

# Simplified Chiral HPLC/SFC Column Screening Strategies



## Lux Polysaccharide Chiral Columns

Immobilized			Coated				
Amylose		Cellulose	Amylose	Cellulose			
<b>Lux i-Amylose-1</b> Amylose tris (3,5-dimethylphenylcarbamate)	<b>Lux i-Amylose-3</b> Amylose tris (3-chloro-5-methylphenylcarbamate)	<b>Lux i-Cellulose-5</b> Cellulose tris (3,5-dichlorophenylcarbamate)	<b>Lux Amylose-1</b> Amylose tris (3,5-dimethylphenylcarbamate)	<b>Lux Cellulose-1</b> Cellulose tris (3,5-dimethylphenylcarbamate)	<b>Lux Cellulose-2</b> Cellulose tris (3-chloro-4-methylphenylcarbamate)	<b>Lux Cellulose-3</b> Cellulose tris (4-methylbenzoate)	<b>Lux Cellulose-4</b> Cellulose tris (4-chloro-3-methylphenylcarbamate)
Guaranteed Alternative to CHIRALPAK IA* and IA-3	Guaranteed Alternative to CHIRALPAK IG* and IG-3	Guaranteed Alternative to CHIRALPAK IC* and IC-3	Guaranteed Alternative to CHIRALPAK AD*, AD-H*, AD-3, AD-RH*, and AD-3R	Guaranteed Alternative to CHIRALCEL* OD*, OD-H*, OD-3, OD-RH*, and OD-3R	Guaranteed Alternative to CHIRALCEL OZ, OZ-H*, OZ-3, OZ-RH, and OZ-3R	Guaranteed Alternative to CHIRALCEL OJ*, OJ-H*, OJ-3, OJ-RH*, and OJ-3R	Guaranteed Alternative to CHIRALCEL OX-H, OX-3, OX-RH, and OX-3R

### Why Choose Lux Chiral Columns?



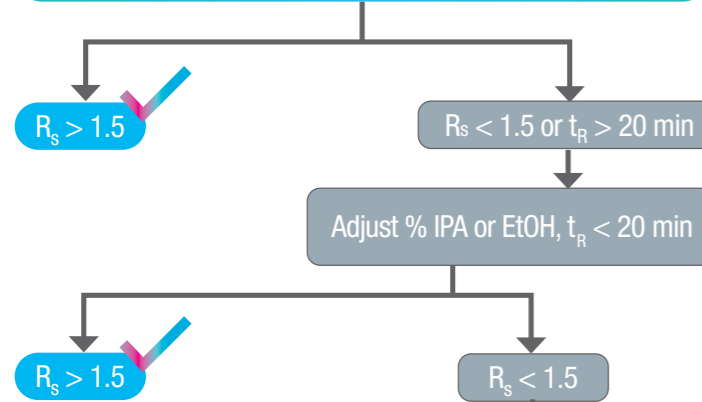
- Suitable for normal phase, polar organic, SFC, and reversed phase conditions
- 3 μm and 5 μm packed columns, as well as 10 μm and 20 μm bulk media for scale up
- Pressure stable up to 300 bar
- High efficiency and loading capacity
- PhenoLogix Free Chiral Screening!
- Easy scale up to Preparative Axia™ column dimensions

