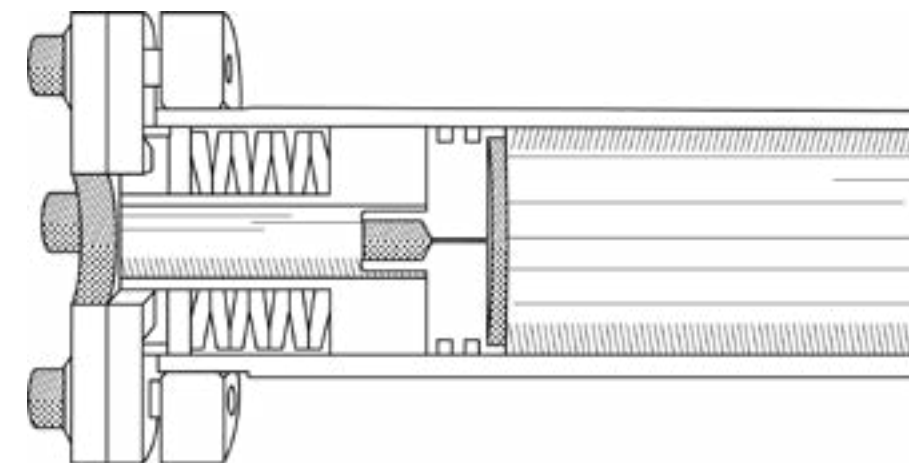


**ONGLIFE**  
Preparative scale column hardware

MADE BY DR. MAISCH

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**LONGLIFE  
MADE BY DR. MAISCH**

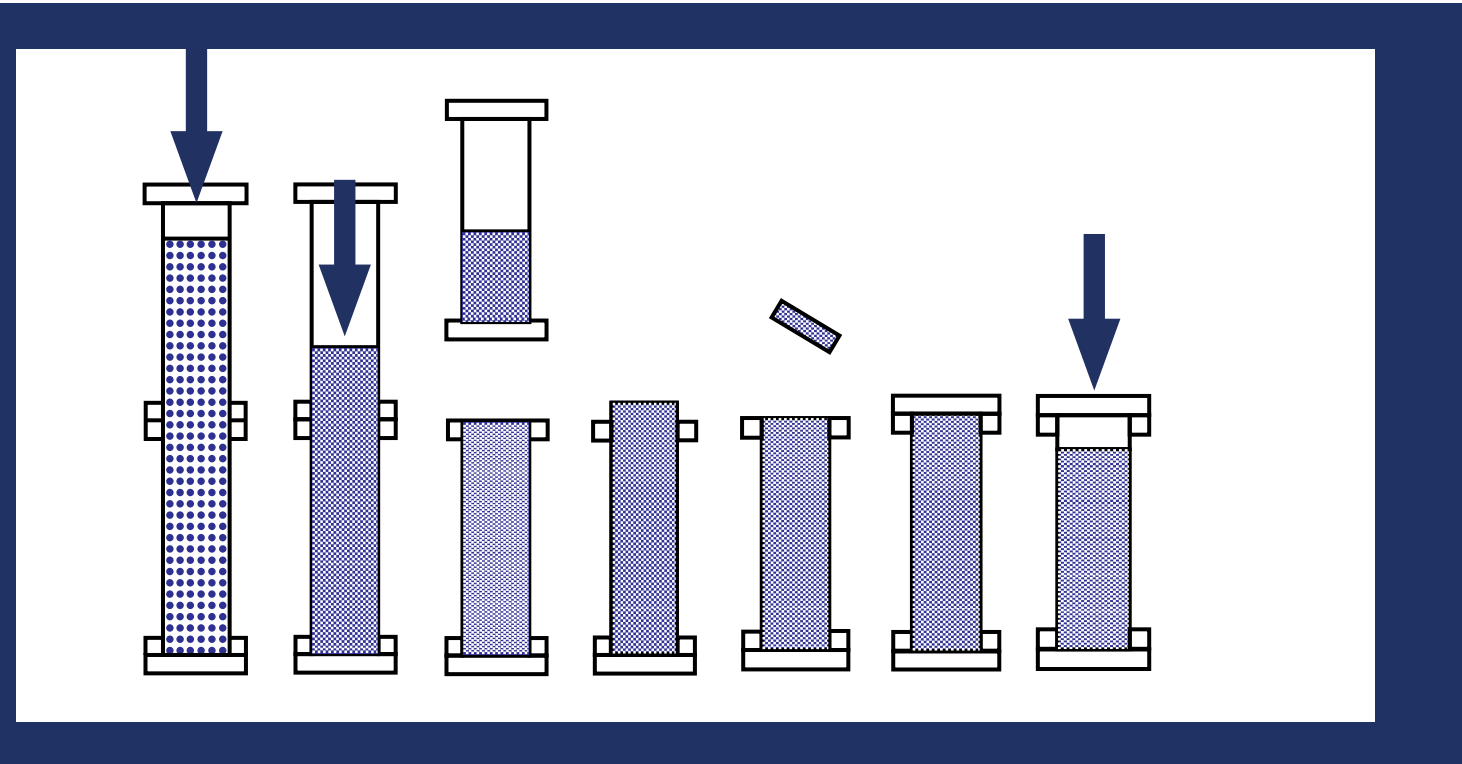
From one of the biggest **H**igh-**P**erformance  
**L**iquid **C**hromatography (HPLC) - Column  
Manufacturers in Europe.

