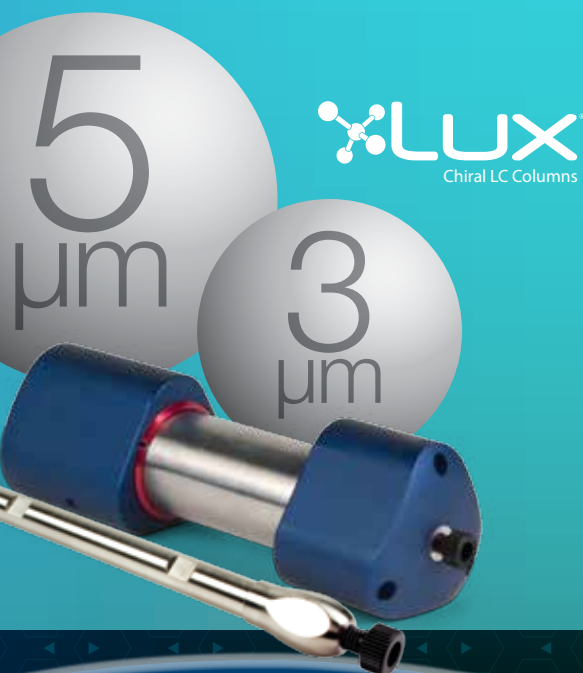


# EXQUISITELY ROBUST IMMOBILIZED CHIRAL COLUMNS

## ANALYTICAL, SEMI-PREP, AND PREP LC/SFC

- Expansive Strong Solvent Stability and Robustness
- Increased Enantioselectivity and Cost Savings
- New Selectivities to Complement Lux CSPs
- Guaranteed Alternatives to CHIRALPAK® IC®/IA® Columns



**NEW Lux i-Amylose-1**

**Lux i-Cellulose-5**

**phenomenex**<sup>®</sup>  
...breaking with tradition<sup>SM</sup>

Visit at:  
[www.phenomenex.com/Lux](http://www.phenomenex.com/Lux)



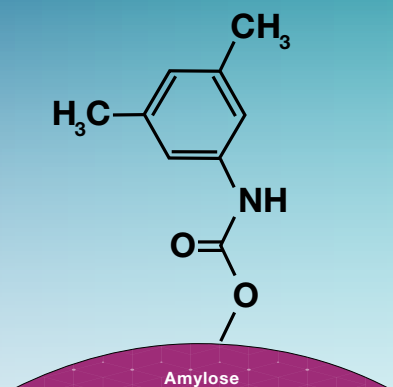
# Incredibly robust immobilized chiral columns with brilliant separation power!

Lux® i-Amylose-1 and i-Cellulose-5 contain a **chemical crosslinking between the polysaccharide and silica supports** which in turn provides incredible strong solvent (THF, DCM, DMSO, MtBE, Ethyl Acetate, etc.) robustness compared to coated phases and prevents the phase from being dissolved in strong solvents. This gives you:

- Potential increase in enantioselectivity as new strong solvent systems provide more options during method development
- Ability to keep samples dissolved in strong solvents like DMSO/DCM
- Greater range of solvents that can be used to clean/regenerate each column

## Two versatile phases now available!

### NEW Lux i-Amylose-1

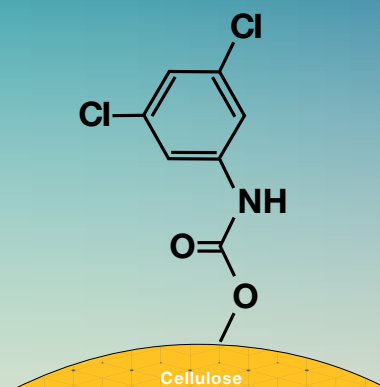


#### Lux i-Amylose-1

Amylose tris(3,5-dimethylphenylcarbamate)

The incredibly popular Amylose tris(3,5-dimethylphenylcarbamate) chiral selector found in the i-Amylose-1 is known to have broad enantio-recognition. Its amylose polysaccharide base and selector greatly differ from that found in the i-Cellulose-5 phase to allow for greater potential chiral success during screening. Types of interaction mechanisms including polar, electrostatic, hydrophobic, van der Waals, and other retention mechanisms are similar to the i-Cellulose-5 in their ability to promote greater chiral separation success.

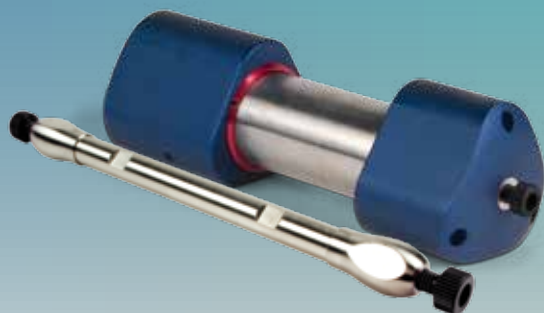
### Lux i-Cellulose-5



#### Lux i-Cellulose-5

Cellulose tris(3,5-dichlorophenylcarbamate)

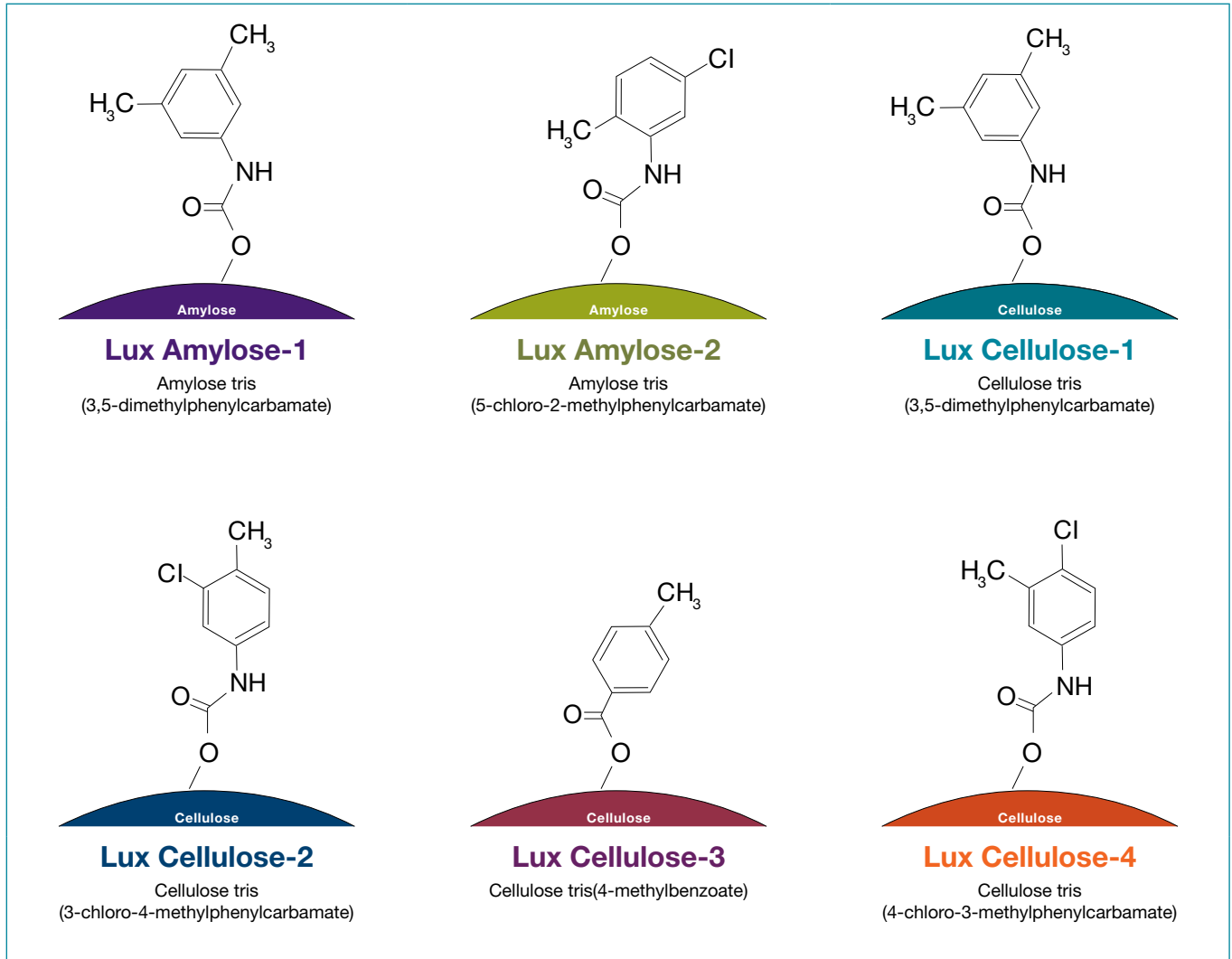
The dichlorophenyl-moiety part of the i-Cellulose-5 selector creates a novel chiral selectivity by way of having two strong electron accepting atoms that draw the electron cloud of the phenyl ring outward. This interaction mechanism combines extremely well with the existing polar, hydrophobic, van der Waals, and other retention mechanisms to promote greater chiral separation success.



