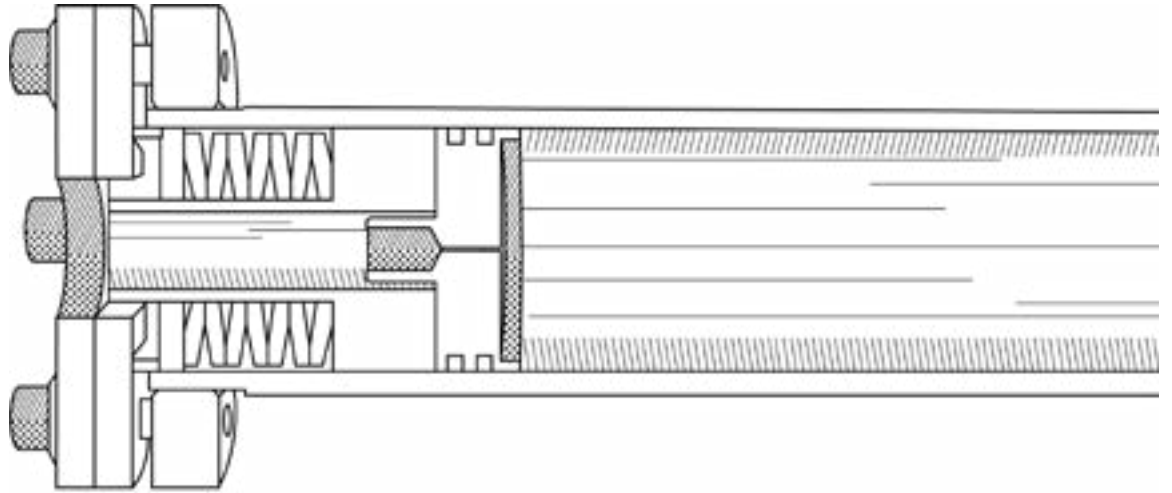


Dr. Maisch

Any Column, Any Size, Any Media



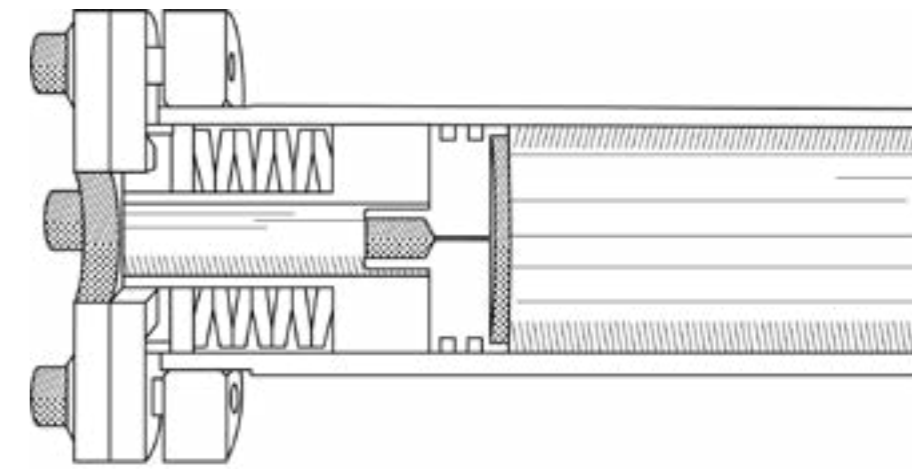
LONGLIFE

Preparative scale column hardware

MADE BY DR. MAISCH

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**LONGLIFE
MADE BY DR. MAISCH**

