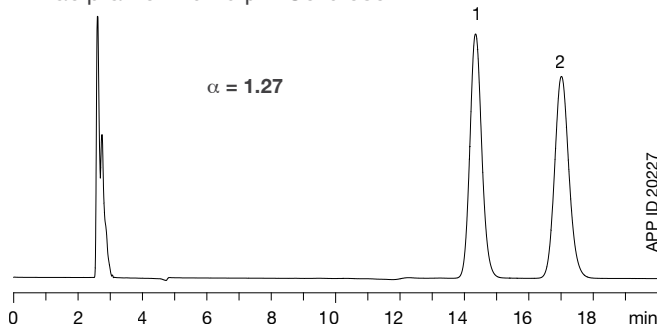
Manufacturer	Part Number	Description	Particle Size	Dimensions (mm)
Phenomenex	00G-4457-E0	Lux Cellulose-2	5 µm	250 x 4.6
DAICEL	42325	CHIRALCEL OZ-H	5 µm	250 x 4.6
Phenomenex	00G-4457-N0	Lux Cellulose-2	5 µm	250 x 10
DAICEL	42335	CHIRALCEL OZ-H	5 µm	250 x 10
Phenomenex	00G-4457-P0-AX	Lux Cellulose-2	5 µm	250 x 21.2
DAICEL	42345	CHIRALCEL OZ-H	5 µm	250 x 20

More column dimensions
on page 22



Are you analyzing Anti-Depressive and Anti-Anxiety Drugs?

Milnacipran on Lux 5 µm Cellulose-2 in RP

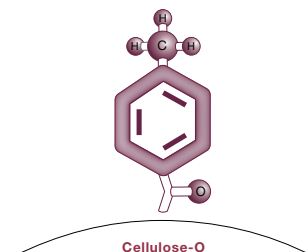


For additional Anti-Depressive y Anti-Anxiety Drug separations,
request technote: TN-1146 Chromatographic Enantioseparation of
13 Racemic Anti-Depressive y Anti-Anxiety Drugs.

Lux Cellulose-3

Cellulose Ester Phase

This cellulose methylbenzoate derivative offers distinct and complementary chiral recognition abilities.

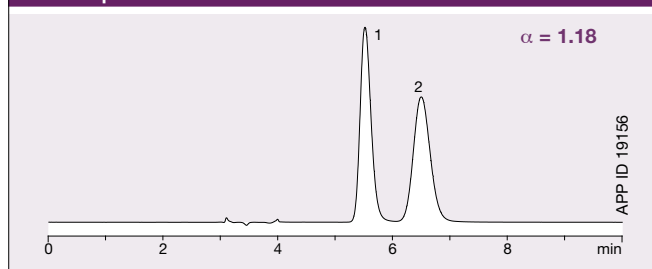


Cellulose tris(4-methylbenzoate)

Guaranteed alternative to
CHIRALCEL® OJ®, OJ-H®, OJ-3,
OJ-RH®, and OJ-3R

LUX PERFORMANCE ADVANTAGE

Lux 5 µm Cellulose-3



Conditions for both columns:

Dimensions: 250 x 4.6 mm

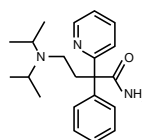
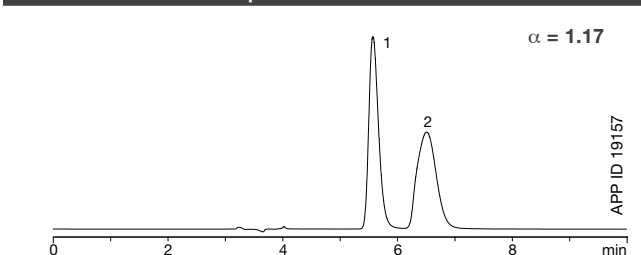
Mobile Phase: 0.1 % Diethylamine in Hexane /
0.1 % Diethylamine in Ethanol
(90:10)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm

Temperature: Ambient

CHIRALCEL® 5 µm OJ-H®



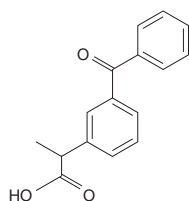
Disopyramide

Comparative separations may not be representative of all applications.

UPGRADE TO LUX

Manufacturer	Part Number	Description	Particle Size	Dimensions (mm)
Phenomenex	00G-4493-E0	Lux Cellulose-3	5 µm	250 x 4.6
DAICEL	17325	CHIRALCEL OJ-H	5 µm	250 x 4.6
Phenomenex	00G-4493-N0	Lux Cellulose-3	5 µm	250 x 10
DAICEL	17335	CHIRALCEL OJ-H	5 µm	250 x 10
Phenomenex	00G-4493-P0-AX	Lux Cellulose-3	5 µm	250 x 21.2
DAICEL	17345	CHIRALCEL OJ-H	5 µm	250 x 20

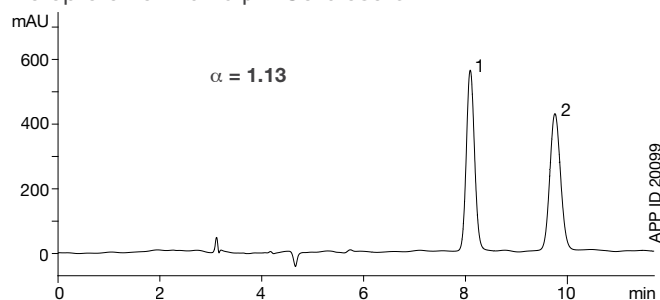
More column dimensions
on page 22



Ketoprofen

Are you analyzing Pain Relievers?

Ketoprofen on Lux 5 µm Cellulose-3 in NP

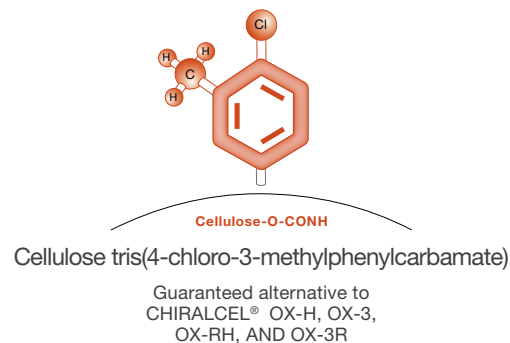


For additional Pain Reliever separations, request technote:
TN-1144 Chromatographic Enantioseparation of 12 Racemic Pain Relievers.

Lux Cellulose-4

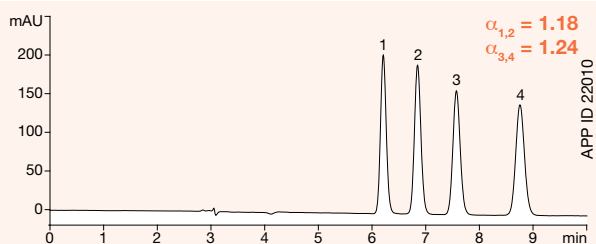
Chlorinated Cellulose Carbamate Phase

This chlorinated cellulose phenylcarbamate derivative offers unique chiral recognition abilities. Expect a high hit percentage on screens with other chlorinated Lux phases.



LUX PERFORMANCE ADVANTAGE

Lux 5 µm Cellulose-4



Conditions for both columns:

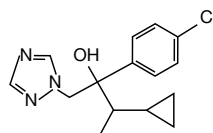
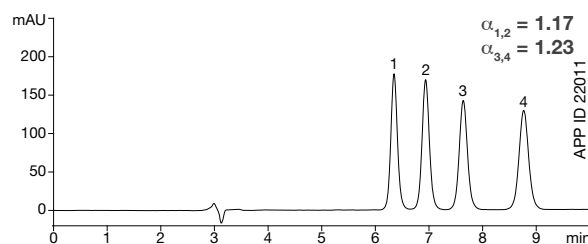
Dimensions: 250 x 4.6 mm

Mobile Phase: 0.1 % Diethylamine in Acetonitrile /
0.1 % Diethylamine in 20 mM
Ammonium bicarbonate
(60:40)

Flow Rate: 1 mL/min

Detection: UV @ 220 nm
Temperature: Ambient

CHIRALCEL® 5 µm OX-RH



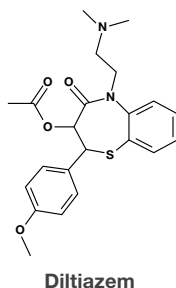
Cyproconazole

Comparative separations may not be representative of all applications.