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# Combined with 6 Coated Lux Polysaccharide LC/SFC Chiral Stationary Phases

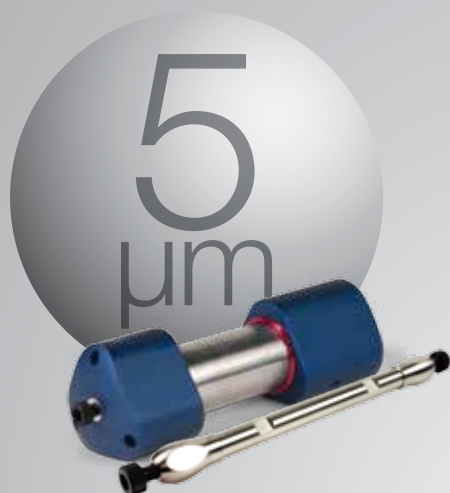
Lux coated and immobilized chiral columns offer a wide and complementary range of enantioselectivity for even the most difficult chiral separation projects under normal phase, reversed phase, polar organic, or SFC separation modes. While immobilized phases do offer additional strong solvent robustness, Lux coated phases are incredibly useful because their increased bonded surface area leads to greater overall levels of enantioselectivity.



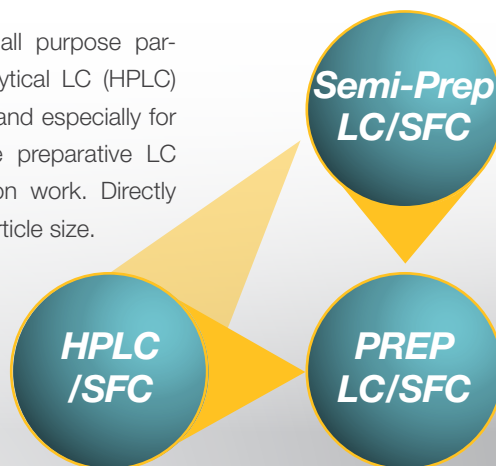
## Easily upgrade from your existing chiral columns to Lux LC/SFC columns!

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

# Multiple particles and formats to fit your immobilized chiral column needs!



Lower pressure, all purpose particle size for analytical LC (HPLC) or SFC methods and especially for high performance preparative LC or SFC purification work. Directly scales to 3 μm particle size.



Internal Diameters (ID) Available for LC and SFC					
Analytical		Semi-Prep	Preparative		
2.0mm	4.6mm	10mm	21.2mm	30mm	50mm



The perfect fit for analytical LC (UHPLC/HPLC) or SFC screening or analysis methods. Directly scales to 5 μm particle size.



Internal Diameters (ID) Available for LC and SFC		
Analytical		
2.0mm	3.0mm	4.6mm



# Lux i-Cellulose-5 and i-Amylose-1 bring you:

Expansive Strong Solvent Stability and <b>Robustness</b> .....	6
Exceptional Batch-to-Batch <b>Reproducibility</b> .....	7
Assured <b>Performance</b> and <b>Cost Savings</b> .....	8
Guaranteed Alternative to CHIRALPAK IC <sup>®</sup> and IA <sup>®</sup> .....	9
Applications: Lux i-Cellulose-5 .....	10 - 11
Applications: Lux i-Amylose-1 .....	12 - 13
SFC Chiral Method Development .....	14
Achiral <b>SFC Success</b> .....	15
Dependability and <b>Seamless Scalability</b> .....	16
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## Service

Ordering Information .....	18 - 19
Column Protection .....	18 - 19
Free Chiral Screening Service .....	19



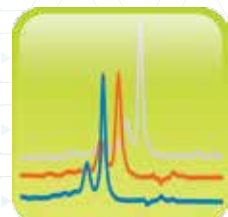
### Need a chiral method right now?

Start your chiral method search by analyte name or structure search in seconds here:  
[www.phenomenex.com/lux](http://www.phenomenex.com/lux)

#### Structure Search



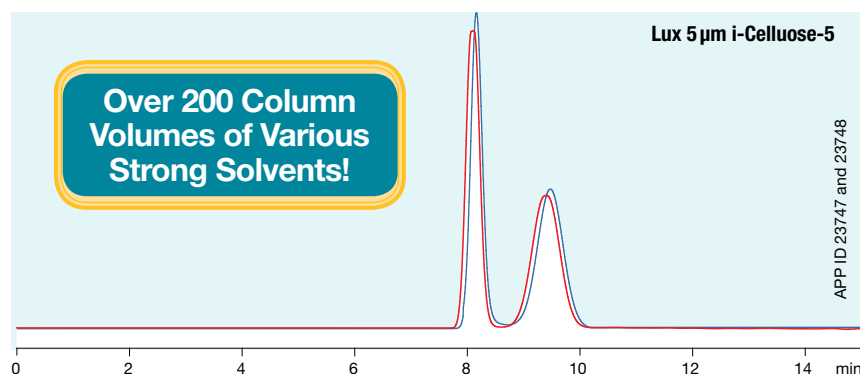
#### Analyte Name Search



# Expansive Strong Solvent Stability and Robustness

The immobilization and bonding technology used within the Lux® i-Cellulose-5 and i-Amylose-1 promotes column stability in strong organic solvents, which affords you the ability to expand your chiral separation success with more solvent systems and separation modes.

This application (first and last injections are displayed) shows the durability of Lux i-Cellulose-5 over a progression of runs in aggressive solvents. During the test this column was exposed to MtBE, dichloromethane, ethyl acetate, THF, hexane, methanol, ethanol, and isopropanol after which the initial probe was run again. From the results you can see, that exposure to aggressive solvents did not affect the excellent performance of this Lux i-Cellulose-5 column.

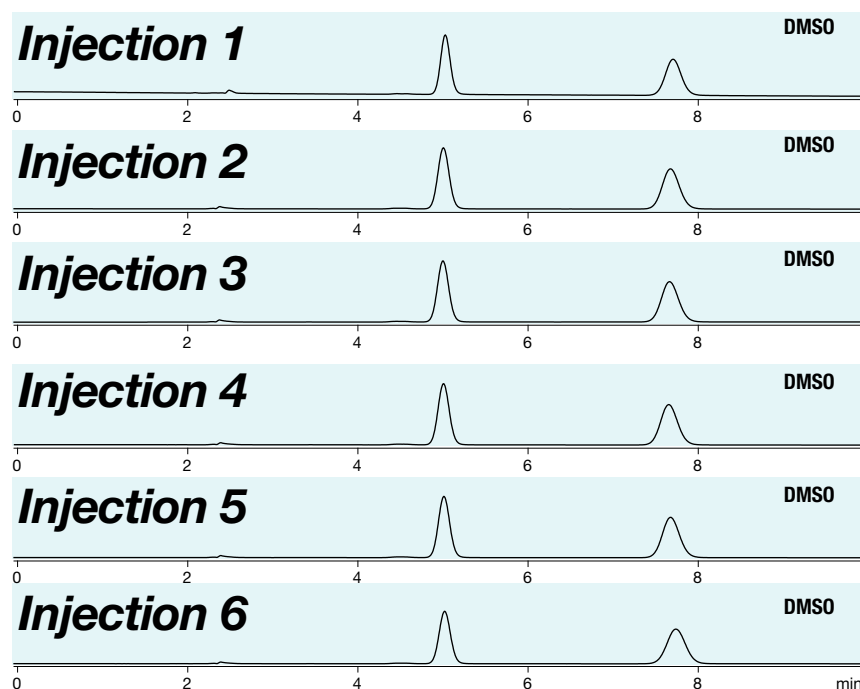


#### Conditions for all columns:

**Column:** Lux 5 µm i-Cellulose-5  
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** 0.1 % Ethylamine in MtBE / 0.1 % Ethylamine in Methanol (85:15)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 254 nm  
**Temperature:** 25 °C  
**Sample:** Tropicamide  
**Column Exposed to:** 1. MtBE  
2. Dichloromethane  
3. Ethyl Acetate  
4. THF  
5. Hexane  
6. Methanol  
7. Ethanol  
8. Isopropanol

## Load Samples in Desired Strong Solvents

With the strong solvent stability of the Lux i-Cellulose-5 and i-Amylose-1 comes the ability to keep samples diluted in the strong organic solvents that are needed for sample solubility or are directly from a reaction mixture.



#### Conditions for all columns:

**Column:** Lux 5 µm i-Cellulose-5  
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** Methanol/DEA (100:0.1)  
**Flow Rate:** 1.5 mL/min  
**Detection:** UV @ 280 nm  
**Temperature:** 27 °C  
**Sample:** Laudanosine  
**Dilution Solvent:** Dimethyl Sulfoxide (DMSO)

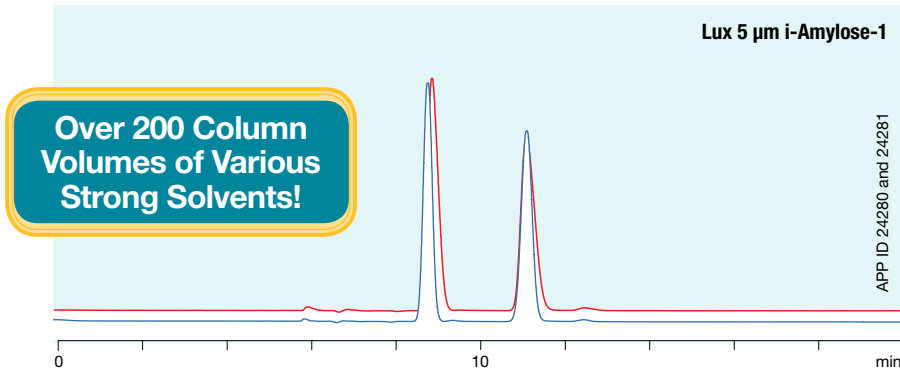
Unlock chiral compound solubility issues by loading in strong organic solvents for preparative purifications on extremely robust Lux i-Cellulose-5 and i-Amylose-1 AXIA™ packed columns.