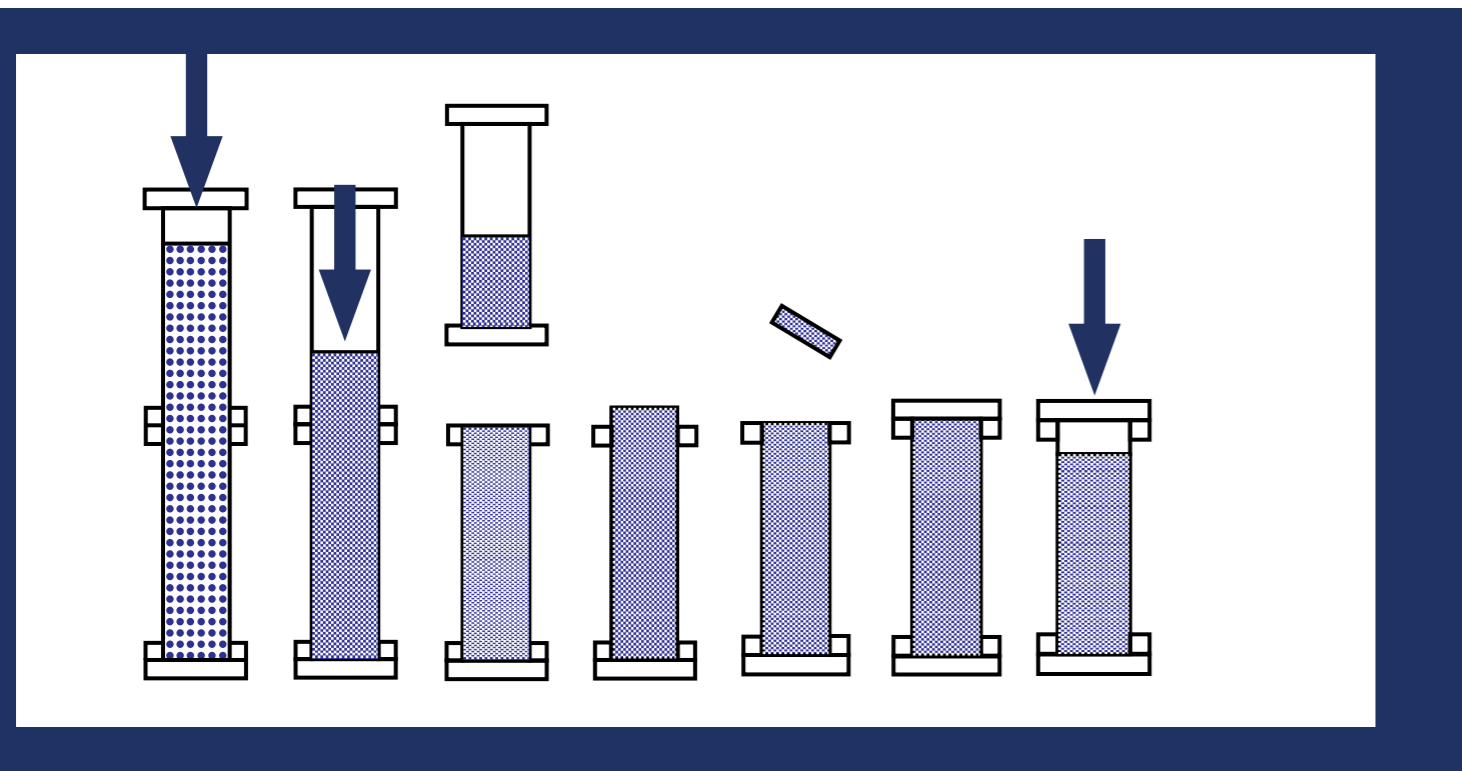
From one of the biggest **High-Performance Liquid Chromatography (HPLC)** - Column Manufacturers in Europe.