UPGRADE TO LUX

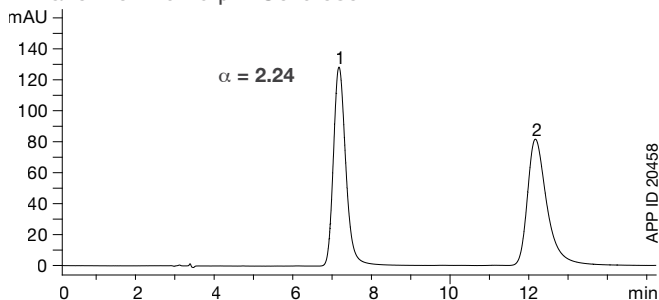
Manufacturer	Part Number	Description	Particle Size	Dimensions (mm)
Phenomenex	00G-4491-E0	Lux Cellulose-4	5 µm	250 x 4.6
DAICEL	63325	CHIRALCEL OX-H	5 µm	250 x 4.6
Phenomenex	00G-4491-N0	Lux Cellulose-4	5 µm	250 x 10
DAICEL	63335	CHIRALCEL OX-H	5 µm	250 x 10
Phenomenex	00G-4491-P0-AX	Lux Cellulose-4	5 µm	250 x 21.2
DAICEL	63345	CHIRALCEL OX-H	5 µm	250 x 20

More column dimensions
on page 22



Are you analyzing Vasodilator Drugs?

Diltiazem on Lux 5 µm Cellulose-4 in NP



For additional Vasodilator Drug separations, request technote:
TN-1145 Chromatographic Enantioseparation of 14 Racemic Vasodilator Drugs.



Maximize Chiral Purification Performance with Axia Packed Columns

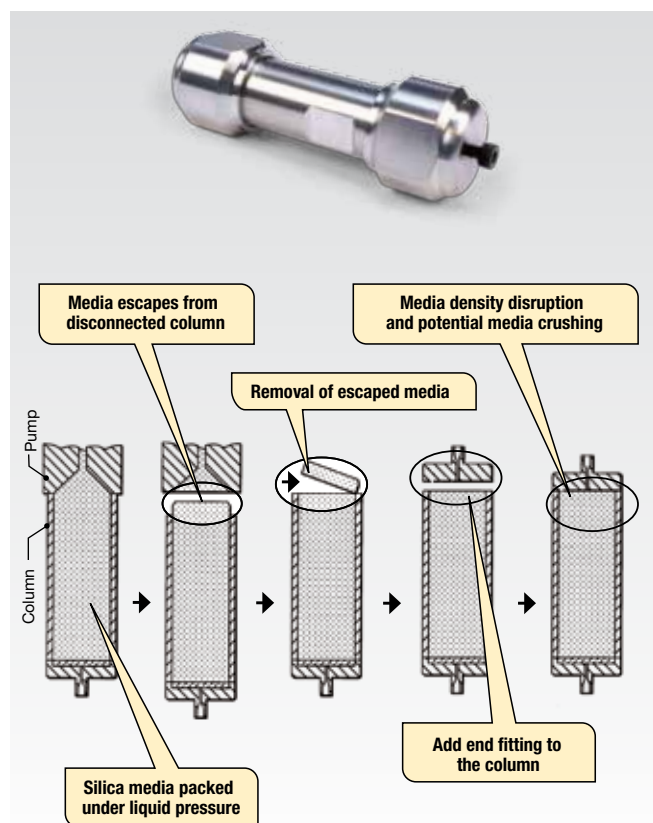
- Longer Column Lifetimes
- Improved Column-to-Column Reproducibility
- Recover Higher Compound Purity



Axia packed preparative columns involve a single axial compression step unlike conventional packed preparative columns like Daicel CHIRALCEL and CHIRALPAK prep columns. During the Axia packing process, the packing piston is locked in place, eliminating any decompression and then re-compression of the media sorbent, thus maintaining media and column bed integrity.

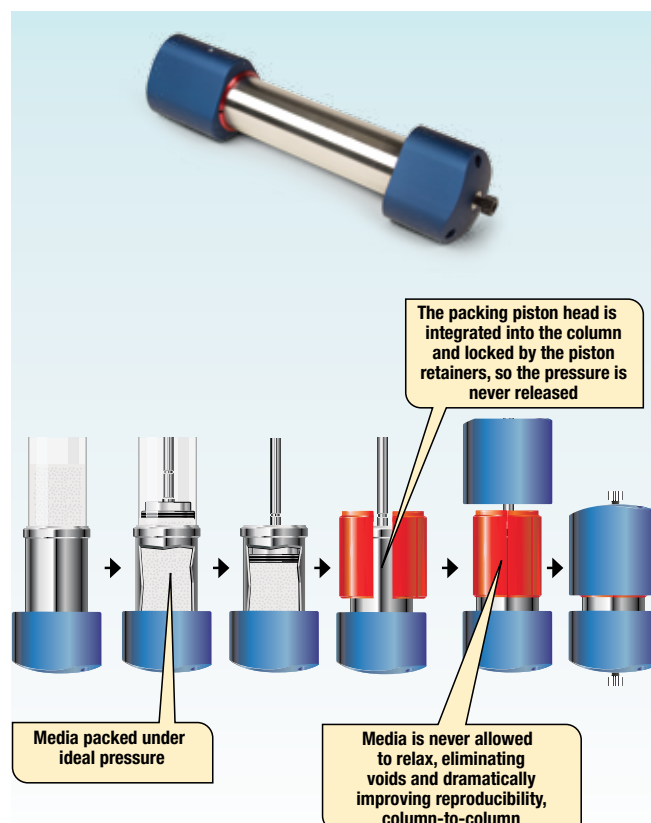
Conventional Packing Process Involves:

Compression → Decompression → Re-compression → Final Column



Axia Packing Process Involves:

Compression → Final Column



View an animated packing process comparison at www.AxiaPrep.com

“Axia packed column has a great efficiency for the separation of several classes of natural compounds. Due to its low back pressure and therefore high flow work conditions, time for conditioning the columns is sped up greatly!”

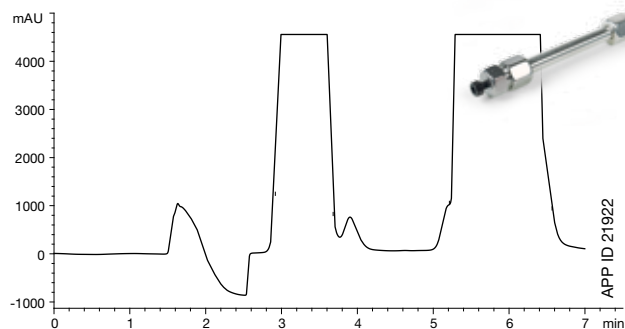
Sylvian Cretton - Europe

Axia™ Outperforms All Other Prep Columns

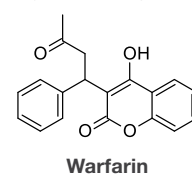
In the example below, the Axia packing technology shows substantial increase in column efficiency resulting in increased resolution over traditionally packed preparative columns. With increased resolution, you are able to increase your sample load enabling you to purify more target compound(s) per purification run. This equates to better throughput and economics.