# Product Reproducibility is Incredibly Important to Us

The new i-Amylose-1, like the rest of the Lux product line, is an incredibly versatile phase that has been manufactured and developed to give you your desired results again and again. This is especially true under harsh conditions where coated phases are unable to perform.

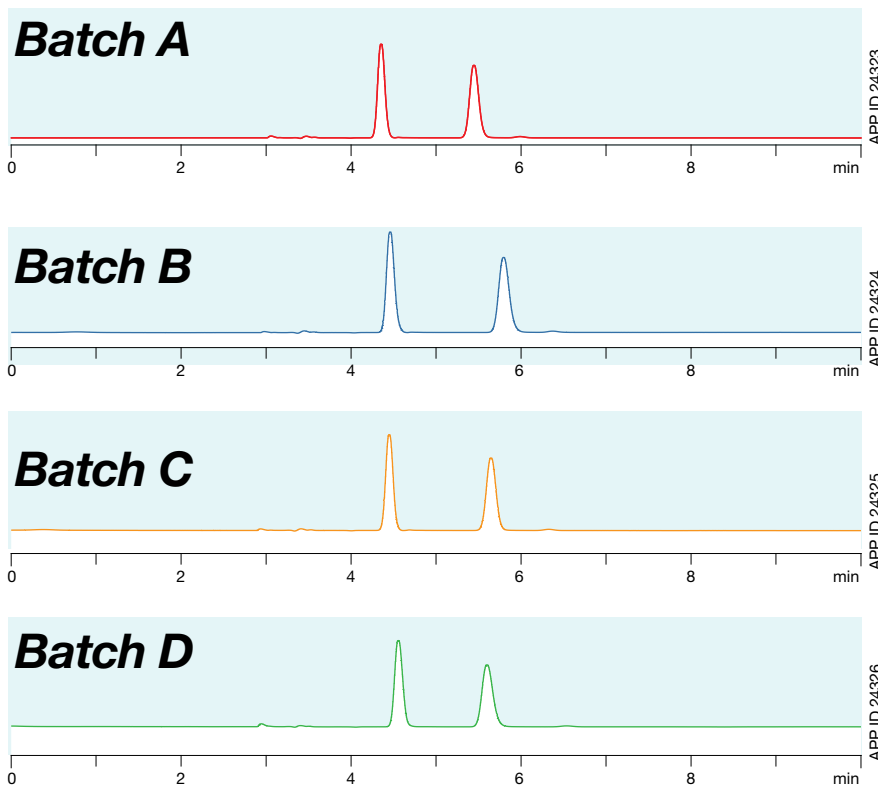
## Strong Solvent Stability



**Conditions for all columns:**

- Column:** Lux 5 µm i-Amylose-1
- Dimensions:** 250 x 4.6 mm
- Part No.:** 00G-4762-E0
- Mobile Phase:** 0.1 % DEA in Hexane / 0.1 % DEA in IPA (90:10)
- Flow Rate:** 1 mL/min
- Detection:** UV @ 260 nm
- Temperature:** 22 °C
- Sample:** Mianserin
- Column Exposed to:**
  1. MIBE
  2. Dichloromethane
  3. Ethyl Acetate
  4. THF
  5. Hexane
  6. Methanol
  7. Ethanol
  8. Isopropanol

## Batch-to-Batch Reproducibility



**Conditions for all columns:**

- Column:** Lux 5 µm i-Amylose-1
- Dimensions:** 250 x 4.6 mm
- Part No.:** 00G-4762-E0
- Mobile Phase:** 0.1 % DEA in Hexane / 0.1 % DEA in IPA (90:10)
- Flow Rate:** 1 mL/min
- Detection:** UV @ 260 nm
- Temperature:** Ambient
- Sample:** Mianserin

# Lux<sup>®</sup> i-Cellulose-5 and i-Amylose-1 will **Save You Money** and **Ensure Performance**

## Cost Savings



### Lux i-Cellulose-5

Manufacturer:	Phenomenex	DAICEL <sup>®</sup> CHIRALPAK <sup>®</sup> IC <sup>®</sup>
Part No.:	00G-4756-E0	83325
Dimensions:	250 x 4.6	250 x 4.6



### Lux i-Amylose-1

Manufacturer:	Phenomenex	DAICEL <sup>®</sup> CHIRALPAK IA <sup>®</sup>
Part No.:	00G-4762-E0	80325
Dimensions:	250 x 4.6	250 x 4.6



### Lux i-Cellulose-5

Manufacturer:	Phenomenex	DAICEL <sup>®</sup> CHIRALPAK IC-3
Part No.:	00G-4755-E0	83525
Dimensions:	250 x 4.6	250 x 4.6



### Lux i-Amylose-1

Manufacturer:	Phenomenex	DAICEL <sup>®</sup> CHIRALPAK IA-3
Part No.:	00G-4761-E0	80525
Dimensions:	250 x 4.6	250 x 4.6

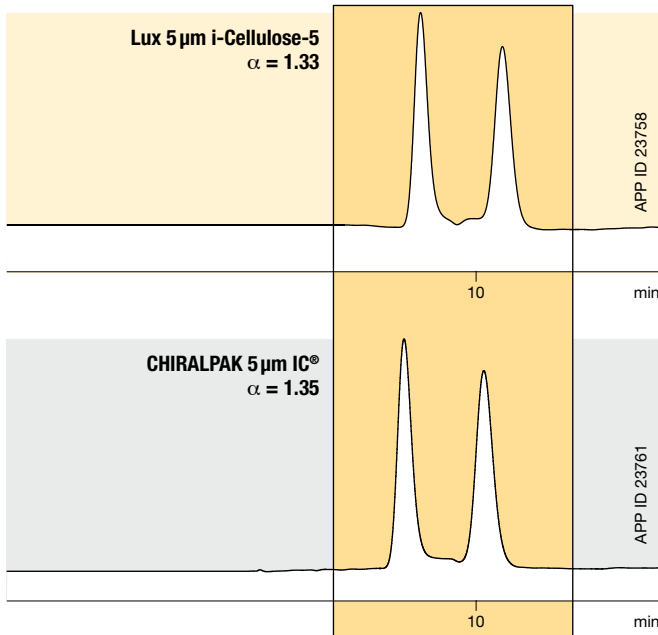
Contact your local  
Phenomenex representative  
to find out how much your  
lab will save today.

guarantee

If Lux analytical columns ( $\leq 4.6$  mm ID) do not provide at least an equivalent or better chiral separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.



# Guaranteed Alternative to CHIRALPAK® IC Columns



Conditions for both columns:

**Dimensions:** 250 x 4.6 mm

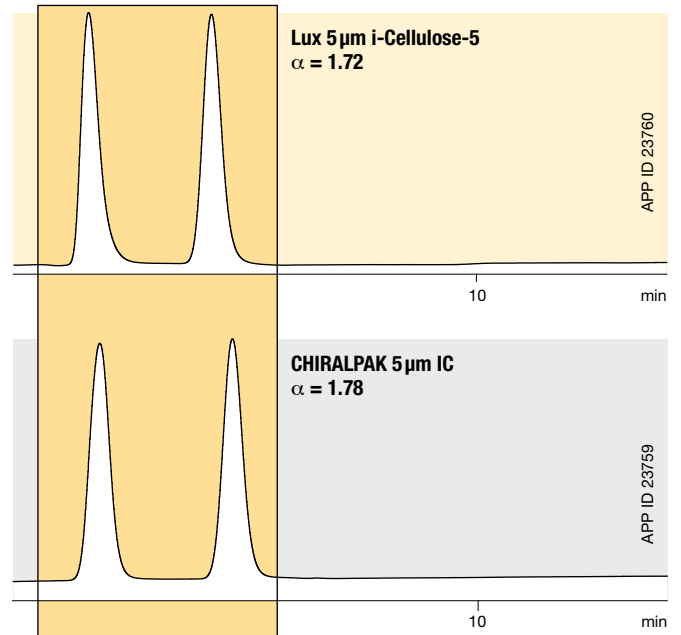
**Mobile Phase:** 0.1 % Ethylamine in MtBE /  
0.1 % Ethylamine in Methanol (96:4)

**Flow Rate:** 1 mL/min

**Detection:** UV @ 254 nm

**Temperature:** Ambient

**Sample:** Chlorthalidone



Conditions for both columns:

**Dimensions:** 250 x 4.6 mm

**Mobile Phase:** 0.1 % Ethylamine in MtBE

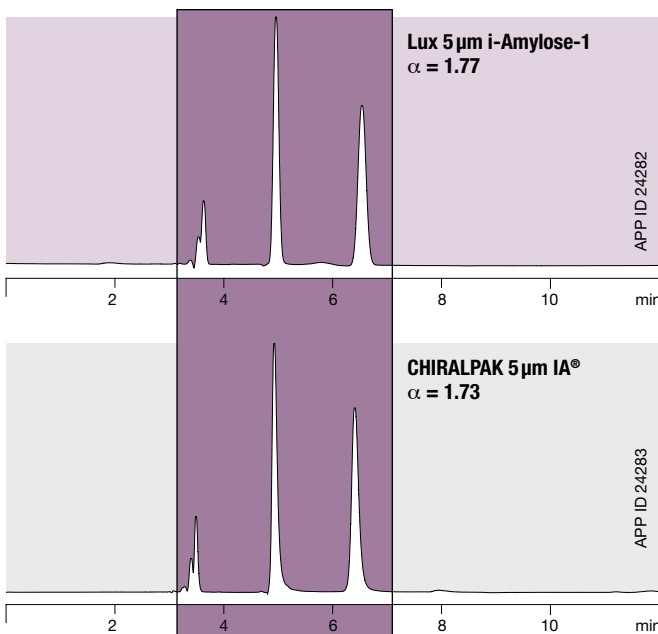
**Flow Rate:** 1 mL/min

**Detection:** UV @ 254 nm

**Temperature:** Ambient

**Sample:** Ornidazole

# Guaranteed Alternative to CHIRALPAK IA Columns



Conditions for both columns:

**Dimensions:** 250 x 4.6 mm

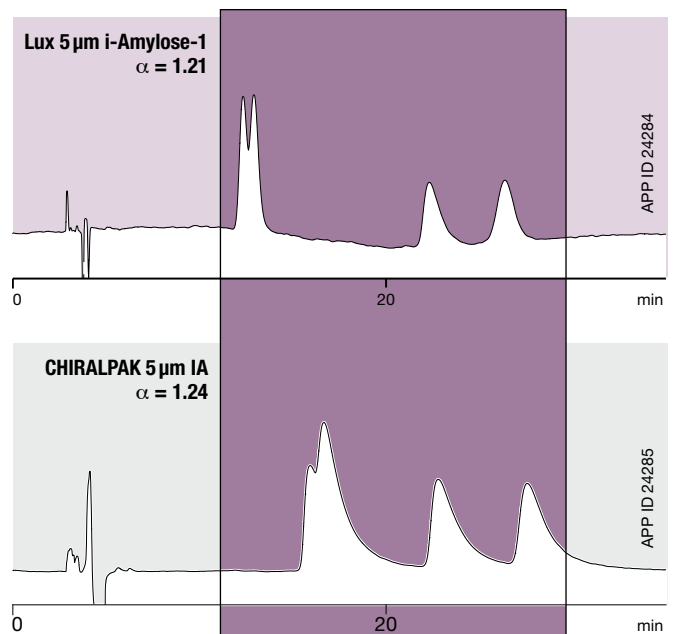
**Mobile Phase:** 0.1 % DEA in Hexane /  
0.1 % DEA in IPA (90:10)

**Flow Rate:** 1 mL/min

**Detection:** UV @ 270 nm

**Temperature:** Ambient

**Sample:** Tramadol



Conditions for both columns:

**Dimensions:** 250 x 4.6 mm

**Mobile Phase:** 0.1 % DEA in Hexane /  
0.1 % DEA in IPA (85:15)

**Flow Rate:** 1 mL/min

**Detection:** UV @ 230 nm

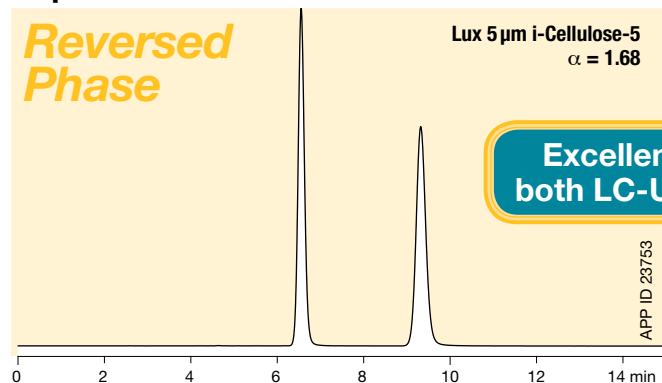
**Temperature:** Ambient

**Sample:** Nadolol

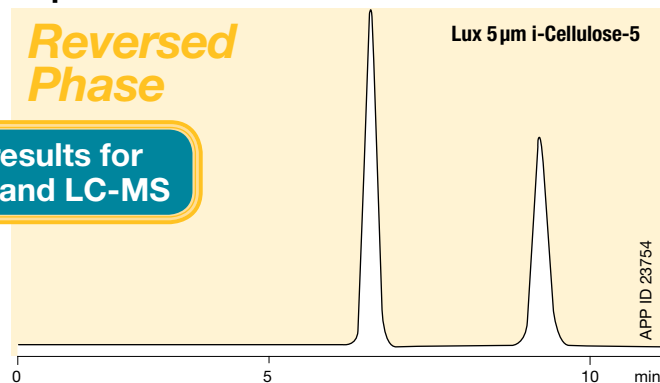
# Chiral Success with Lux i-Cellulose-5

Use the highly useful chiral selector found in Lux<sup>®</sup> i-Cellulose-5 to add more selectivity to your reversed phase and polar organic chiral screens!

## Zopiclone LC-UV



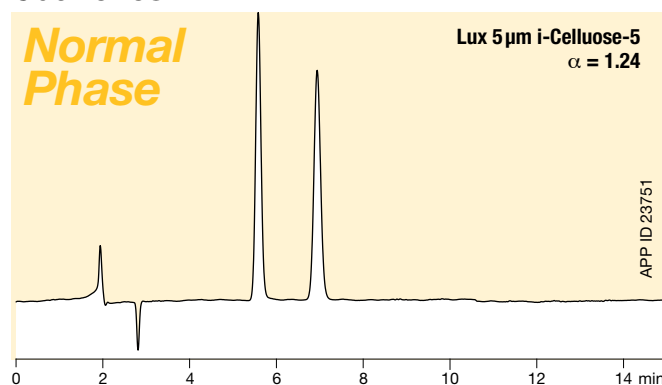
## Zopiclone LC-MS



Excellent results for  
both LC-UV and LC-MS

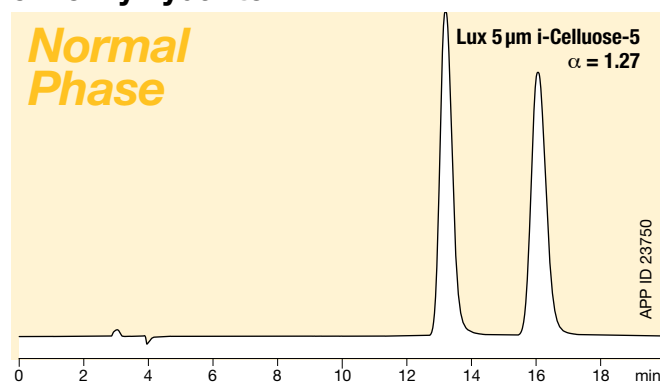
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** 5 mM Ammonium Bicarbonate/Acetonitrile (20:80)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 254 nm and MS (Advion<sup>®</sup> Single Quad)  
**Temperature:** 20 °C

## Guaifenesin



**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** n-Hexane/Ethanol/DEA (80:20:0.1)  
**Flow Rate:** 1.5 mL/min  
**Detection:** UV @ 230 nm  
**Temperature:** 27 °C

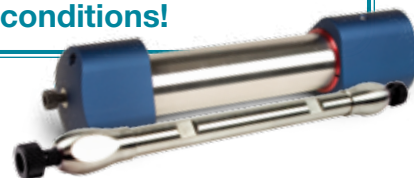
## 5-Benzylhydantoin



**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** n-Hexane/Isopropanol (80:20)  
**Flow Rate:** 1.5 mL/min  
**Detection:** UV @ 210 nm  
**Temperature:** 20 °C



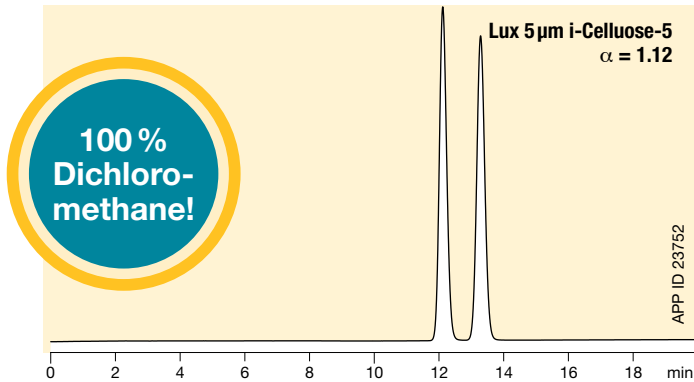
Lux i-Cellulose-5 analytical and preparative columns can be used under reversed phase, normal phase, polar organic, or SFC conditions!



# Chiral Success with Lux i-Cellulose-5

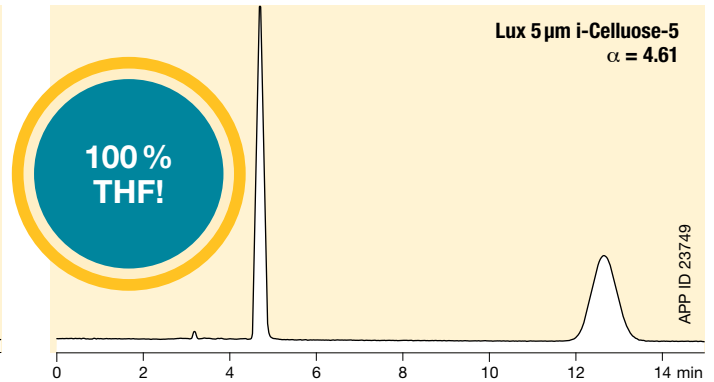
The chemical ruggedness of Lux i-Cellulose-5 columns allows you to easily add it to your normal phase screens or even to expand to other organic solvents that other chiral phases are not stable with.