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



Dilute slurry in column and packing reservoir
 Bed compaction in column and packing through the column
 Removal of packing reservoir; pressure released
 Extrusion of stationary phase to pressure release
 Removal of extruded phase due to pressure release
 Closing the column (at ambient pressure)
 Possibility of formation of voids under eluent flow pressure

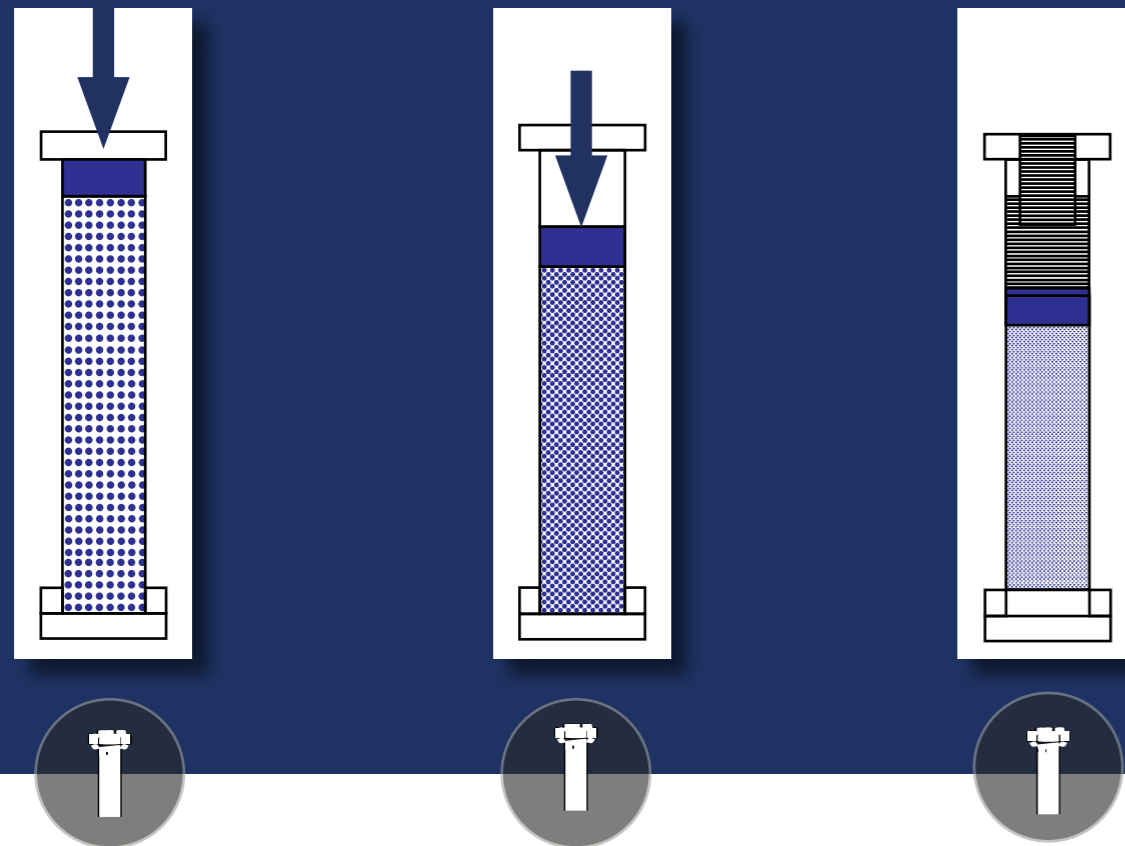
INTRINSIC PROBLEMS RELATED TO FIXED BED COLUMN PACKING

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:

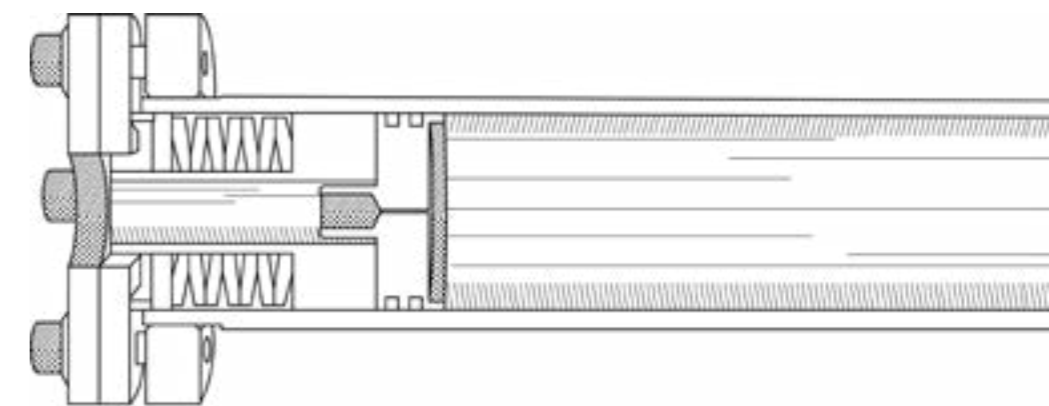
- Full pressure to the bed over the complete column length → uniform packing density

No release of piston pressure:

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

LONGLIFE COLUMN HARDWARE