### HPLC Screen

Your Lux Polysaccharide column is generally shipped in Normal Phase Mode

#### Normal Phase (NP)

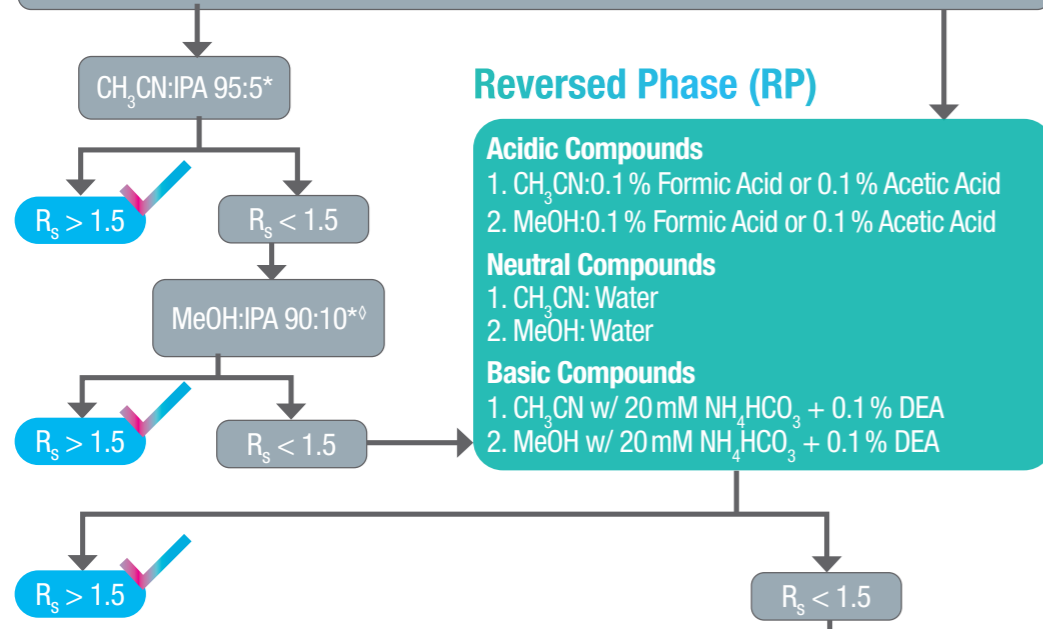
Hexane / IPA (80:20)\* or Hexane / EtOH (90:10)\*



**Tip**

We suggest initially screening all three immobilized Lux phases because of greater solvent flexibility.

Try Polar Organic Conditions or Reversed Phase Conditions



#### Reversed Phase (RP)

- Acidic Compounds**
- CH<sub>2</sub>CN:0.1% Formic Acid or 0.1% Acetic Acid
  - MeOH:0.1% Formic Acid or 0.1% Acetic Acid
- Neutral Compounds**
- CH<sub>2</sub>CN: Water
  - MeOH: Water
- Basic Compounds**
- CH<sub>2</sub>CN w/ 20 mM NH<sub>4</sub>HCO<sub>3</sub> + 0.1% DEA
  - MeOH w/ 20 mM NH<sub>4</sub>HCO<sub>3</sub> + 0.1% DEA

Please contact your local Phenomenex representative for additional support.