## Kavain



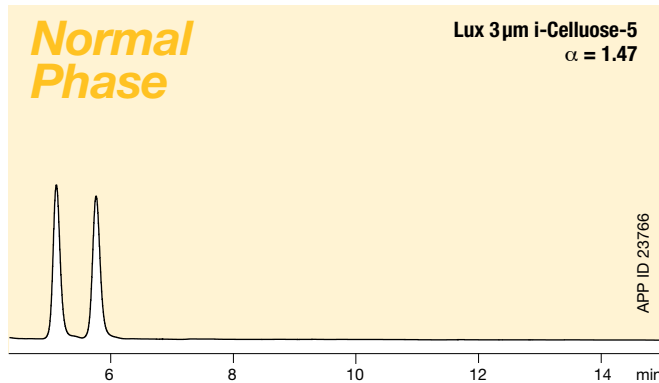
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** 100% DCM (CH<sub>2</sub>Cl<sub>2</sub>)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 254 nm  
**Temperature:** 25 °C

## Praziquantel



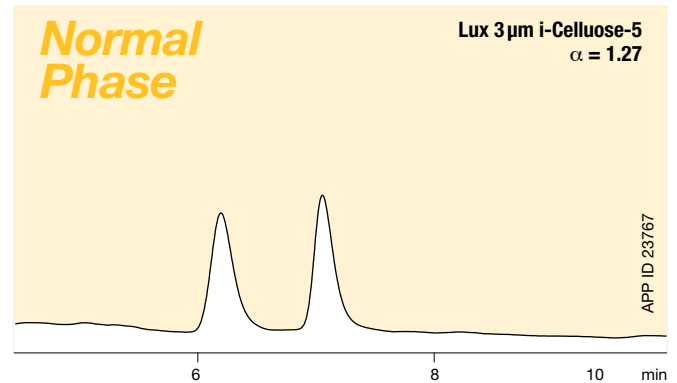
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4756-E0  
**Mobile Phase:** 100% THF  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 210 nm  
**Temperature:** 25 °C

## Indoprofen



**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4755-E0  
**Mobile Phase:** 0.1% TFA in DCM /  
 0.1% TFA in Methanol (96:4)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 254 nm  
**Temperature:** 25 °C

## Z-Serine



**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4755-E0  
**Mobile Phase:** 0.1% TFA in Hexane /  
 0.1% TFA in Ethyl Acetate (50:50)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 270 nm  
**Temperature:** 25 °C

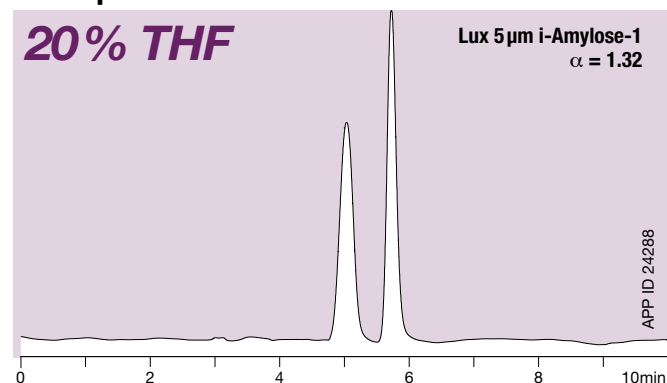


You can further expand the selectivity of Lux i-Cellulose-5 by using strong solvents such as THF, DCM, and MtBE.

# Chiral Success with Lux i-Amylose-1

Combine the broad chiral selectivity and incredible robustness of Lux® i-Amylose-1 to take advantage of new solvent systems and to add a greater range of chiral success to your repertoire.

## Chlorpheniramine



Dimensions: 250 x 4.6 mm

Part No.: 00G-4762-E0

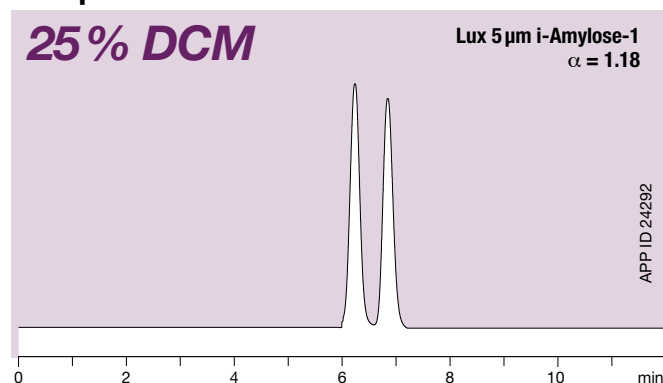
Mobile Phase: 0.1% DEA in Hexane / 0.1% DEA in THF (80:20)

Flow Rate: 1 mL/min

Detection: UV @ 254 nm

Temperature: 22°C

## Verapamil



Dimensions: 250 x 4.6 mm

Part No.: 00G-4762-E0

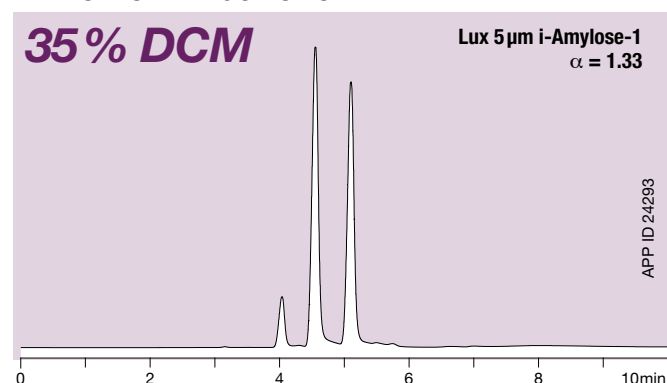
Mobile Phase: 0.1% DEA in Hexane / 0.1% DEA in Dichloromethane (75:25)

Flow Rate: 1 mL/min

Detection: UV @ 240 nm

Temperature: Ambient

## 2-Bromo-1-Indanone



Dimensions: 250 x 4.6 mm

Part No.: 00G-4762-E0

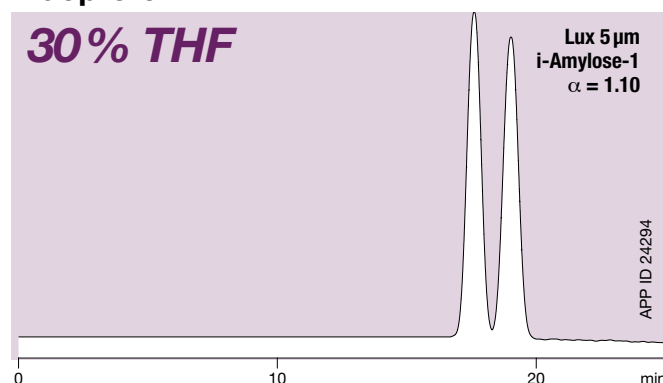
Mobile Phase: 0.1% TFA in Hexane /  
0.1% TFA in Dichloromethane (65:35)

Flow Rate: 1 mL/min

Detection: UV @ 254 nm

Temperature: Ambient

## Indoprofen



Dimensions: 250 x 4.6 mm

Part No.: 00G-4762-E0

Mobile Phase: 0.1% TFA in Hexane /  
0.1% TFA in THF (70:30)

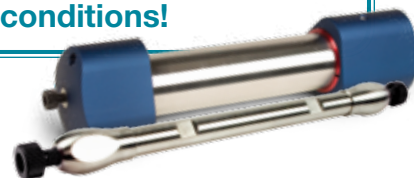
Flow Rate: 1 mL/min

Detection: UV @ 254 nm

Temperature: Ambient



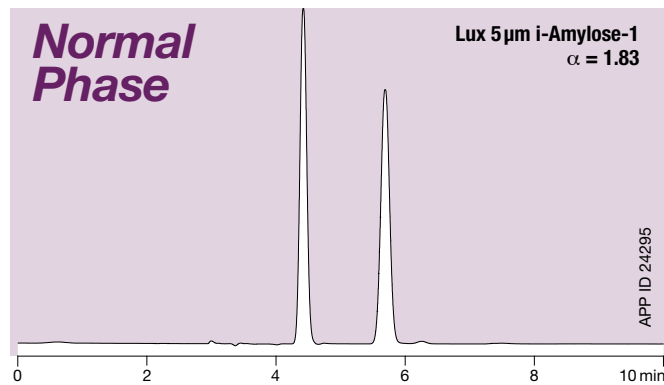
Lux i-Amylose-1 analytical and preparative columns can be used under reversed phase, normal phase, polar organic, or SFC conditions!