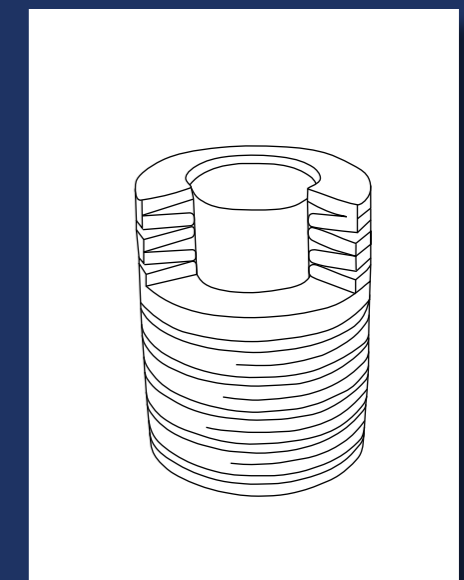
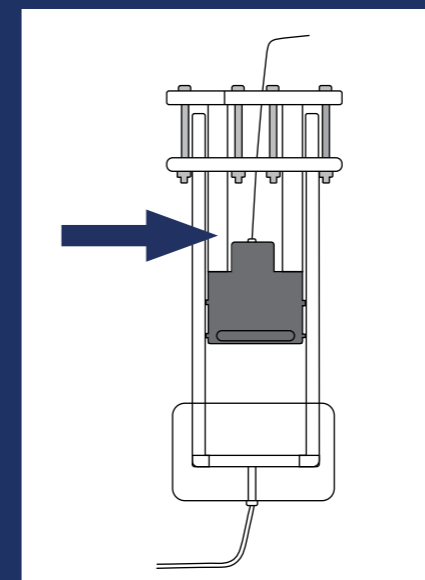
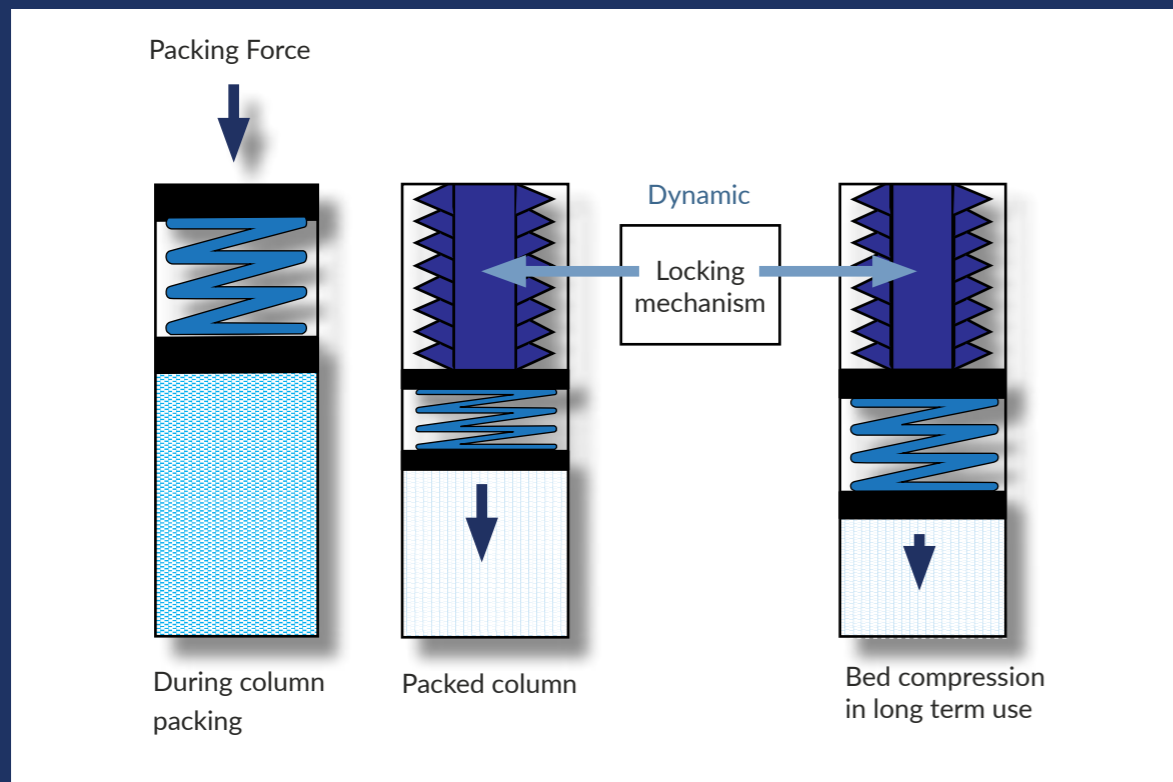
- Patented premium prep hardware
- SAC and DAC version
- Suitable for SFC
- Extremely high performance and lifetime