Warfarin Chiral Purification in Normal Phase Mode

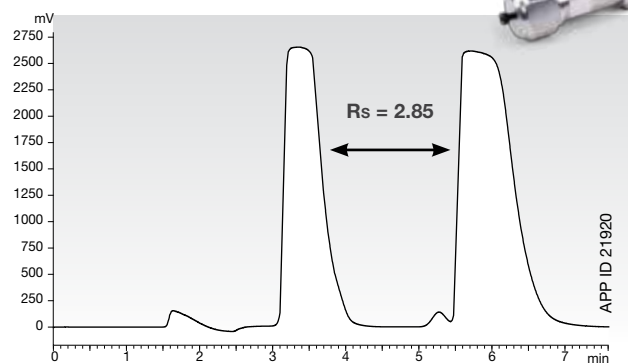
Analytical



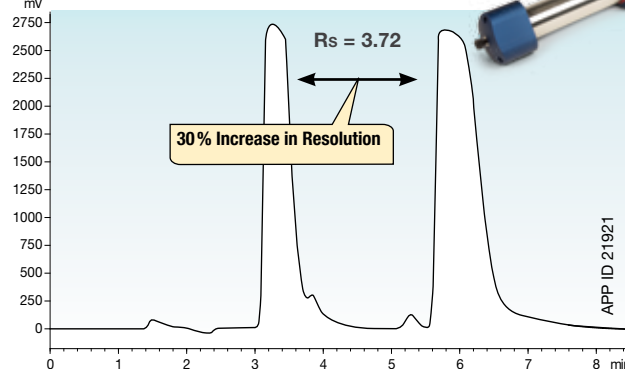
Column: Lux 5 μ m Cellulose-1
Dimensions: 150 x 4.6 mm
Mobile Phase: Hexane/Ethanol (75:25)
Flow Rate: 1 mL/min
Temperature: Ambient
Inj. Volume: 100 μ L



Standard Packing and Hardware



Axia Technology and Hardware



Conditions for both PREP columns:

Media: Lux 5 μ m Cellulose-1
Dimensions: 150 x 21.2 mm
Mobile Phase: Hexane / Ethanol (75:25)

Flow Rate: 20 mL/min
Temperature: Ambient
Inj. Volume: 2 mL

Column (mm)	Analytical 150 x 4.6	Standard 150 x 21.2	Axia 150 x 21.2
Mass Loaded (mg)	2	40	40
Resolution*	1.5	2.85	3.72
Plates (N)	117	535	760

42% Increase in Efficiency

*Resolution calculated with peak width at baseline and center retention time due to the overloaded peaks being off-scale

“We have used Phenomenex Axia prep-HPLC columns for several years and they consistently provide excellent separation and reproducibility for a variety of different compounds.”

Jeremy R. Wolf. ABC Laboratories, USA.

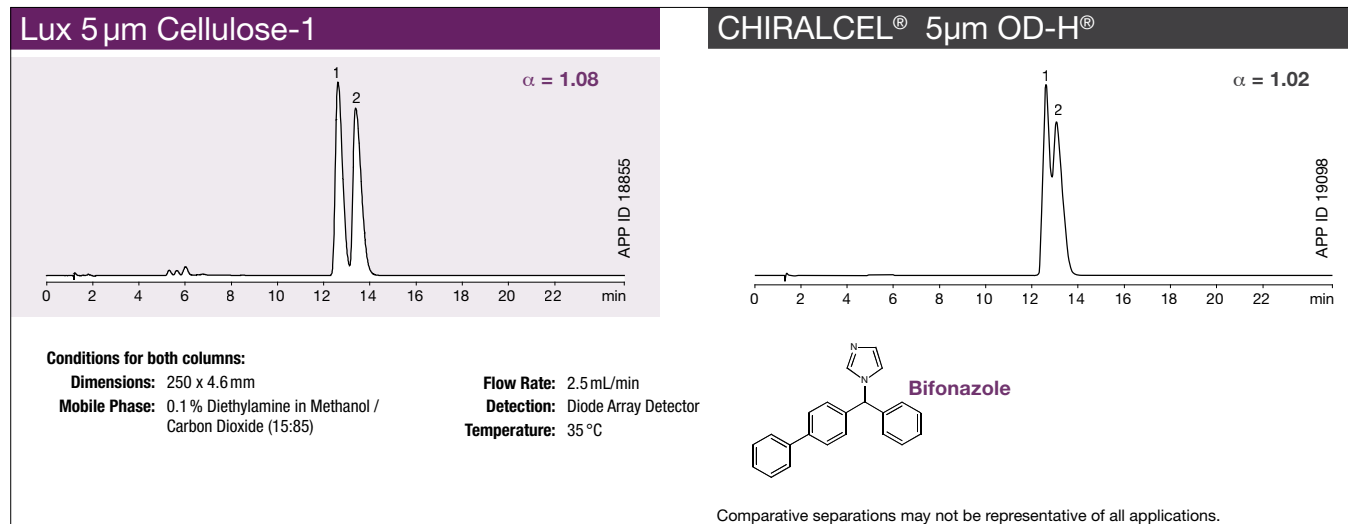


Extreme Stability and Separating Power Under SFC Conditions

All Lux analytical and Axia™ preparative columns are compatible under both SFC and HPLC conditions. Unlike other manufacturers columns, a single Lux column works great for both running conditions.

With a pressure stability up to 300 bar (4350 psi), you can feel confident about running at high operating pressures (if necessary). Lux media is SFC approved and versatile enough to satisfy all of your chiral separation needs.

LUX PERFORMANCE ADVANTAGE



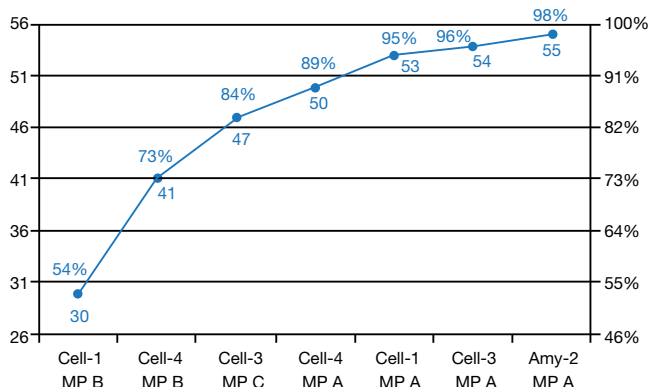
Increase Successful Separation Potential By Using a Variety of Lux Columns

By using 7 chromatographic systems, which require three mobile phases (A, B, and C) and four Lux stationary phases (Cellulose-1, Cellulose-3, Cellulose-4, and Amylose-2), 55 of the 56 test group compounds are baseline separated.



Tip: Lux columns are interchangeable between normal phase and SFC modes with a simple solvent switch. See page 21.

Cumulative baseline separations across seven chromatographic systems made up of four Lux phases and three mobile phases



SFC mobile phases used in this study

MP	Description
A	CO ₂ /(MeOH with 0.25 % IPA and 0.25 % TFA) 90/10
B	CO ₂ /(MeOH with 0.1 % IPA and 0.1 % TFA) 80/20
C	CO ₂ /(2PrOH with 0.5 % IPA and 0.5 % TFA) 90/10

CO₂ = carbon dioxide, MP = mobile phase, MeOH = methanol, 2PrOH = isopropanol/2-propanol, TFA = trifluoroacetic acid, IPA = isopropylamine. For acidic compounds, additive was TFA and for all other compounds (neutral, amphoteric, basic) IPA was used as additive.