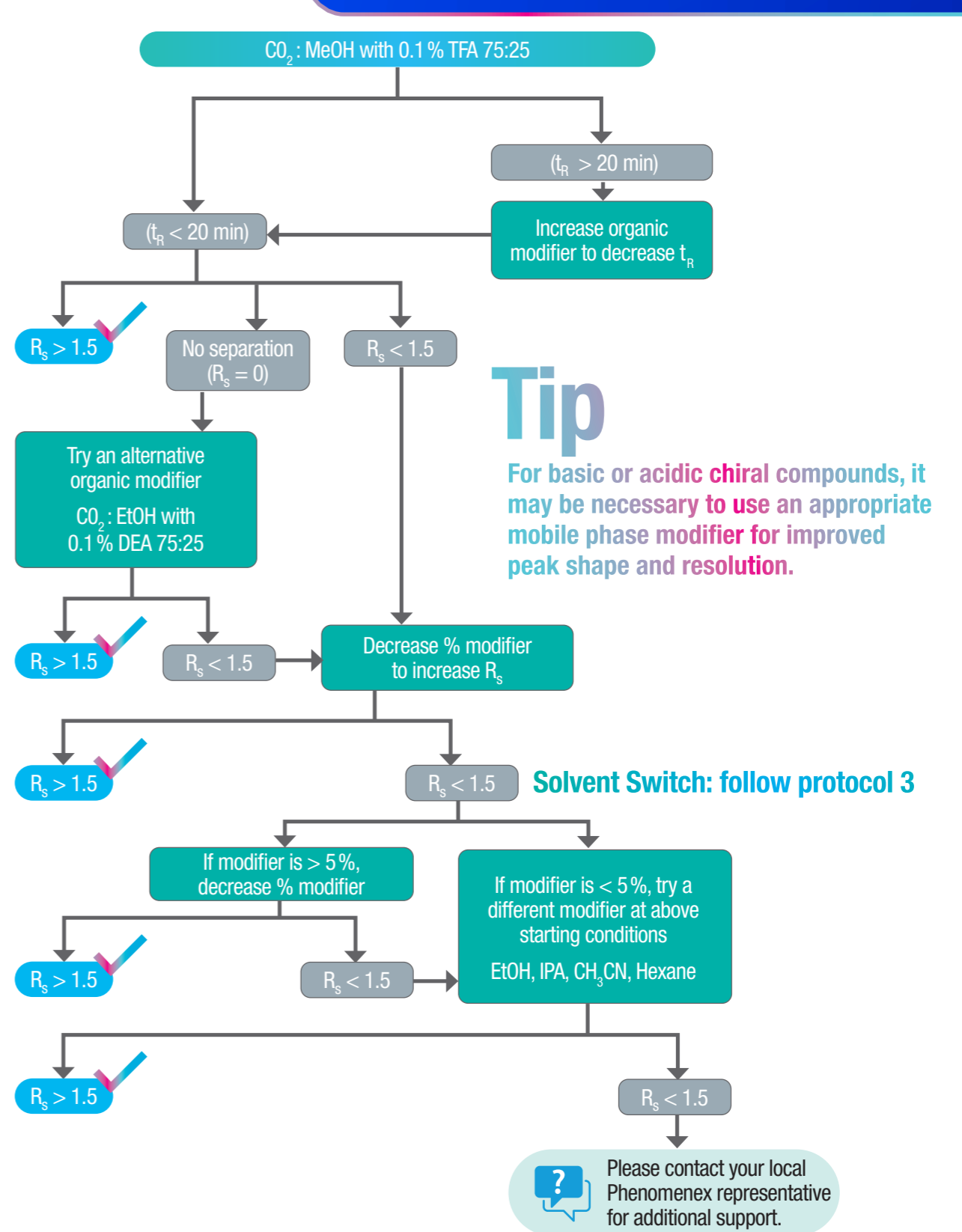
Notes: This screening strategy can be started at any step depending on the properties of the enantiomers. A common dimension used in chiral screening is 250 x 4.6mm. For faster screening, use shorter columns.

- \* 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

ABBREVIATIONS  
IPA: Isopropanol; DEA: Diethylamine; MeOH: Methanol; CH<sub>2</sub>CN: Acetonitrile; EtOH: Ethanol; CH<sub>3</sub>COONH<sub>4</sub>: Ammonium acetate; HCOOH: Formic acid; NH<sub>4</sub>HCO<sub>3</sub>: Ammonium bicarbonate; CO<sub>2</sub>: Carbon Dioxide

### SFC Screen

Switch from Normal Phase to SFC, follow protocol 3



**Tip**

For basic or acidic chiral compounds, it may be necessary to use an appropriate mobile phase modifier for improved peak shape and resolution.

### Solvent Switching Protocols

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

#### Solvent Switch From:

- Protocol 1** 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.
- Protocol 2** 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.
- Protocol 3** 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 SFC mobile phase for 10 column volumes. Lower the flow rate to 0.3 mL/min until the methanol/ethanol flushed out.

#### Solvent Switch To:

- Polar Organic or Reversed Phase\*\*
- Normal Phase
- SFC



\*Once coated phase column is in reversed phase mode, it is recommended to avoid solvent switch again. See column care and use notes at [www.phenomenex.com/lux](http://www.phenomenex.com/lux) for more information.

### Chiral Screening

For more information or to begin a project today, please contact your local Phenomenex representative.

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