THE LONGLIFE TECHNOLOGY IS BASED ON THE MODCOL SPRING COLUMN PRINCIPLE

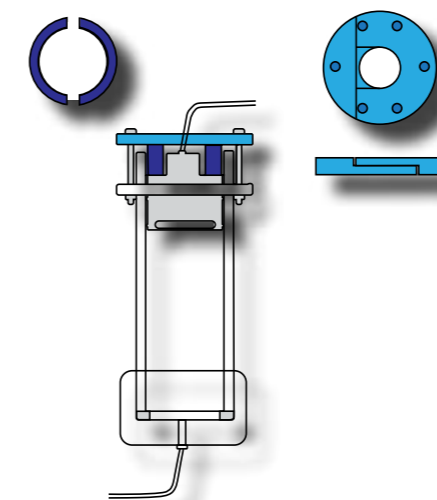
THE PATENTED LONGLIFE PRINCIPLE

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



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

- 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.



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

Patent No: DE202018001788
DE202016000500111

CHIRAL REPROSIL MEDIA

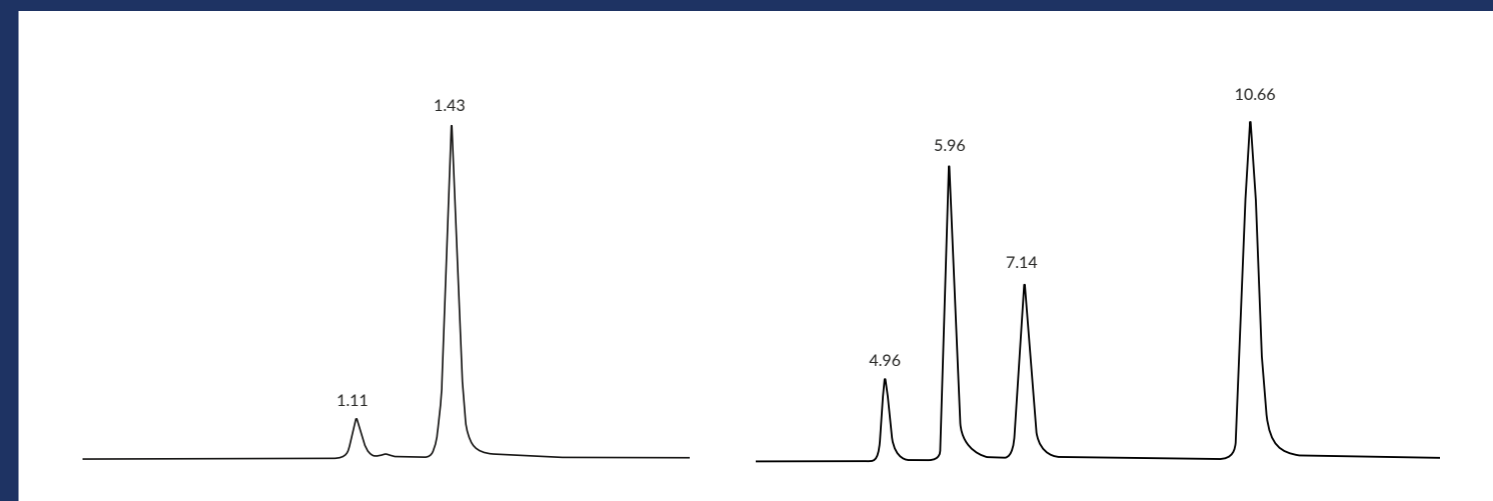
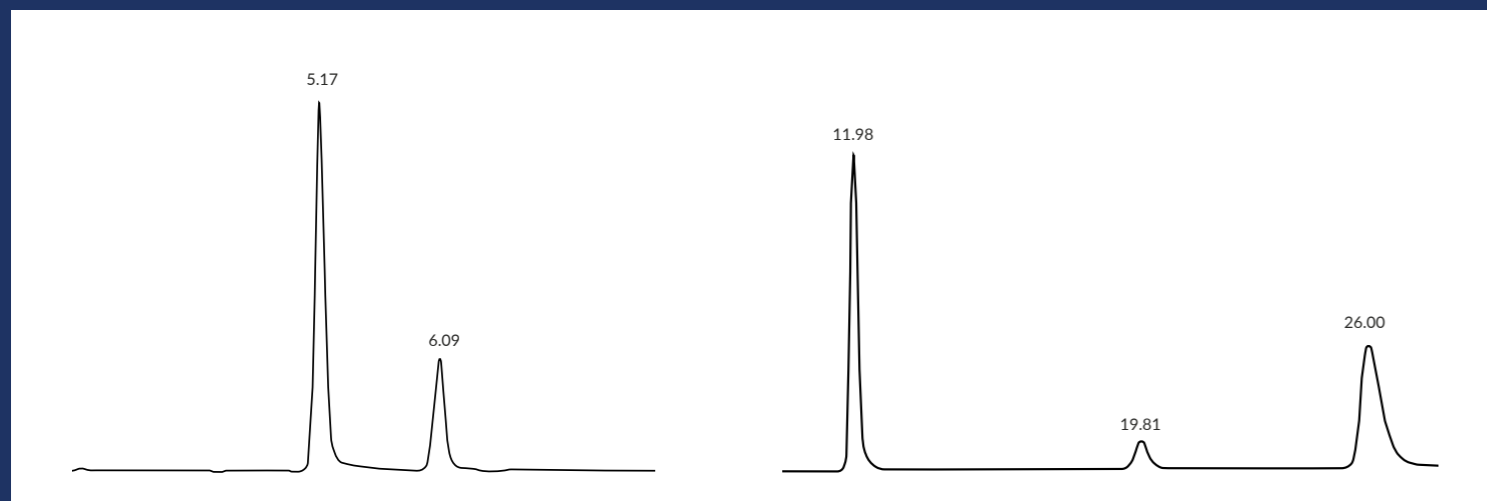
OTHER MANUFACTURERS MEDIA