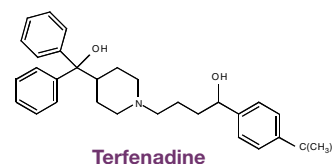
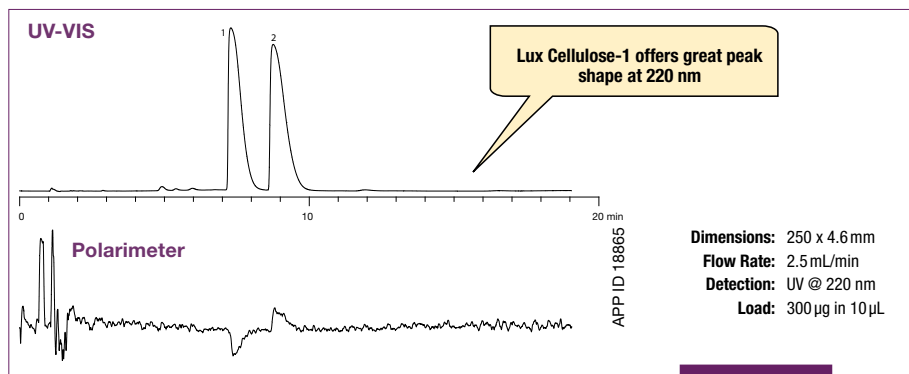
Download Technical Note TN-9003 for more Chiral SFC tips.
www.phenomenex.com/LuxSFC

SFC Preparative Advantage Using Axia™ Packed Technology



With the additional efficiency provided by the Axia packed preparative columns, greater resolution between your enantiomers can be attained thus allowing for greater loadability during purifications.

Analytical Baseline Separation



Conditions for all columns:

Columns: Lux 5 µm Cellulose-1

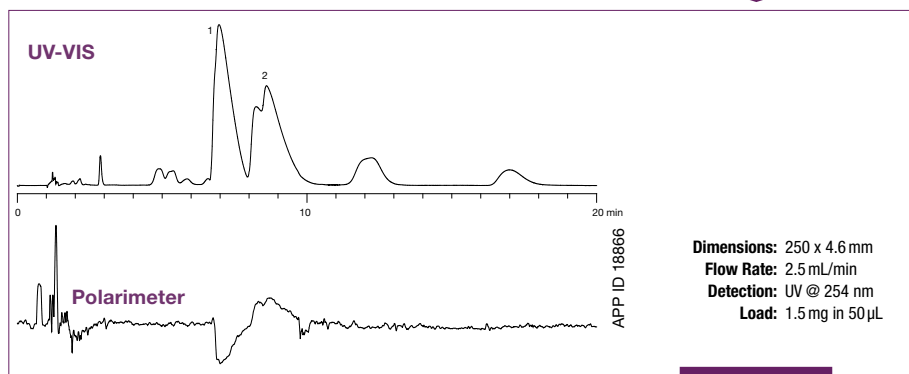
Mobile Phase: Methanol with 0.1 % DEA/
Carbon Dioxide (25:75)

Column Temperature: 35 °C

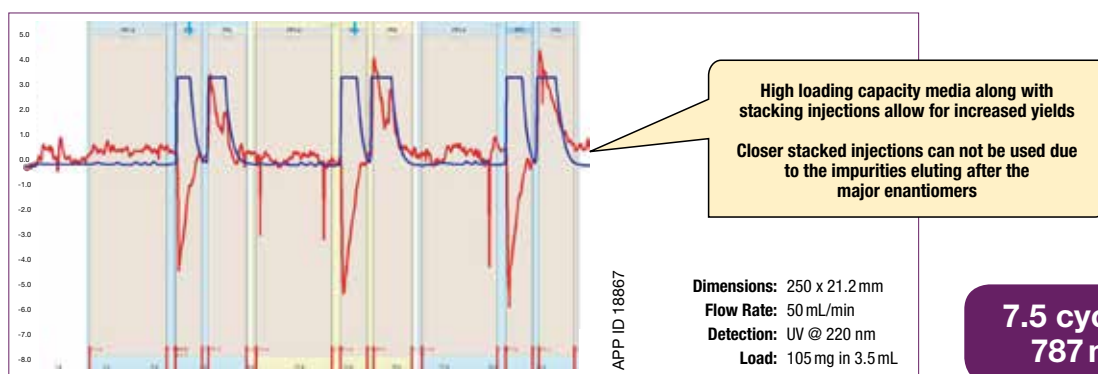
Polarimeter: ALP-PDR-Chiral

Sample: Terfenadine with ethanol
dissolution solvent

Analytical Overload Study



Increased Load Study on Axia Preparative Column

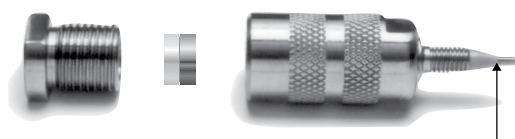


**7.5 cycles per hr/
787 mg per hr**

Save Time and Money with Less Frequent Column Replacement

The easiest way to extend column performance is to prevent contaminants and particulates from getting into your Lux column with the SecurityGuard Cartridge System.

- Protects and extends column lifetimes
- Virtually no change in chromatography
- Simple to use



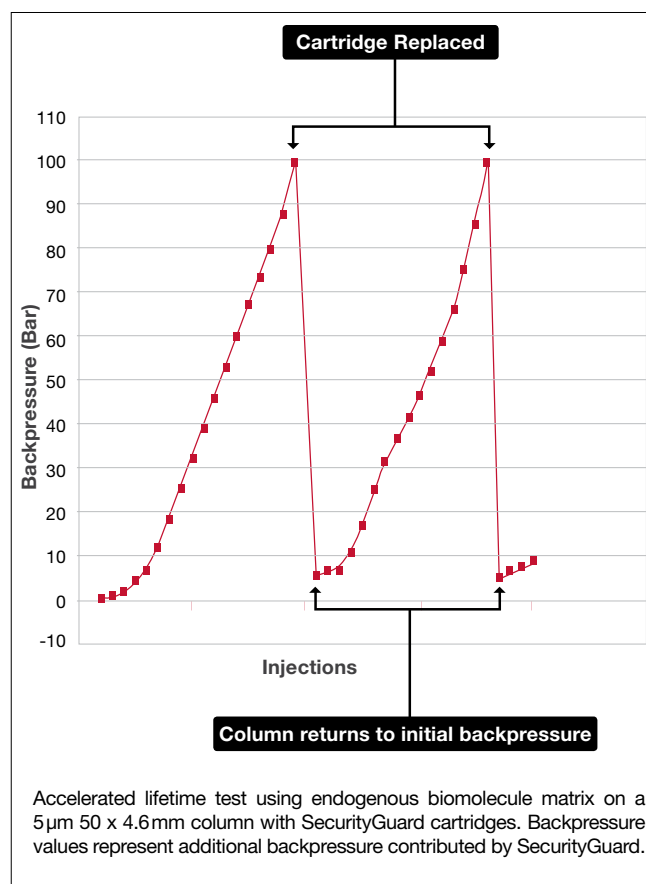
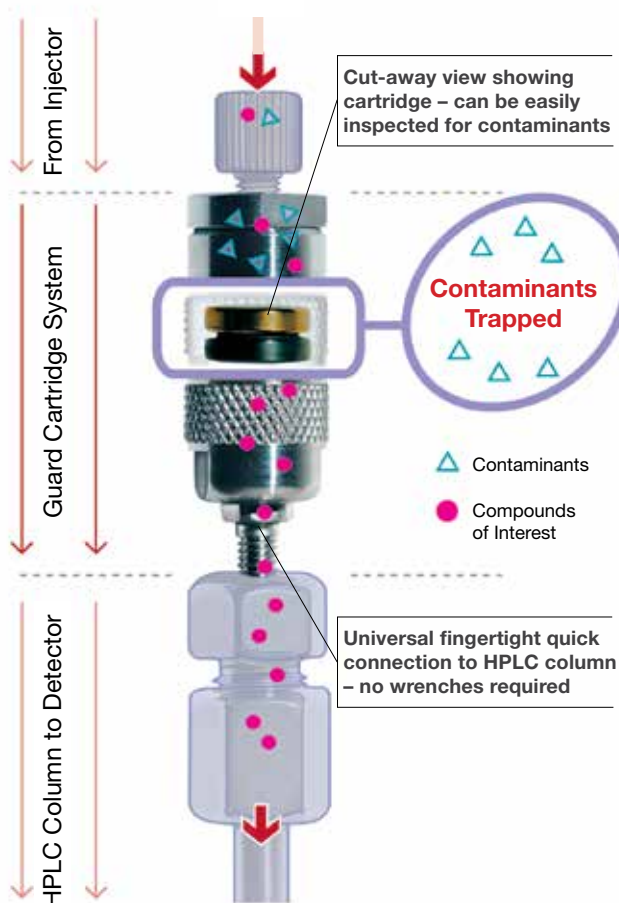
Fingertight connection to virtually any female inverted endfitting worldwide