# Chiral Success with Lux i-Amylose-1

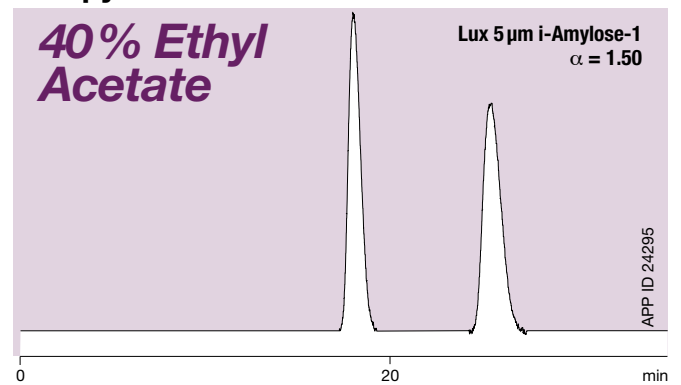
Add Lux i-Amylose-1 into your chiral or even achiral screens to take advantage of multiple interaction mechanisms as well as excellent column robustness under various separation modes.

## Mianserin



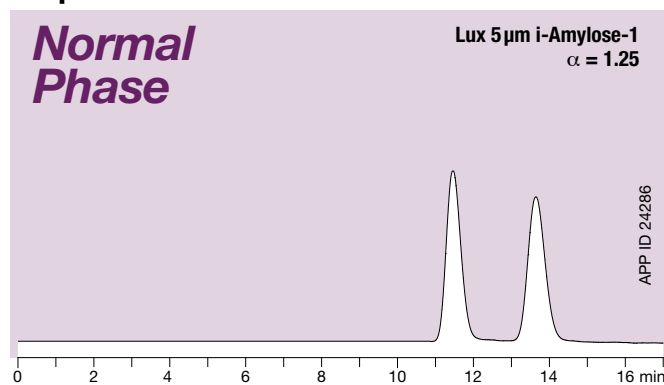
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4762-E0  
**Mobile Phase:** 0.1 % DEA in Hexane /  
 0.1 % DEA in IPA (90:10)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 260 nm  
**Temperature:** Ambient

## Disopyramide



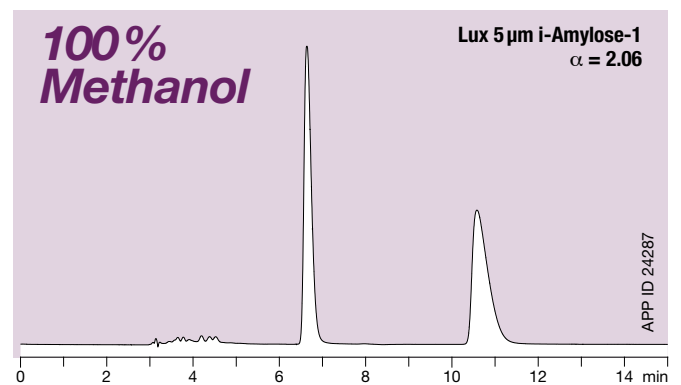
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4762-E0  
**Mobile Phase:** 0.1 % DEA in Hexane /  
 0.1 % DEA in Ethyl Acetate (60:40)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 220 nm  
**Temperature:** Ambient

## Tropic Acid



**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4762-E0  
**Mobile Phase:** 0.1 % TFA in Hexane / 0.1 % TFA in IPA (90:10)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 254 nm  
**Temperature:** Ambient

## Flavanone



**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4762-E0  
**Mobile Phase:** Methanol  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 230 nm  
**Temperature:** Ambient



**DMSO, Ethyl Acetate, DCM, THF, MtBE ... Don't worry!**  
 The strong solvent stability of i-Amylose-1 has you covered.

# Successful SFC Screening and Method Development Protocol

Eight distinct yet complementary Lux® CSPs allow for excellent success rate over reversed phase, polar organic, normal phase and SFC conditions, with the i-Cellulose-5 and i-Amylose-1 adding strong solvent capability to this versatile family of products.

For SFC, having this breadth of selectivities is incredibly useful for screening and discovery work. Below is a portion of a study where 56 racemic pharmaceutical compounds were run on a variety of Lux stationary phases under various mobile phase options to help develop useful screening protocols. Over the course of the study, it was determined that with one SFC mobile phase and the use of 6 different Lux CSPs, a lab could get 87.5 % success (baseline resolution).

## Cumulative baseline separation with Lux phases

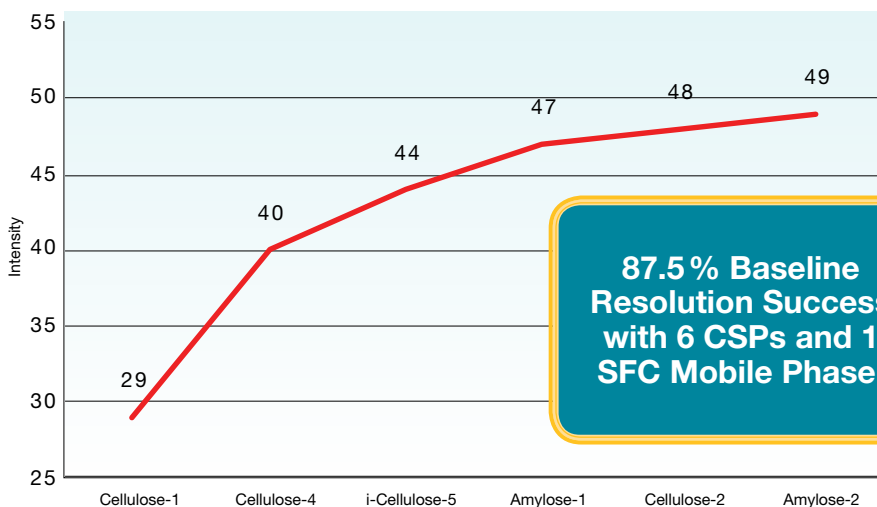
### SFC Screen

**Columns:** Lux 5 µm Cellulose-1  
Lux 5 µm Cellulose-4  
Lux 5 µm i-Cellulose-5  
Lux 5 µm Amylose-1  
Lux 5 µm Cellulose-2  
Lux 5 µm Amylose-2

**Dimensions:** 250 x 4.6 mm

### Conditions for all columns:

**Mobile Phase:** 80 % CO<sub>2</sub> / 20 % Methanol + 0.1 % Isopropylamine and 0.1 % TFA  
**Flow Rate:** 3 mL/min  
**Detection:** UV @ 220 nm  
**Temperature:** 30 °C  
**System:** JASCO® 4000 Series Analytical SFC



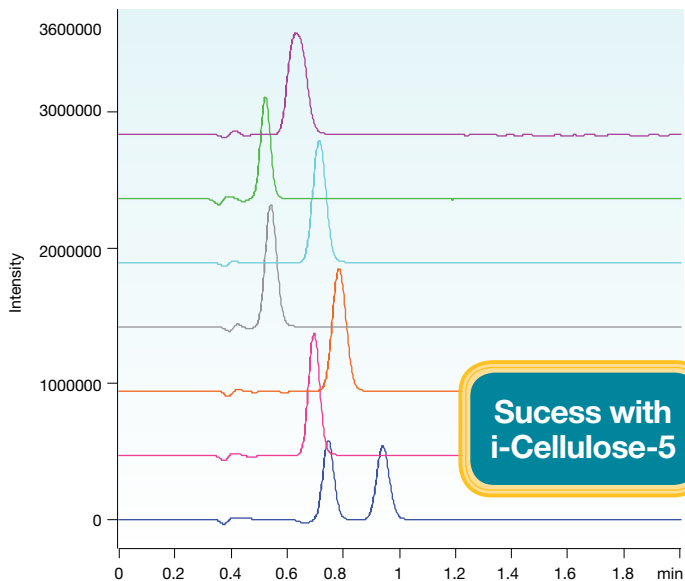
### Nimopidine and Acebutolol

**Columns:** Lux 3 µm Amylose-2  
Lux 3 µm Amylose-1  
Lux 3 µm Cellulose-4  
Lux 3 µm Cellulose-3  
Lux 3 µm Cellulose-2  
Lux 3 µm Cellulose-1  
Lux 3 µm i-Cellulose-5