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

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

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

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



ca. 90,000 N/m

ca. 60,000 N/m

ca. 80,000 N/m

ca. 40,000 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

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

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

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

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
Frit: 2 µm
pH Range: 2.0 - 8.0

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
Frit: 2 µm
pH Range: 2.0 - 8.0

Description:

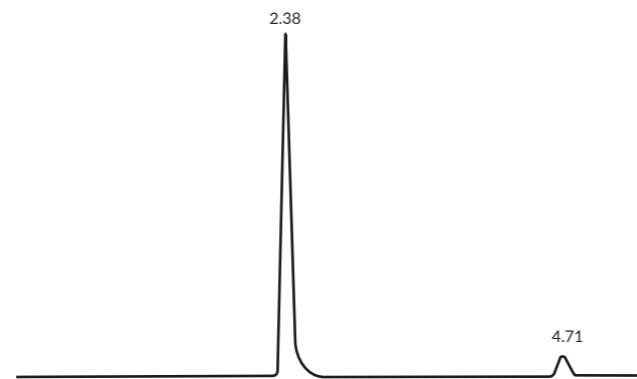
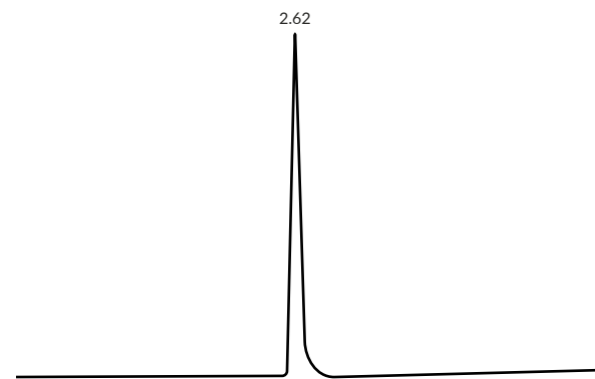
Packing Material: Luna 100 C18(3), 10 µm
Length: 250 mm ID: 70 mm
Shipping Solvent: Mobile Phase
Maximum Pressure: 100 bar
Hardware Type: LongLife
Frit: 2 µm
pH Range: 2.0 - 8.0

Peak 1: Uracil
Peak 2: Toluene

3 µm MEDIA FOR ACHIRAL SFC

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

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



ca. 90,000 N/m

ca. 110,000 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: Reprospher 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

TEST CONDITIONS

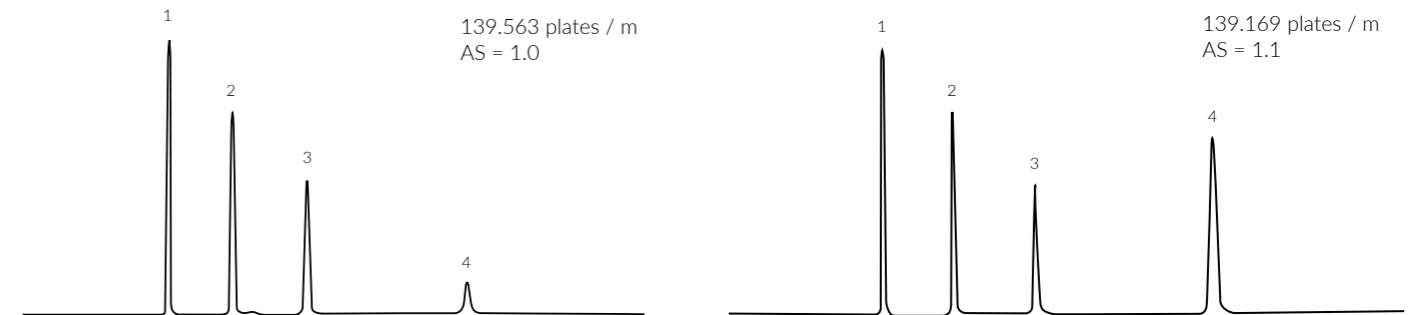
Mobile Phase: MeOH/H2O 85/15
Flow Rate: 60 ml/min
Temperature: Ambient
Pressure: 120 bar
Detector: UV @ 254 nm
Sensitivity: 58.7 mV