HPLC Column Protection



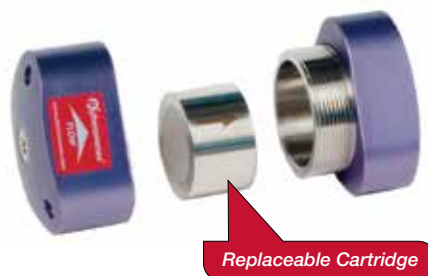
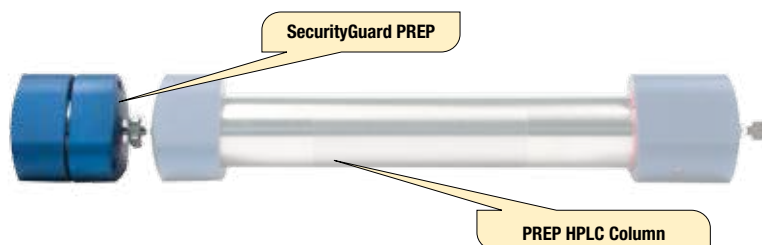
16



The SecurityGuard analytical cartridge holder (patented) directly finger-tightens into virtually any manufacturer's column endfitting. Contaminants are retained by an inexpensive disposable cartridge instead of damaging your valuable HPLC and SFC column investment. Simply replace SecurityGuard cartridges instead of your expensive columns. In this graph, once the expired SecurityGuard cartridge was replaced, the pressure immediately dropped and the column performance was restored allowing for extended column use.

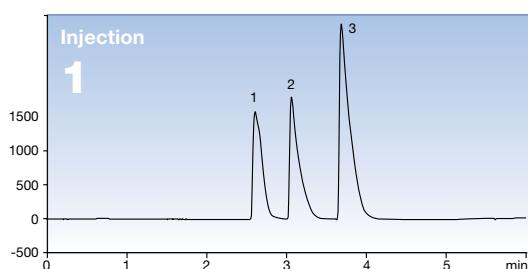
Lower Your Cost Per Injection with SecurityGuard PREP

SecurityGuard isn't only about column protection, it's about lowering your cost per injection! When you increase the number of injections from a single preparative column you're lowering your overall cost per injection. With SecurityGuard PREP, the inexpensive cartridge captures contaminants while the integrity of the prep column is maintained.



Forced Degradation Study

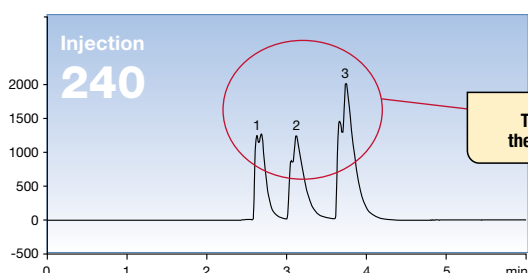
Axia™ Packed column with SecurityGuard PREP cartridge



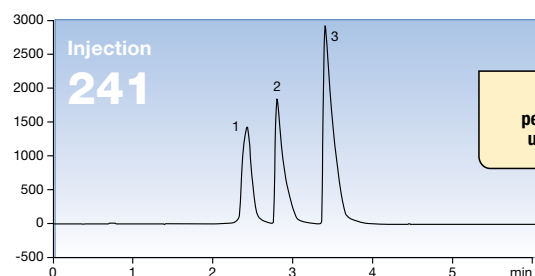
Conditions

Column: Luna® 10 µm C18(2) Axia Packed
Dimension: 50 x 21.2 mm
Part No.: 00B-4253-P0-AX
Mobile Phase: A: 0.1% TFA in Water
 B: 0.1% TFA in Water / Acetonitrile (25:75)
Gradient: Linear 93:7 (A/B) to 100% B over 5 minutes
Injection Volume: 420 µL
Flow Rate: 60 mL/min
Temperature: Ambient
Detection: UV @ 270 nm
Sample: 1. Nadolol
 2. Metoprolol
 3. Propranolol

Axia Packed column with SecurityGuard PREP cartridge



Axia Packed column after removing SecurityGuard column protection system



“I used about 10-12 SecurityGuard Cartridges and received extremely long Axia column lifetimes (8000 injections). During this time the columns showed extremely good efficiency with no significant changes concerning the backpressure.”

Claudia Oswald. Bayer, Germany.





Free Chiral Screening with >90% Success Rate

Join other chiral chromatographers from around the world who have achieved success with our in-house screening services.

FREE Chiral Screening Services

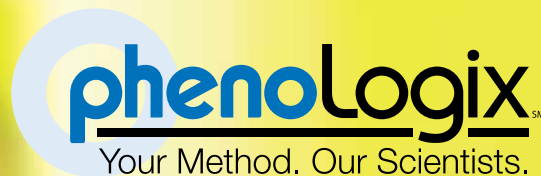
- Rapid 10 Day Screening From Receipt of Samples
- Screen All 6 Lux® Phases in Normal Phase, Reversed Phase, and Polar Organic Modes
- Over 90% Hit Ratio
- Detailed Report
- Easy Method Transfer
- Confidentiality Agreements Accepted Upon Request

Preparative and Process Scale-Up

- Media screening
- Small Scale Purification
- DAC Packing Assistance

Submit your FREE screening application today.

Simply visit www.phenomenex.com/ChiralScreening



“Our scientists at American Peptide have taken advantage of Phenomenex’s column packing services, application development, and project-specific consultation services for some of our most challenging separations.”

American Peptide Company, USA.

“We requested two different chiral compounds be separated and purified. We received the first set of compounds at 99% e.e. within a week and the second set in 2 weeks, also at greater than 99% e.e. The second set was a difficult separation. We were very happy with the quality of the separation and the quick turnaround, which was tantamount. [PhenoLogix] did a great job of informing me on the progress and chemistry/separation issues that arose. I have recommended this service to other colleagues in the Pharmaceutical and BioTech industry here in San Diego and I look forward to using them again.”

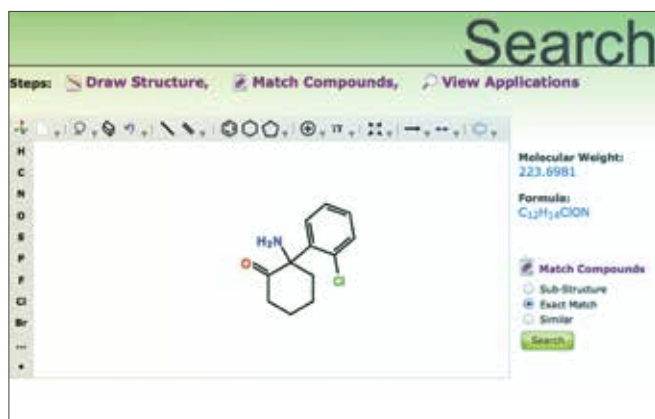
Isabelle Okuda. Celgene Corporation, USA.

