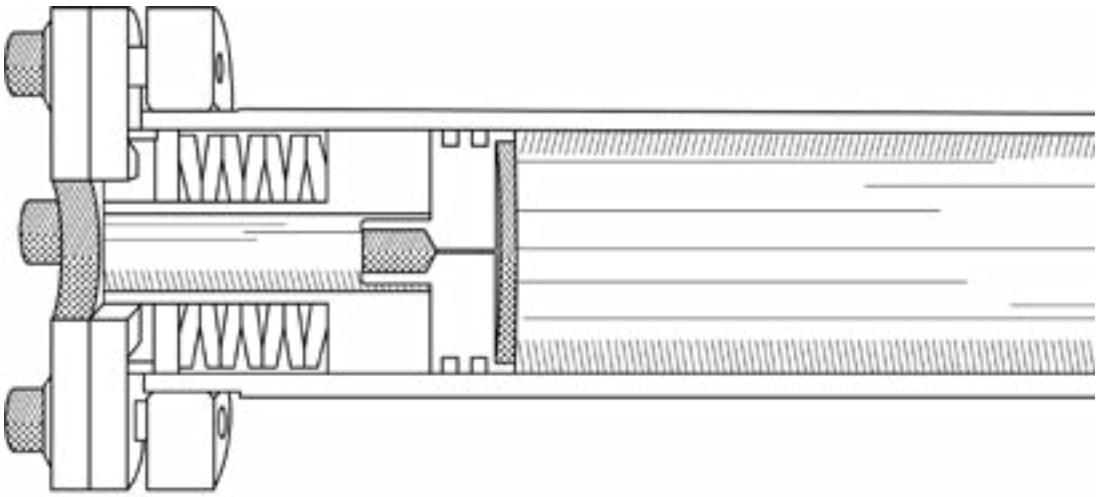
Dr. Maisch

Any Column, Any Size, Any Media



LONGLIFE®

Preparative scale column hardware

MADE BY DR. MAISCH

CONTENT

- P 4 COLUMN PACKING TECHNOLOGIES
- P 5 INTRINSIC PROBLEMS RELATED TO FIXED BED COLUMN PACKING
- P 6 AXIAL COMPRESSION – PACKING WITH A PISTON
- P 7 LONGLIFE COLUMN HARDWARE
- P 8 LONGLIFE TECHNOLOGIES BASED ON THE MODCOL SPRING COLUMN PRINCIPLE
- P 9 THE PATENTED LONGLIFE PRINCIPLE
- P 10 CHIRAL REPROSIL MEDIA
- P 11 OTHER MANUFACTURERS‘ MEDIA
- P 12 3 µm MEDIA FOR ACHIRAL SFC
- P 13 HIGH RESOLUTION PREP CHROMATOGRAPHY PREP COLUMN PERFORMANCE WITH 3 µm PARTICLES
  - BENEFITS
- P 14 SAVING WITH EVERY COLUMN AND REPACKING
- P 15 SUMMARY

LONGLIFE ®
MADE BY DR. MAISCH

From one of the largest **H**igh-**P**erformance **L**iquid **C**hromatography (HPLC) - Column Manufacturers in Europe.

Ako nás možno kontaktovať:

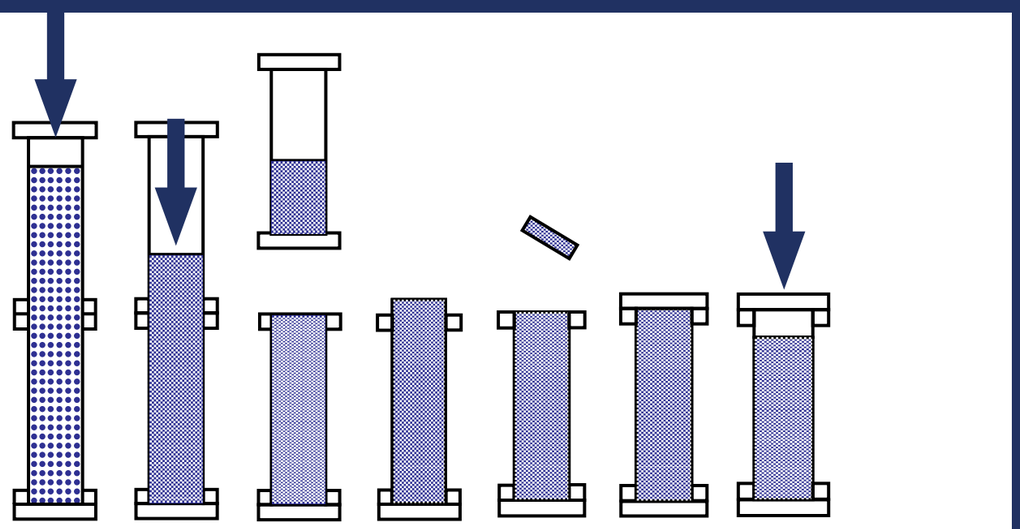
AZ CHROM s.r.o.
Robotnícka 10
831 03 Bratislava
Tel. 0907 244526
azetchrom@hplc.sk
www.azetchrom.sk