Description:

Packing Material: Reprospher 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

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

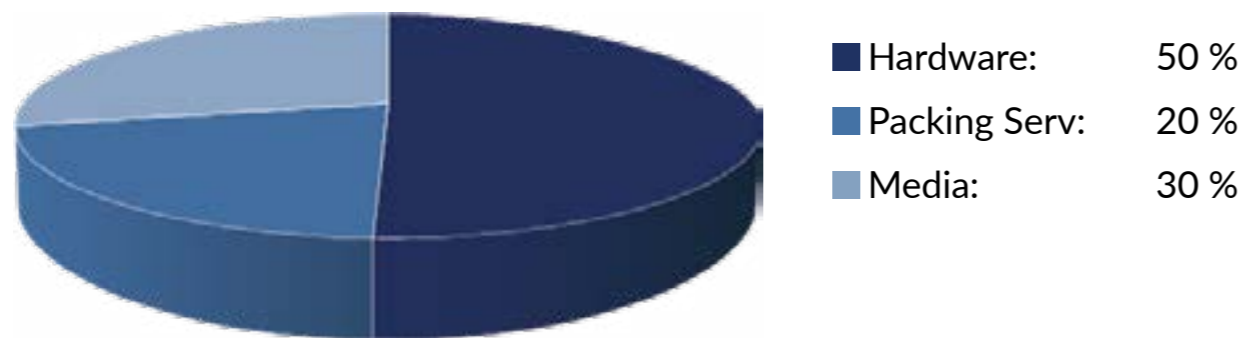
BENEFITS OF LONGLIFE

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

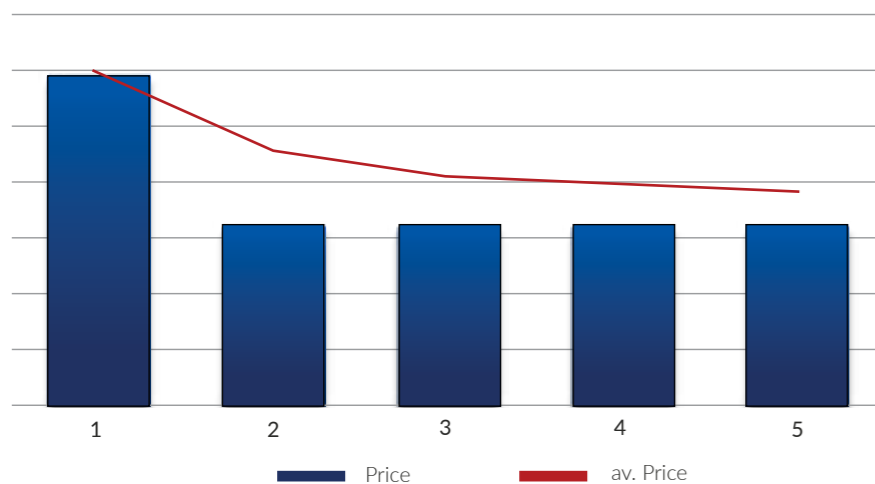
Saving with every column and repacking

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



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

Savings upon multiple repacking of LongLife hardware.



SUMMARY

01

Performance and stability are extremely high!
Column size is shorter compared to MoDcol.

02

Technology:
Packing is similar to MoDcol, 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

Distributor:

Dr. Maisch HPLC GmbH
Beim Brückle 14
D-72119 Ammerbuch
T: +49 (0) 7073 50357
F: +49 (0) 7073 4216
www.dr-maisch.com
www.modcol.com
E-Mail: info@dr-maisch.com



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