Helpful Chiral Resources

1. Online Chiral Application Search (2000+ Chiral Application)

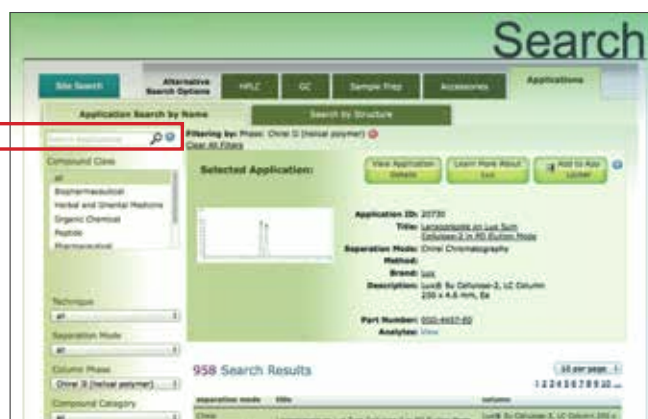
Search by: Application Structure

www.phenomenex.com/ChiralStructureSearch



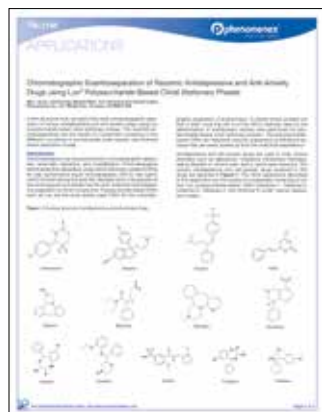
Search by: Application Name

www.phenomenex.com/ChiralNameSearch



2. Chiral and Prep Technical Notes

- Detailed insight into difficult chiral separations



View them at:

www.phenomenex.com/LuxTechnotes

3. Chiral Column Selection Guide

- Discover the 3 Easy Ways to Choose the best Chiral Column for your application

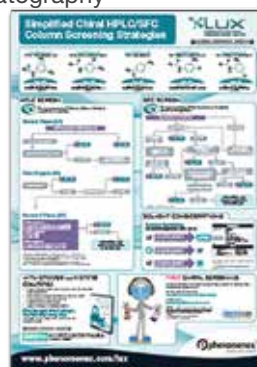


Visit:

www.phenomenex.com/LuxGuide

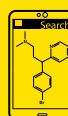
4. Simplified Chiral Method Development Poster

- Method Development walk-through for both HPLC and SFC conditions
- Convert your Lux column to different modes of chromatography



Visit:

www.phenomenex.com/LuxPoster



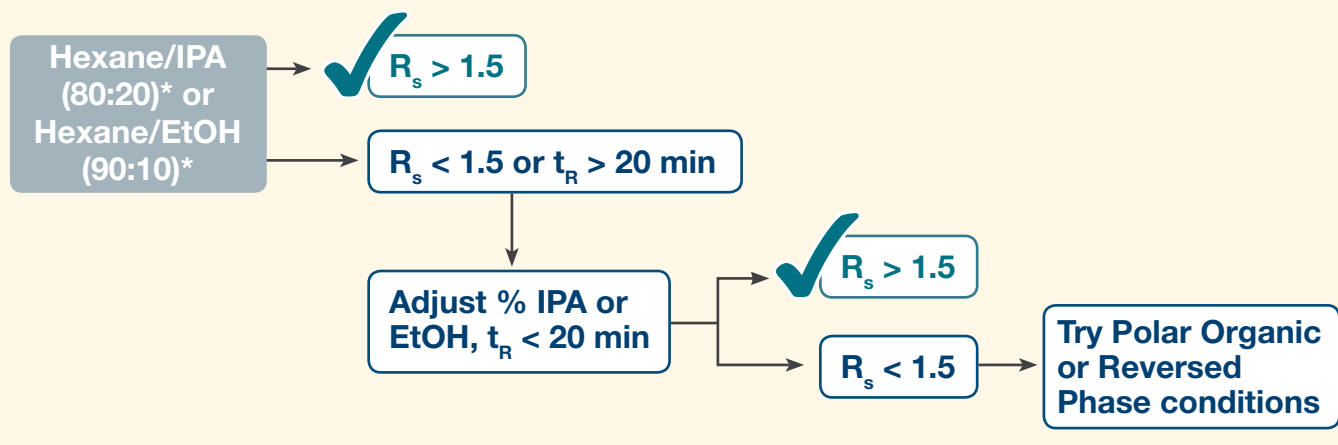


HPLC Screen

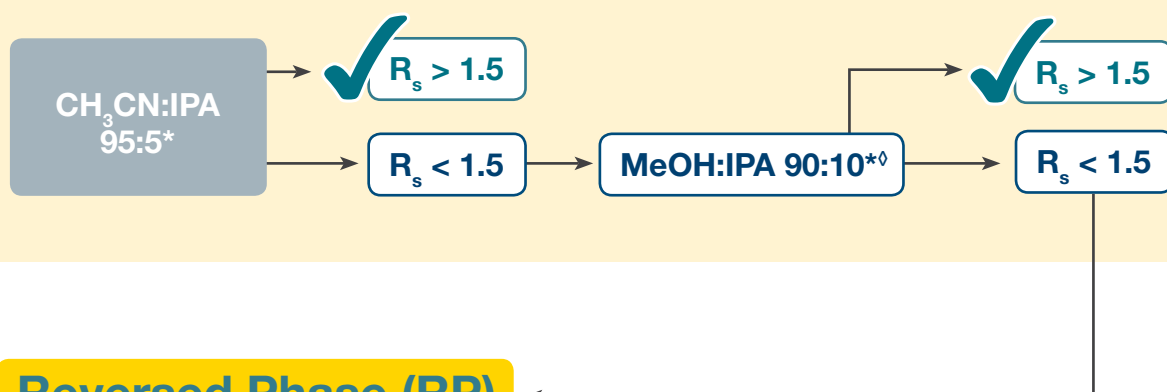


We suggest screening all six Lux phases to identify the optimal chiral separation.

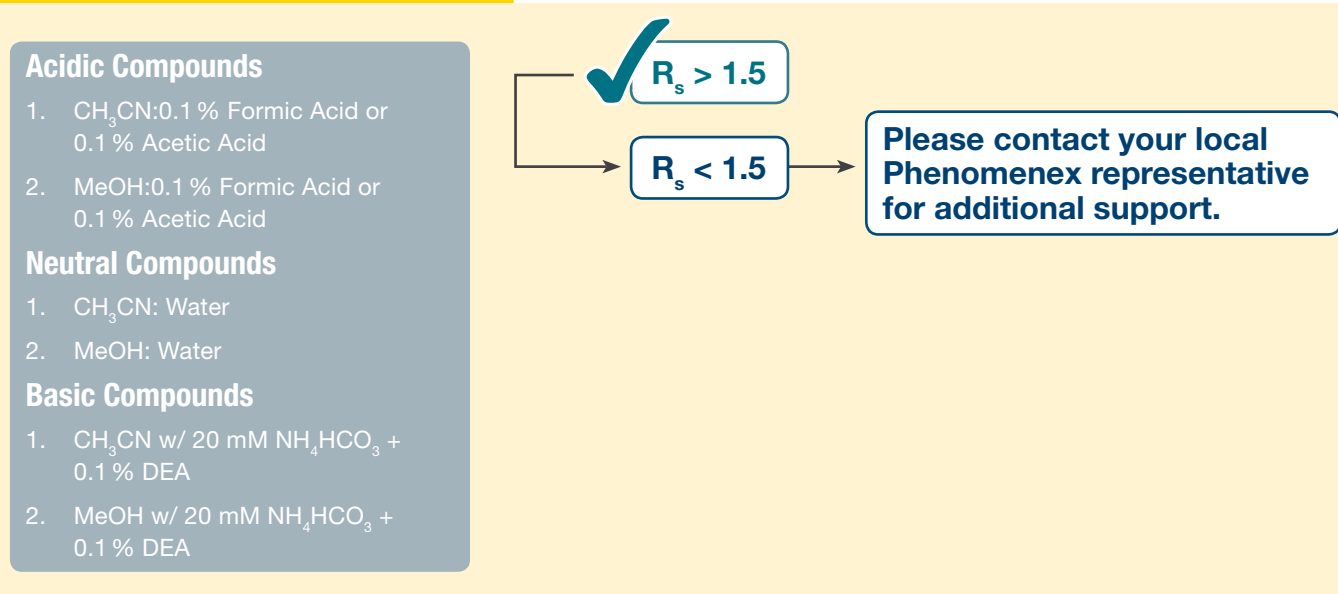
Normal Phase (NP)