COLUMN PACKING TECHNOLOGIES

Fixed bed – packing by solvent flow
Axial compression – packing with a piston

DAC – **D**ynamic **A**xial **C**ompression

SAC – **S**tatic **A**xial **C**ompression



LONGLIFE

INTRINSIC PROBLEMS RELATED TO FIXED BED COLUMN PACKING

SAMPLES

- Need of excess media in packing reservoir

- Further loss of media after release of packing pressure
  - Less loading capacity
  - Lower efficiency

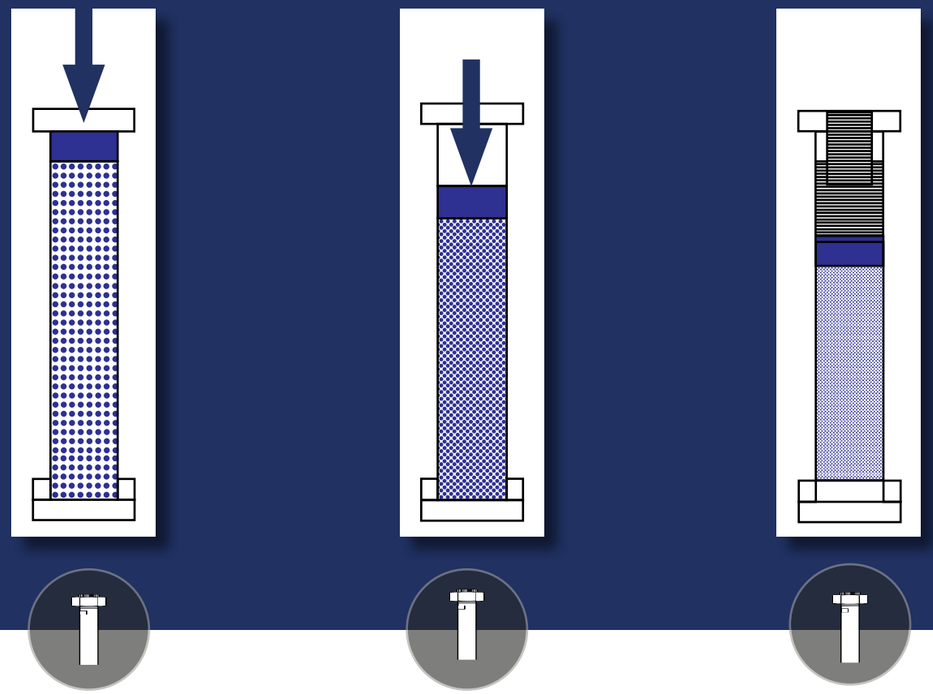
- Possibility of bed disruption upon pressure release

- Non-uniform bed packing density due to pressure drop along the column length under flow pressure packing

- Possibility of formation of voids during use
  limited lifetime

AXIAL COMPRESSION – PACKING WITH A PISTON

Axial compression overcomes these problems:



No need of excess media or loss of media

Mechanical pressure by the force on the piston:

- **Full pressure to the bed over the complete column length → uniform packing density**