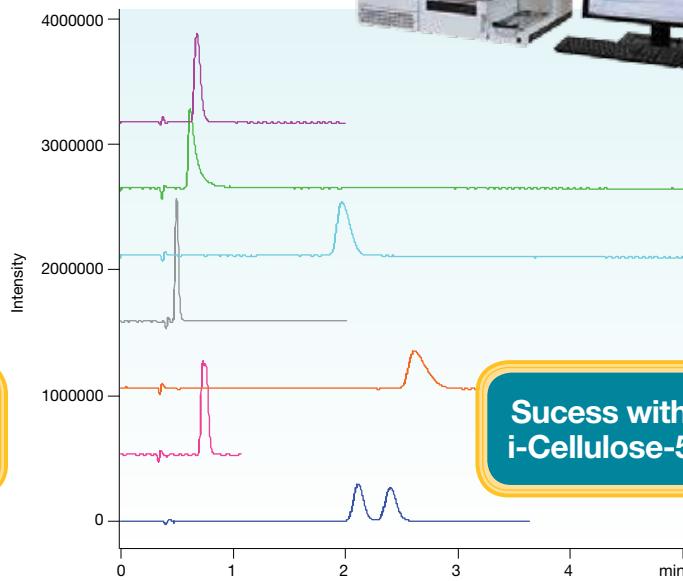
**Dimensions:** 150 x 3.0 mm



### Nimopidine



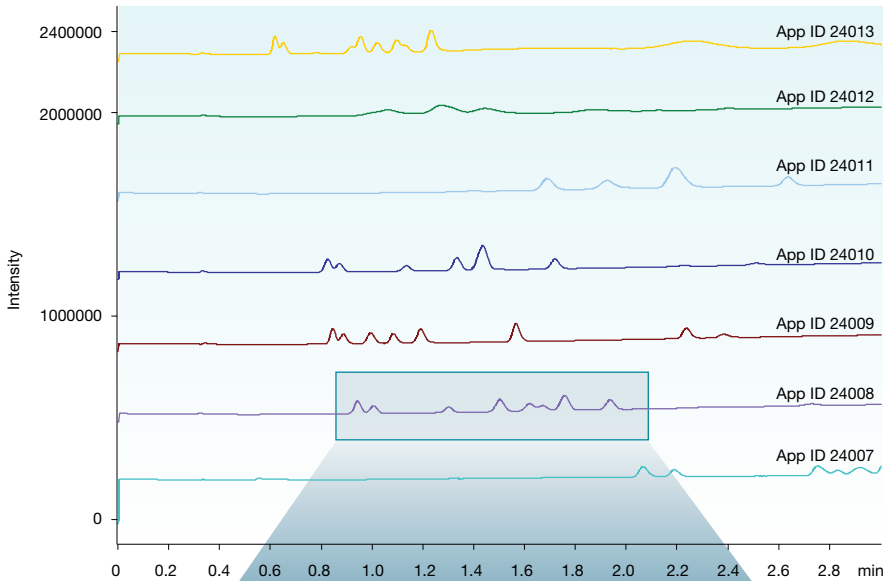
### Acebutolol



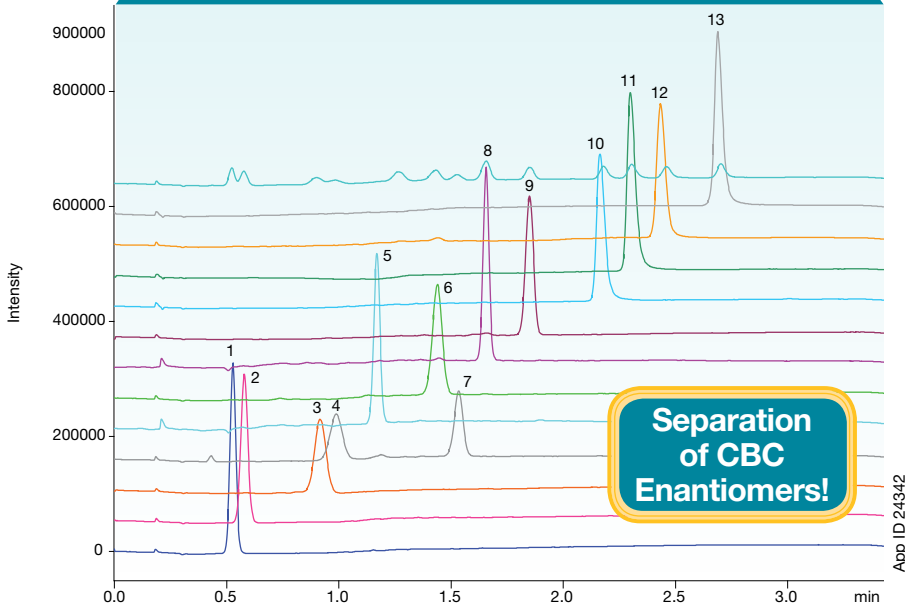
# Achiral SFC Success with Chiral Columns!

While the incredible range of interaction mechanisms (polar, electrostatic, hydrophobic, van der Waals, and others) present in each Lux material are fundamental for ensuring baseline separation of chiral compounds, these same interaction mechanisms can also be used as an excellent screening tool for achiral work. Here we present an achiral screening of natural cannabinoids using 7 Lux selectivities under one SFC mobile phase. The initial resolution and separation provided by the Lux Cellulose-2 was then further optimized to provide even greater resolution.

## Cannabinoids



Expanded and optimized method separates achiral and chiral species!



### Conditions for all columns:

**Columns:** Lux 3 µm i-Cellulose-5  
 Lux 3 µm Amylose-2  
 Lux 3 µm Amylose-1  
 Lux 3 µm Cellulose-4  
 Lux 3 µm Cellulose-3  
 Lux 3 µm Cellulose-2  
 Lux 3 µm Cellulose-1

**Dimensions:** 150 x 3.0 mm

**Mobile Phase:** A: Carbon Dioxide  
 B: Methanol

Gradient:	Time (min)	% B
	0	5
	2.5	25
	3	25

**Flow Rate:** 3 mL/min

**Detection:** UV @ 220 nm

**Temperature:** 40 °C

**Sample:** Cannabinoid mix of 8

**Column:** Lux 3 µm Cellulose-2

**Dimensions:** 150 x 3.0 mm

**Part No.:** 00F-4456-Y0

**Mobile Phase:** A: Carbon Dioxide  
 B: Methanol

Gradient:	Time (min)	% B
	0	4
	3	25
	3.5	25

**Flow Rate:** 5 mL/min

**Detection:** UV @ 220 nm

**Temperature:** 40 °C

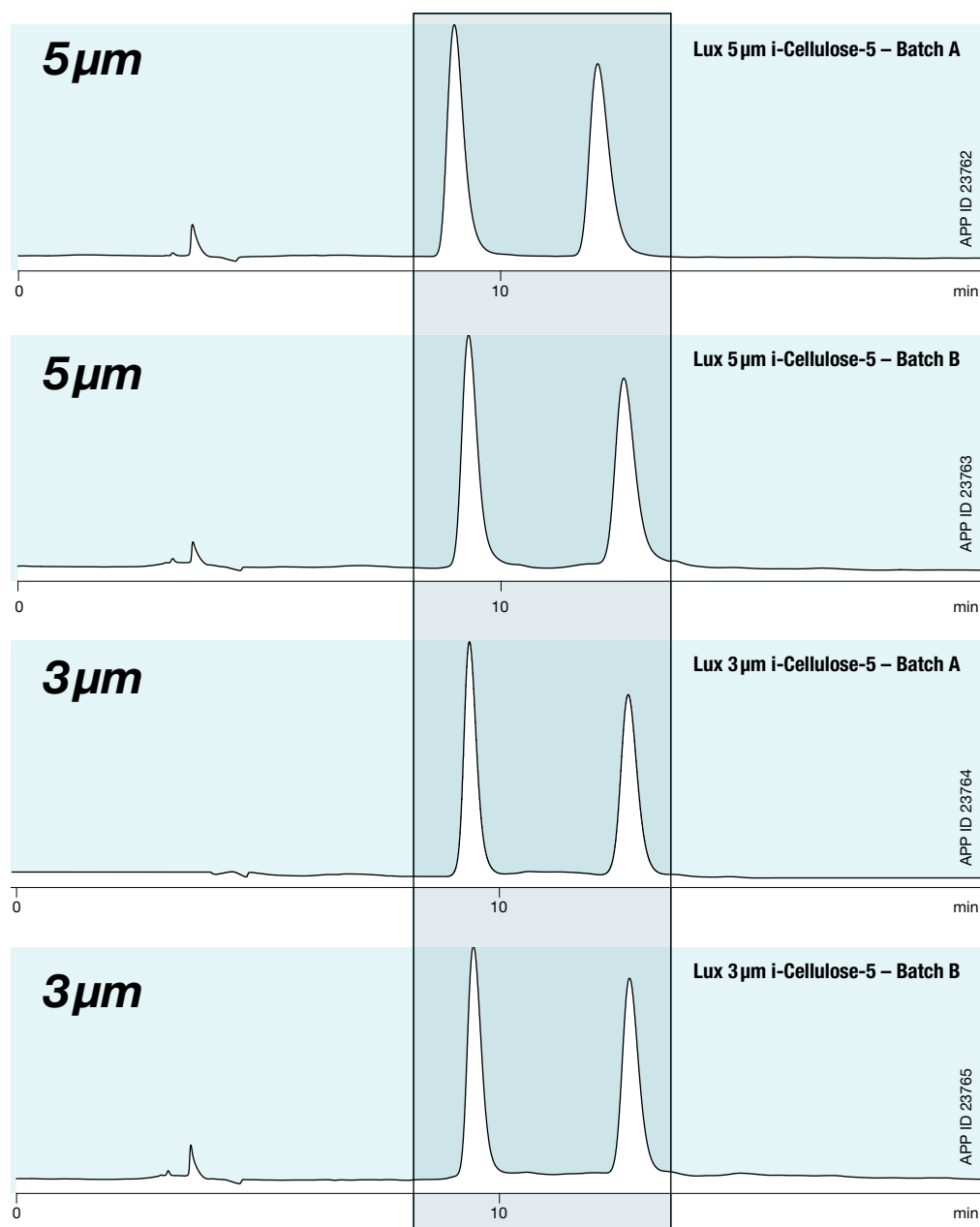
**Sample:** Cannabinoid mix of 12

- |                       |           |
|-----------------------|-----------|
| 1. CBDV               | 8. THCV   |
| 2. CBN                | 9. CBG    |
| 3. Delta-8-THC        | 10. CBDA  |
| 4. CBC (Enantiomer 1) | 11. CBDVA |
| 5. CBD                | 12. THCA  |
| 6. Delta-9-THC        | 13. CBGA  |
| 7. CBC (Enantiomer 2) |           |



# Dependability and Seamless Scalability

Our highest standards of quality will ensure that you are fully satisfied with each and every Lux<sup>®</sup> chiral column as consistent quantitation and results come with every Lux batch/column that we manufacture. With matching selectivity, the 3 $\mu$ m and 5 $\mu$ m i-Cellulose-5 particle sizes allow you to scale down to increase resolution or easily scale up for preparative purification work.