Polar Organic (PO)



Reversed Phase (RP)

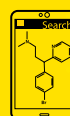


Notes: This screening strategy can be started at any step depending on the properties of the racemates. A common dimension used in chiral screening is 250 x 4.6 mm. For faster screening, use shorter columns.

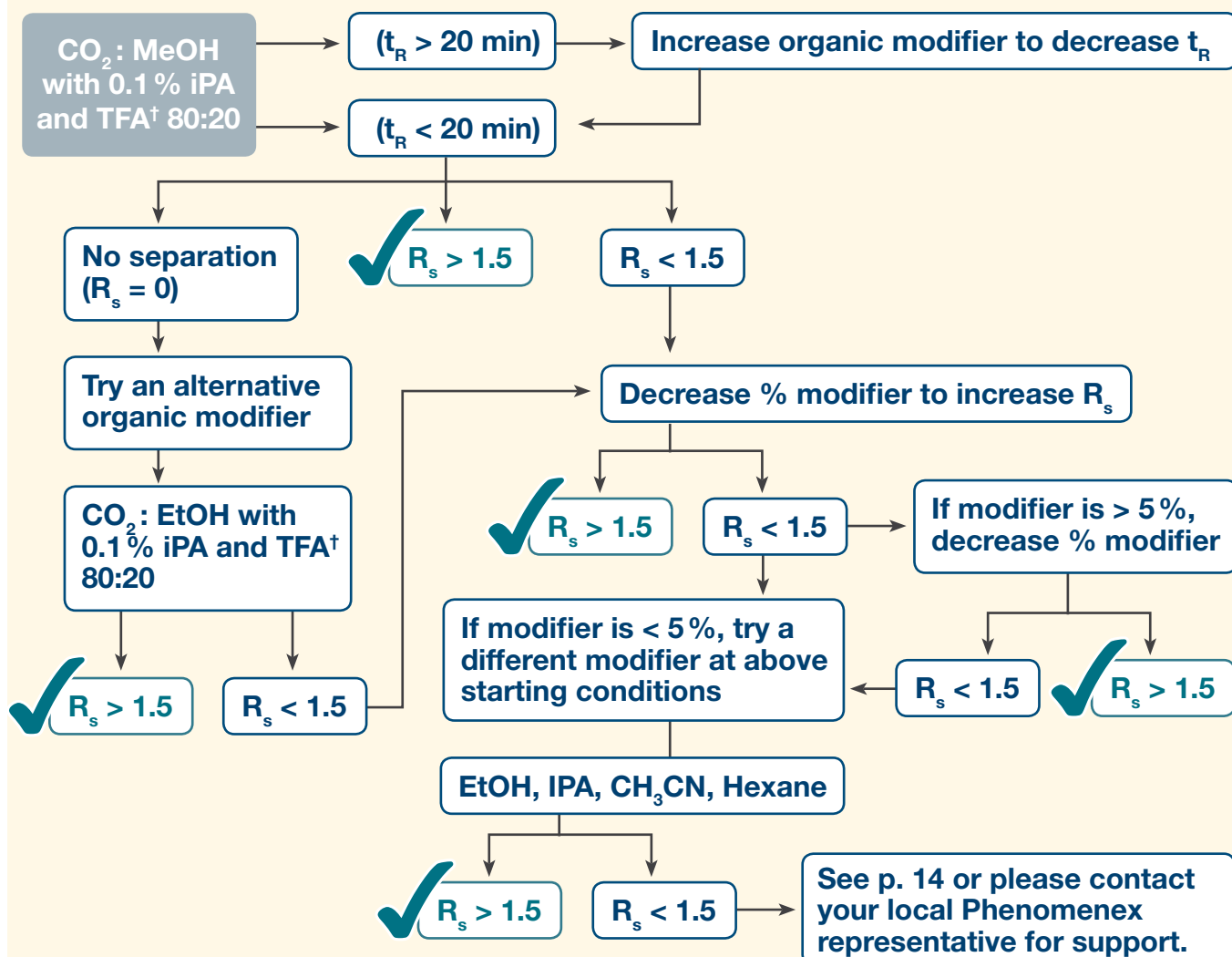
* Use 0.1 % DEA with basic and neutral compounds and 0.1 % HCOOH with acidic and neutral compounds

[‡] Changing % IPA in methanol can be occasionally beneficial

Key: IPA: Isopropanol; iPA: Isopropylamine; DEA: Diethylamine; MeOH: Methanol; CH₃CN: Acetonitrile; EtOH: Ethanol; CH₃COONH₄: Ammonium acetate; HCOOH: Formic acid; NH₄HCO₃: Ammonium bicarbonate; CO₂: Carbon Dioxide



Supercritical Fluid Chromatography (SFC)



Solvent Considerations

Solvent Switching

Lux columns are shipped in 90 % Hexane : 10 % IPA

Normal Phase

Flush your column with ten column volumes of MeOH: EtOH 90:10 at a flow rate of 0.5 mL/min
Followed by your mobile phase for 10 column volumes.

Polar Organic or Reversed Phase**

Polar Organic

Flush your column with ten column volumes of MeOH: EtOH 90:10 at a flow rate of 0.5 mL/min
Followed by your mobile phase for 10 column volumes.

Normal Phase

Normal Phase

Flush your column with ten column volumes of CO₂:MeOH (80:20) or CO₂:EtOH (80:20) at a flow rate of 0.5 mL/min
Followed by your mobile phase for 10 column volumes.

SFC

COMPATIBLE	
Polar Organic	Methanol Acetonitrile IPA Mixtures of above
Normal Phase	Alkane/alcohol mixtures
Reversed Phase	Aqueous methanol/acetonitrile Buffer and methanol/acetonitrile mixtures
SFC	Supercritical CO ₂
AVOID	
Tetrahydrofuran	Dimethylsulfoxide
Acetone	Dimethylformamide
Chlorinated hydrocarbons	N-methylformamide
Ethylacetate	Pyridine

**Once column is in reversed phase mode, it is not recommended to solvent switch.

See column care and use notes at www.phenomenex.com/lux for more information.