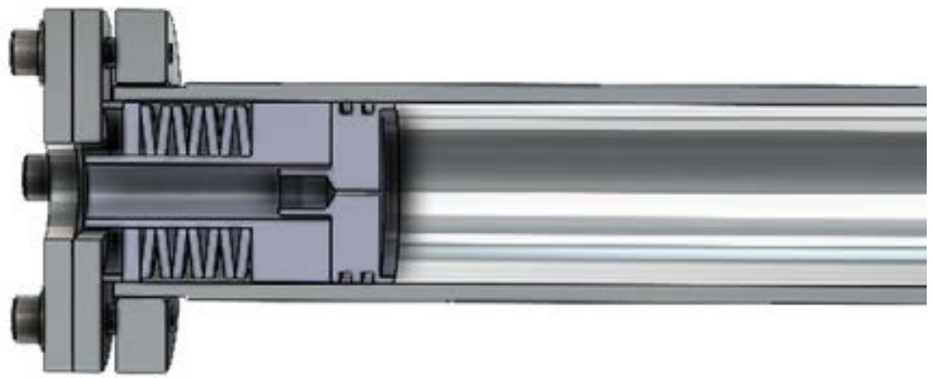
No release of piston pressure

- **No bed disruption**
- **Consistent packing density**
- **No formation of voids**
- **Increased column lifetime**

LONGLIFE

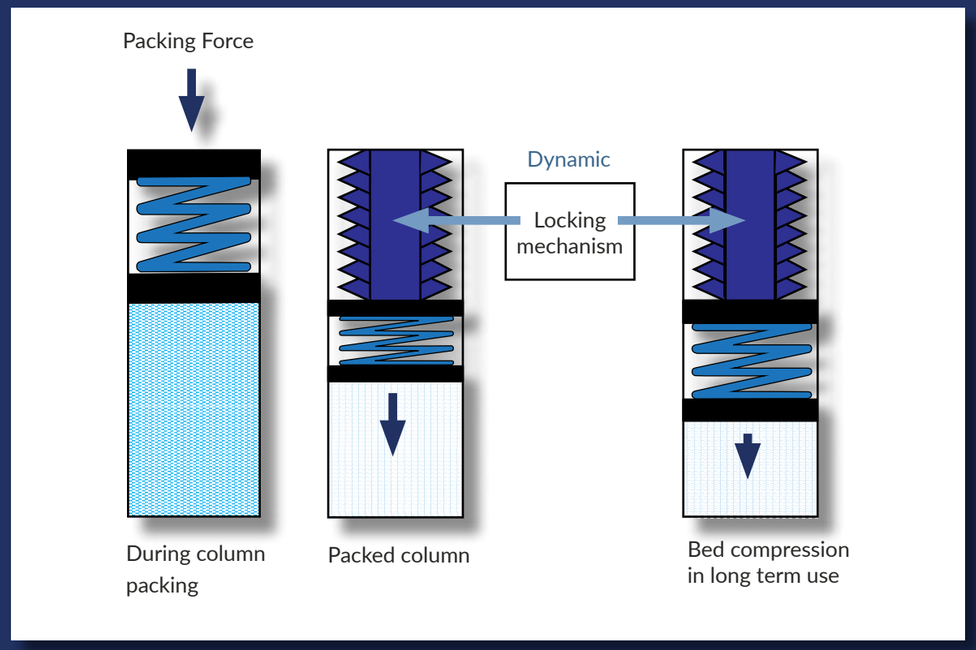
LONGLIFE COLUMN HARDWARE

- Patented premium prep hardware
- SAC and DAC version
- Suitable for SFC
- Extremely high performance and lifetime



www.dr-maisch.com

THE LONGLIFE TECHNOLOGY IS BASED ON THE MODCOL SPRING COLUMN PRINCIPLE

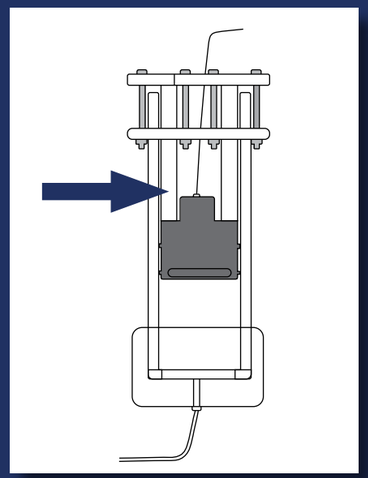


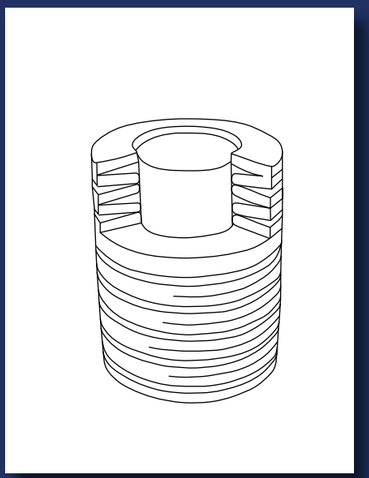
- A column extension (packing reservoir) is used to contain the dilute slurry.
- The packing reservoir is removed after the column has been packed in order to minimise packed column‘s total hardware length.
- The piston stays in the column.
- The pressure is not released.