**Conditions for all columns:**  
**Dimensions:** 250 x 4.6 mm  
**Mobile Phase:** 0.1% Ethylamine in DCM / 0.1% Ethylamine in Methanol (98:2)  
**Flow Rate:** 1 mL/min  
**Detection:** UV @ 270 nm  
**Temperature:** Ambient  
**Sample:** Althiazide

**Incredible consistency batch-to-batch and between particle sizes!**

## 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 GL  
= 9001:2008 =**



# Maximize Chiral Purification Performance with Axia Packed Columns

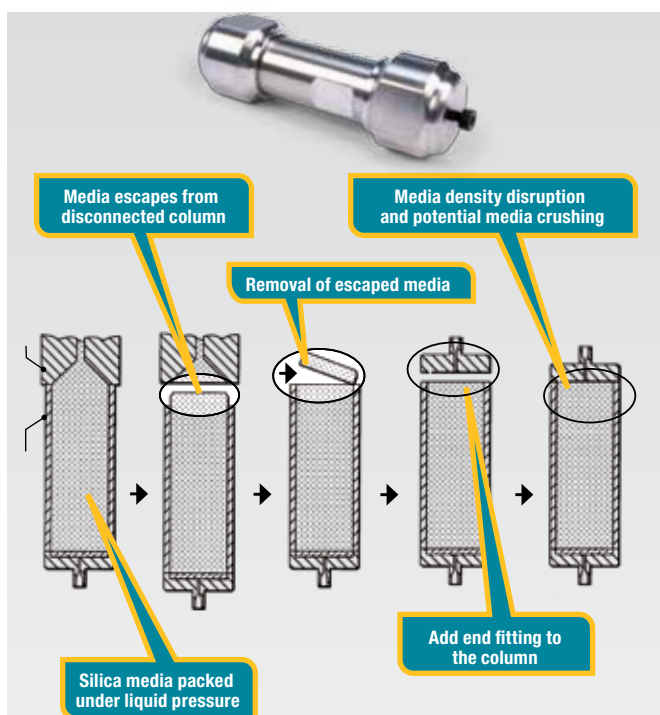
Axia packed preparative columns involve a single axial compression step unlike conventional packed preparative columns like DAICEL® CHIRALCEL® and CHIRALPAK® prep columns. During the Axia packing process, the packing piston is locked in place, eliminating any decompression and then re-compression of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

## AXIA Advantages:

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

## Conventional Packing Process Involves:

Compression → Decompression →  
Re-compression → Final Column



## Traditional packed preparative columns produce non-uniform media beds with sheared and crushed particles

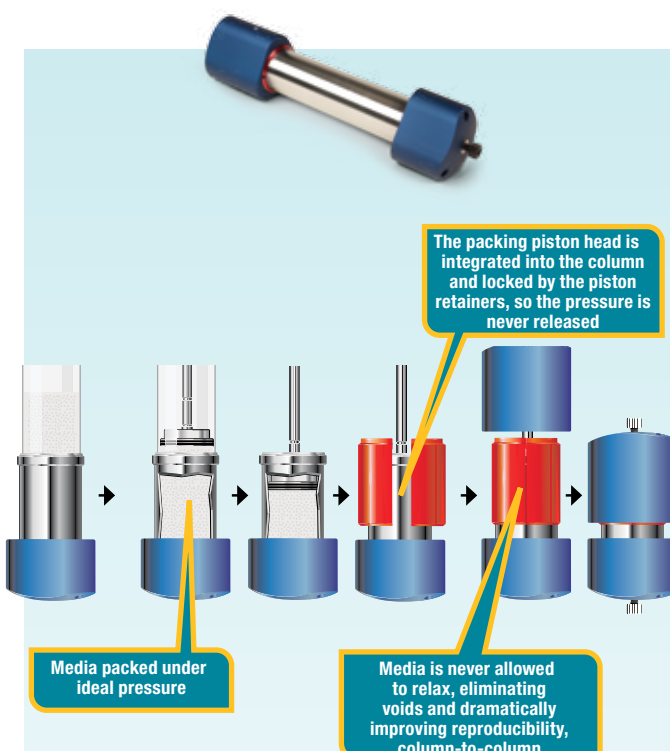
Decompression and then recompression during packing can damage the media and lead to increased column-to-column variability, flow disturbances, and decreased column lifetimes.

\*SEM of Waters® OBD™ inlet frit



## Axia Packing Process Involves:

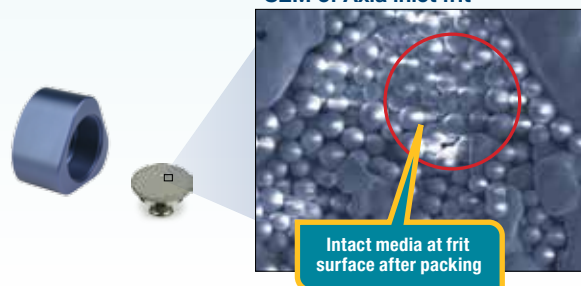
Compression → Final Column



## Axia packed columns produce uniform media bed with intact particles

The highly tuned patented process and hardware eliminates potential decompression ensuring bed stability and optimal packing density. The media found on the inlet frit of the Axia packed column shows no signs of damage unlike the media found on inlet frit of traditionally packed prep columns.

\*SEM of Axia inlet frit



# Ordering Information Lux<sup>®</sup> Chiral Columns



3 μm Minibore, MidBore™, and Analytical Columns (mm)									SecurityGuard™ Cartridges (mm)	
Phases	50 x 2.0	150 x 2.0	100 x 3.0	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*
i-Amylose-1	00B-4761-B0	00F-4761-B0	00D-4761-Y0	00F-4761-Y0	00B-4761-E0	00D-4761-E0	00F-4761-E0	00G-4761-E0	AJ0-8640	AJ0-8641
i-Cellulose-5	00B-4755-B0	00F-4755-B0	00D-4755-Y0	00F-4755-Y0	00B-4755-E0	00D-4755-E0	00F-4755-E0	00G-4755-E0	AJ0-8631	AJ0-8632
Cellulose-1	00B-4458-B0	00F-4458-B0	00D-4458-Y0	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	00D-4456-Y0	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	00D-4492-Y0	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	00D-4490-Y0	00F-4490-Y0	00B-4490-E0	00D-4490-E0	00F-4490-E0	00G-4490-E0	AJ0-8626	AJ0-8627
Amylose-1	00B-4729-B0	00F-4729-B0	00D-4729-Y0	00F-4729-Y0	00B-4729-E0	00D-4729-E0	00F-4729-E0	00G-4729-E0	AJ0-9337	AJ0-9336
Amylose-2	00B-4471-B0	00F-4471-B0	00D-4471-Y0	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*
i-Amylose-1	—	00B-4762-E0	00D-4762-E0	00F-4762-E0	00G-4762-E0	AJ0-8640	AJ0-8641
i-Cellulose-5	—	00B-4756-E0	00D-4756-E0	00F-4756-E0	00G-4756-E0	AJ0-8631	AJ0-8632
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-B0	00B-4732-E0	00D-4732-E0	00F-4732-E0	00G-4732-E0	AJ0-9337	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

5 μm Semi-Prep Columns (mm)			SecurityGuard™ Cartridges (mm)
Phases	150 x 10.0	250 x 10.0	10 x 10.0†
i-Amylose-1	—	00G-4762-N0	AJ0-8642
i-Cellulose-5	—	00G-4756-N0	AJ0-8633
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-1	—	00G-4732-N0	AJ0-9344
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†
i-Amylose-1	00F-4762-P0-AX	00G-4762-P0-AX	00G-4762-U0-AX	00G-4762-V0-AX	AJ0-8643	AJ0-8644
i-Cellulose-5	00F-4756-P0-AX	00G-4756-P0-AX	00G-4756-U0-AX	00G-4756-V0-AX	AJ0-8634	AJ0-8635
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
<b>10 μm</b>		
Cellulose-1	04G-4501	04K-4501
Cellulose-2	04G-4502	04K-4502
Cellulose-3	04G-4624	04K-4624
Cellulose-4	04G-4625	04K-4625
<b>20 μm</b>		
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.



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

# 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
AJ0-8223	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 available.**



## Free Chiral Screening

Trust your sample in the hands of our chiral experts at PhenoLogix and free up your time for other projects! Our screens are set up to utilize all Lux CSPs over normal phase, polar organic, and reversed phase.

Learn more:

[www.phenomenex.com/Services/Phenologix/Chiral](http://www.phenomenex.com/Services/Phenologix/Chiral)

# IMMOBILIZED CHIRAL COLUMNS

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auiinfo@phenomenex.com

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f: +43 (0)1-319-1300  
anfrage@phenomenex.com

### Belgium

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t: +32 (0)2 511 8666 (Dutch)  
f: +31 (0)30-2383749  
beinfo@phenomenex.com

### Canada

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#### Disclaimer

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 or Waters 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.

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