Ordering Information

Lux Chiral Columns



3 µm Minibore, MidBore™, and Analytical Columns (mm)								SecurityGuard™ Cartridges (mm)	
Phases	50 x 2.0	150 x 2.0	150 x 3.0	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 2.0*	4 x 3.0*
Cellulose-1	00B-4458-B0	00F-4458-B0	00F-4458-Y0	00B-4458-E0	00D-4458-E0	00F-4458-E0	00G-4458-E0	AJ0-8402	AJ0-8403
Cellulose-2	00B-4456-B0	00F-4456-B0	00F-4456-Y0	00B-4456-E0	00D-4456-E0	00F-4456-E0	00G-4456-E0	AJ0-8398	AJ0-8366
Cellulose-3	00B-4492-B0	00F-4492-B0	00F-4492-Y0	00B-4492-E0	00D-4492-E0	00F-4492-E0	00G-4492-E0	AJ0-8621	AJ0-8622
Cellulose-4	00B-4490-B0	00F-4490-B0	—	00B-4490-E0	00D-4490-E0	00F-4490-E0	00G-4490-E0	AJ0-8626	AJ0-8627
Amylose-2	00B-4471-B0	00F-4471-B0	00F-4471-Y0	00B-4471-E0	00D-4471-E0	00F-4471-E0	00G-4471-E0	AJ0-8471	AJ0-8470
for ID:								2.0–3.0 mm	3.2–8.0 mm

5 µm Minibore and Analytical Columns (mm)						SecurityGuard™ Cartridges (mm)	
Phases	50 x 2.0	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 2.0*	4 x 3.0*
Cellulose-1	00B-4459-B0	00B-4459-E0	00D-4459-E0	00F-4459-E0	00G-4459-E0	AJ0-8402	AJ0-8403
Cellulose-2	00B-4457-B0	00B-4457-E0	00D-4457-E0	00F-4457-E0	00G-4457-E0	AJ0-8398	AJ0-8366
Cellulose-3	00B-4493-B0	00B-4493-E0	00D-4493-E0	00F-4493-E0	00G-4493-E0	AJ0-8621	AJ0-8622
Cellulose-4	00B-4491-B0	00B-4491-E0	00D-4491-E0	00F-4491-E0	00G-4491-E0	AJ0-8626	AJ0-8627
Amylose-1	—	00B-4732-E0	00D-4732-E0	00F-4732-E0	00G-4732-E0	—	AJ0-9336
Amylose-2	00B-4472-B0	00B-4472-E0	00D-4472-E0	00F-4472-E0	00G-4472-E0	AJ0-8471	AJ0-8470
for ID:						2.0–3.0 mm	3.2–8.0 mm

Column Performance Check Standard

Part No.	Description	Unit	Price
AL0-8412	Chiral Test Mix No. 5 (Lux)	ea	



Lux Chiral Method Screening Kits are available. Please contact your Phenomenex representative for more information.

5 µm Semi-Prep Columns (mm)			SecurityGuard™ Cartridges (mm)
Phases	150 x 10.0	250 x 10.0	10 x 10.0†
Cellulose-1*	00F-4459-N0	00G-4459-N0	AJ0-8404
Cellulose-2*	00F-4457-N0	00G-4457-N0	AJ0-8399
Cellulose-3	—	00G-4493-N0	AJ0-8623
Cellulose-4	—	00G-4491-N0	AJ0-8628
Amylose-2	00F-4472-N0	00G-4472-N0	AJ0-8472
for ID:			9–16 mm

*Inquire for Lux 10 µm Cellulose-1 and Cellulose-2 columns.

5 µm Axia™ Packed Preparative Columns (mm)					SecurityGuard™ Cartridges (mm)	
Phases	150 x 21.2	250 x 21.2	250 x 30	250 x 50	15 x 21.2**	15 x 30.0*
	Inquire	Inquire	Inquire	Inquire	/ea	/ea
Cellulose-1†	00F-4459-P0-AX	00G-4459-P0-AX	00G-4459-U0-AX	00G-4459-V0-AX	AJ0-8405	AJ0-8406
Cellulose-2†	00F-4457-P0-AX	00G-4457-P0-AX	00G-4457-U0-AX	00G-4457-V0-AX	AJ0-8400	AJ0-8401
Cellulose-3	00F-4493-P0-AX	00G-4493-P0-AX	00G-4493-U0-AX	00G-4493-V0-AX	AJ0-8624	AJ0-8625
Cellulose-4	00F-4491-P0-AX	00G-4491-P0-AX	00G-4491-U0-AX	00G-4491-V0-AX	AJ0-8629	AJ0-8630
Amylose-1	00F-4732-P0-AX	00G-4732-P0-AX	00G-4732-U0-AX	00G-4732-V0-AX	AJ0-9338	AJ0-9339
Amylose-2	00F-4472-P0-AX	00G-4472-P0-AX	00G-4472-U0-AX	—	AJ0-8473	AJ0-8474
for ID:					18–29 mm	30–49 mm

* SecurityGuard Analytical Cartridges require holder, Part No.: KJ0-4282

† SemiPrep SecurityGuard™ Cartridges require holder, Part No.: AJ0-9281

**HPLC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8223

SFC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8617

* HPLC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8277

SFC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8618

Bulk Media		
Phases	100 g	1 kg
10 µm	Inquire	Inquire
Cellulose-1	04G-4501	04K-4501
Cellulose-2	04G-4502	04K-4502
Cellulose-3	04G-4624	04K-4624
Cellulose-4	04G-4625	04K-4625
20 µm	Inquire	Inquire
Cellulose-1	04G-4473	04K-4473
Cellulose-2	04G-4464	04K-4464
Cellulose-3	04G-4504	04K-4504
Cellulose-4	04G-4503	04K-4503

Please inquire for 20 µm Lux Amylose-2 media.



Ordering Information

Preparative Guard Cartridge Holders



Preparative Holder (Two Sizes)

For 21.2 mm ID cartridges, use with 18 to 29 mm ID columns



Prep Guard Cartridge Holder

Part No.	Description	Unit	Price
AJ0-8273	HPLC Holder Kit for 21.2 mm ID cartridges, includes column coupler	ea	
AJ0-8617	SFC Holder Kit for 21.2 mm ID cartridges, includes column coupler	ea	

For 30.0 mm ID cartridges, use with 30 to 49 mm ID columns



Prep Guard Cartridge Holder

Part No.	Description	Unit	Price
AJ0-8277	HPLC Holder Kit for 30.0 mm ID cartridges, includes column coupler	ea	
AJ0-8618	SFC Holder Kit for 30.0 mm ID cartridges, includes column coupler	ea	

Replacement Parts and Accessories

Part No.	Description	Unit	Price
AQ0-8374	PREP Coupler, SS w / PEEK Ferrule Inserts, 10-32 Threads, 1/16 in. OD x 0.020 in. ID	ea	
AQ0-8375	Replacement Ferrule Inserts, for PREP Coupler, PEEK, 0.020 in. ID	10/pk	
AQ0-8222	PREP Replacement O-Rings, Kalrez® For 15 x 21.2 mm SG HPLC Holder, Size 2-021	2/pk	
AQ0-8318	PREP Replacement O-Rings, Kalrez® For 15 x 30 mm SG HPLC Holder, Size 2-025	2/pk	
AQ0-8500	PREP Replacement O-Rings, Teflon® For 15 x 21.2 mm SG SFC Holder, Size 2-021	2/pk	
AQ0-8501	PREP Replacement O-Rings, Teflon® For 15 x 30 mm SG SFC Holder, Size 2-025	2/pk	
AT0-0465	Capillary S.S. Tubing, 0.020 in. ID x 0.062 in. (1/16 in.) OD x 10 cm length	5/pk	
AT0-0466	Capillary S.S. Tubing, 0.020 in. ID x 0.062 in. (1/16 in.) OD x 20 cm length	5/pk	

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Comparative separations may not be representative of all applications. Columns used for comparison were manufactured by DAICEL Corporation. Phenomenex is in no way affiliated with DAICEL Corporation.

Axia column and packing technology is patented by Phenomenex. U.S. Patent No. 7, 674, 383

SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362.

CAUTION: this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP or ULTRA holders, or to any cartridges.

The opinions stated herein are solely those of the speaker and not necessarily those of any company or organization.

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guarantee

If Lux analytical columns (≤ 4.6 mm ID) do not provide at least an equivalent or better separation as compared to a competing column of the same particle size, similar phase and dimensions, send in your comparative data within 45 days and keep the Lux column for FREE.



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