LONGLIFE

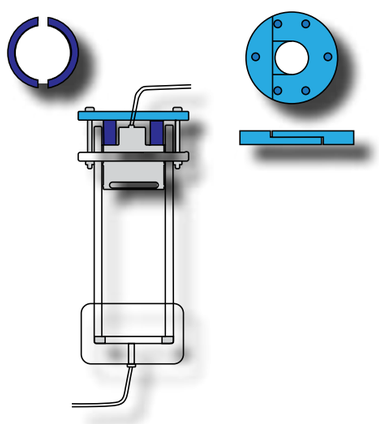
THE PATENTED LONGLIFE PRINCIPLE

The bed length of the packed column can be controlled by the use halb-tube column inserts





Instead of static spacers, washer spring units can be inserted for dynamic axial compression mechanism

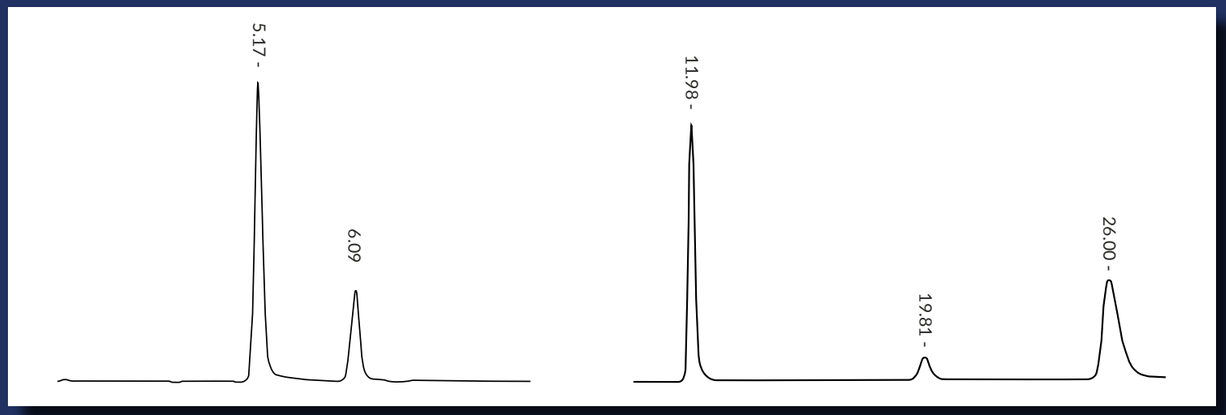


Patented special design of column flange endplate that allows to close the column without removing the piston and releasing the packing pressure.

www.dr-maisch.com

CHIRAL REPROSIL MEDIA

ReproSil Chiral-MIA,
5 µm, 250 mm L x 30 mm ID



ca. 86,000 N/m

TEST CONDITIONS

Mobile Phase: Heptan/IPA 85/15
Flow Rate: 30 ml/min
Temperature: Ambient
Pressure: 34 bar
Detector: UV @ 229 nm
Sensitivity: 0.5 mV

Description:

Packing Material: ReproSil Chiral-MIA, 5 µm
Length: 250 mm ID: 30 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 130 bar
Hardware Type: LongLife SFC
Frit: 2 µm
pH Range: 2.0 - 8.0

ReproSil Chiral NR,
8 µm, 260 mm L x 50 mm ID

ca. 55,000 N/m

TEST CONDITIONS

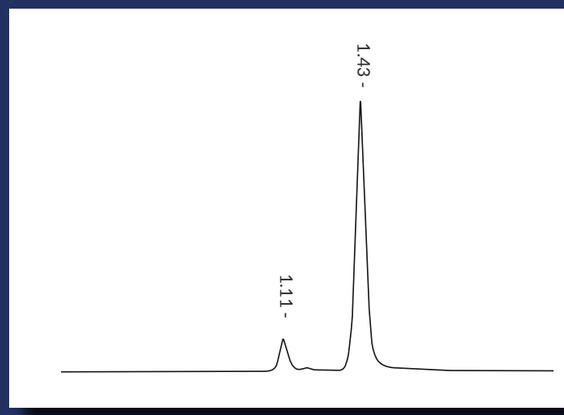
Mobile Phase: Heptan/IPA 85/15
Flow Rate: 60 ml/min
Temperature: Ambient
Pressure: 12 bar
Detector: UV @ 254 nm
Sensitivity: 0.6 mV

Description:

Packing Material: ReproSil Chiral-NR, 8 µm
Length: 260 mm ID: 50 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 250 bar
Hardware Type: LongLife SAC
Frit: 2 µm
pH Range: 2.0 - 8.0

OTHER MANUFACTURERS MEDIA

Zorbax SB-AQ,
5 µm, 70 mm L x 30 mm ID



ca. 76,700 N/m

TEST CONDITIONS

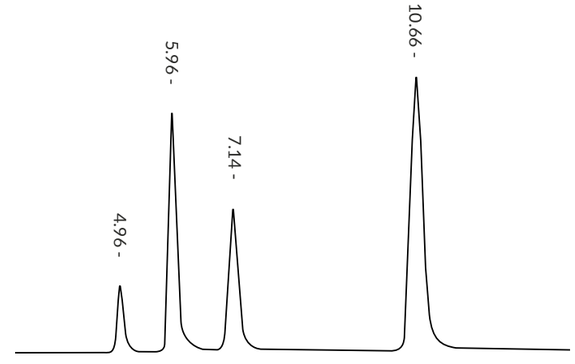
Mobile Phase: MeOH/H2O 85/15
Flow Rate: 30 ml/min
Temperature: Ambient
Pressure: 24 bar
Detector: UV @ 254 nm
Sensitivity: 59.8 mV

Description:

Packing Material: Zorbax SB-AQ, 5 µm
Length: 75 mm ID: 30 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 210 bar
Hardware Type: LongLife SAC
Frit: 2 µm
pH Range: 2.0 - 8.0

Peak 1: Uracil
Peak 2: Toluene

Luna C18 (3)
10 µm, prep 250 mm L x 70 mm ID



ca. 39,600 N/m

TEST CONDITIONS

Mobile Phase: MeOH/H2O 85/15
Flow Rate: 120 ml/min
Temperature: Ambient
Pressure: 10 bar
Detector: UV @ 254 nm
Sensitivity: 1.8 mV

Description:

Packing Material: Luna 100 C18(3), 10 µm
Length: 250 mm ID: 70 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 100 bar
Hardware Type: LongLife
Frit: 2 µm
pH Range: 2.0 - 8.0

www.dr-maisch.com

3 µm MEDIA FOR ACHIRAL SFC

Reprospher 100 2-EP,
3 µm, 100 mm L x 50 mm ID

ca. 90,000 N/m

TEST CONDITIONS

Mobile Phase: MeOH/H2O 85/15
Flow Rate: 60 ml/min
Temperature: Ambient
Pressure: 85 bar
Detector: UV @ 254 nm
Sensitivity: 21.1 mV

Description:

Packing Material: Reprosher 100 PEI 3 µm
Length: 100 mm ID: 50 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 200 bar
Hardware Type: LongLife SFC
Frit: 2 µm
pH Range: 2.0 - 8.0

Reprospher 100 PEI,
3 µm, 100 mm L x 50 mm ID

ca. 106,000 N/m

TEST CONDITIONS

Mobile Phase: MeOH/H2O 85/15
Flow Rate: 60 ml/min
Temperature: Ambient
Pressure: 120 bar
Detector: UV @ 254 nm
Sensitivity: 58.7 mV

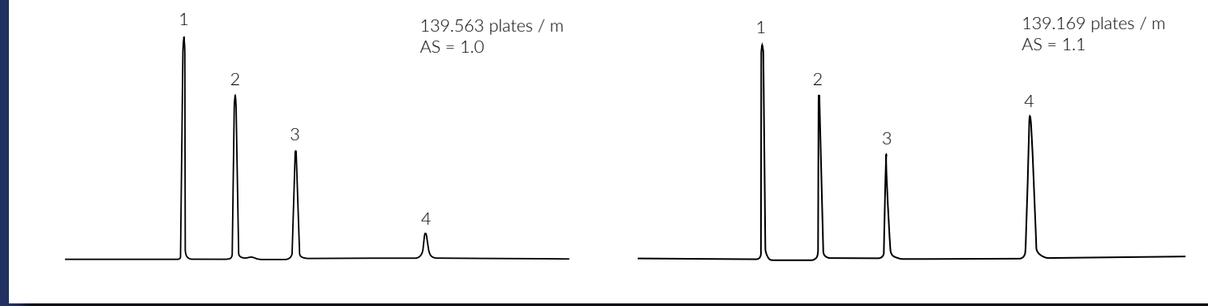
Description:

Packing Material: Reprosher 100 PEI 3 µm
Length: 100 mm ID: 50 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 200 bar
Hardware Type: LongLife SFC
Frit: 2 µm
pH Range: 2.0 - 8.0

LONGLIFE

HIGH RESOLUTION PREP CHROMATOGRAPHY PREP COLUMN PERFORMANCE WITH 3 µm PARTICLES

UP-SCALE



1 - Uracil 2 - Phenol 3 - N,N-Diethyl-M-Toluamide 4 - Toluene

250 x 4,6 mm

250 x 50 mm

BENEFITS OF LONGLIFE

DR. MAISCH

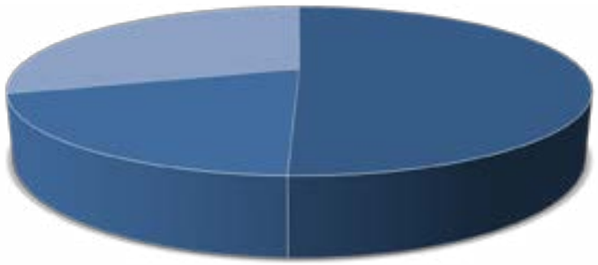
- Packed by piston
- Flexible bed length
- DAC and SAC mechanism
- Packing and repacking service
- Available column ID - 25, 30, 40, 50, 70
- Scalability to > 150 mm ID -Using ModCol column / Multipacker

www.dr-maisch.com

LONGLIFE

Saving with every column and repacking

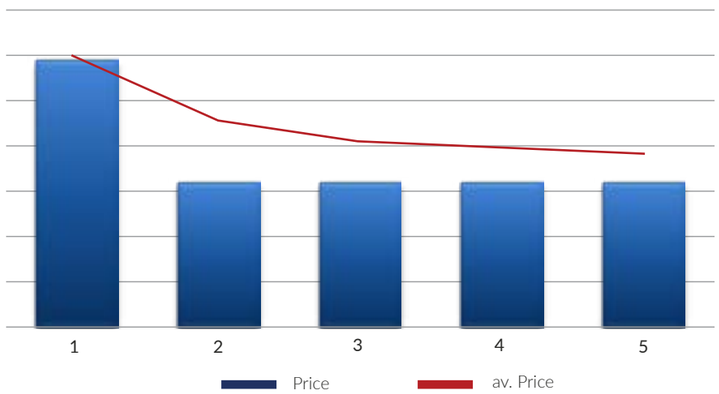
Often the column hardware represents a significant part of the column value:



Hardware:	50 %
Packing Serv:	20 %
Media:	30 %

Longlife packed with Reprosil-Pur Basic-C18 10 µm; 250 x 50 mm

Savings upon multiple repacking of LongLife hardwear



SUMMARY

01

Performance and stability are extremely high!

Column size is shorter compared to MoDcol.

02

Technology:

Packing is similar to MoD-col, but the reservoir and the column are separated after the packing.

03

The piston stays in the column

04

Can only packed at Dr. Maisch HPLC

05

Option to use MoDcol columns with same packing technology if interested in self-packing or for diameters > 70 mm

06

LongLife is available in DAC and SAC mode:

25, 30, 40, 50 and 70 mm ID

Dr. Maisch

Any Column, Any Size, Any Media

Ako nás možno kontaktovať:

AZ CHROM s.r.o.
Robotnícka 10
831 03 Bratislava
Tel. 0907 244526
azetchrom@hplc.sk
www.azetchrom.sk

Dr. Maisch HPLC GmbH
Beim Brückle 14
D-72119 Ammerbuch
T: +49 7073 50357
F: +49 7073 4216
www.Dr-Maisch.com
www.MODcol.com
E-Mail: info@Dr-Maisch.com