## 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 by pumping eluent through the column  
 Removal of packing reservoir; pressure released  
 Extrusion of stationary phase due to pressure release  
 Removal of extruded column bed  
 Closing the column (at ambient pressure)  
 Possibility of formation of voids under eluent flow pressure

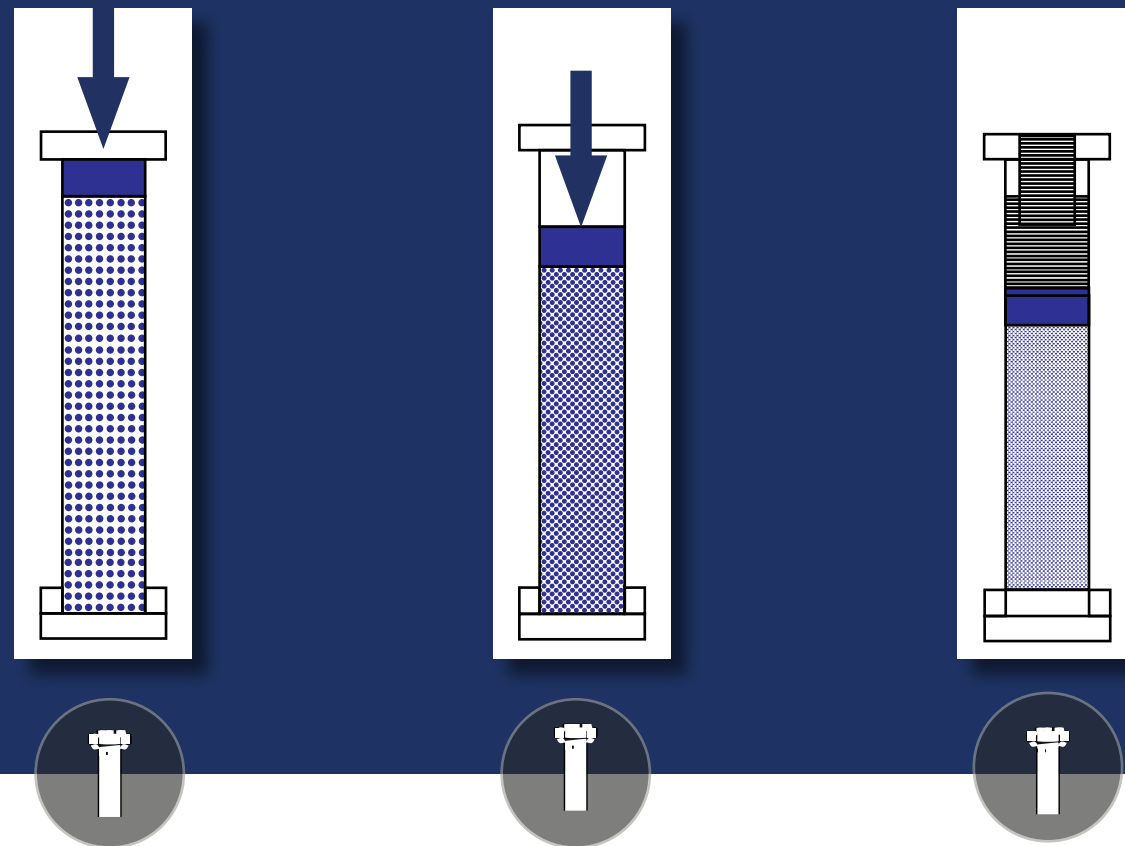
## INTRINSIC PROBLEMS RELATED TO FIXED BED COLUMN PACKING

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:

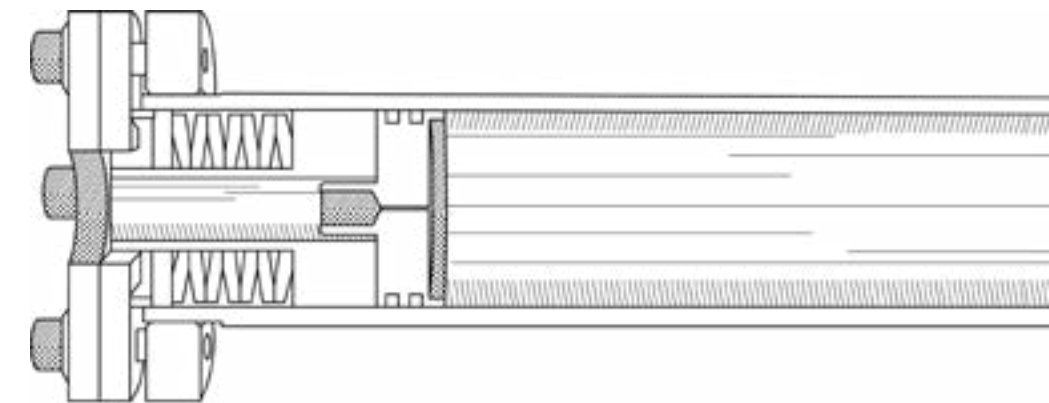
- Full pressure to the bed over the complete column length → uniform packing density

No release of piston pressure:

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

## LOGLIFE COLUMN HARDWARE

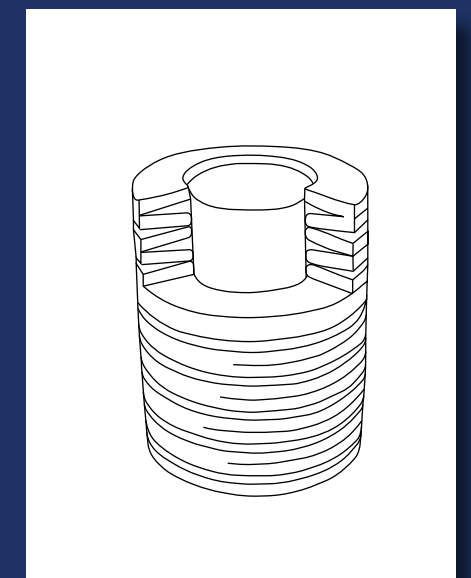
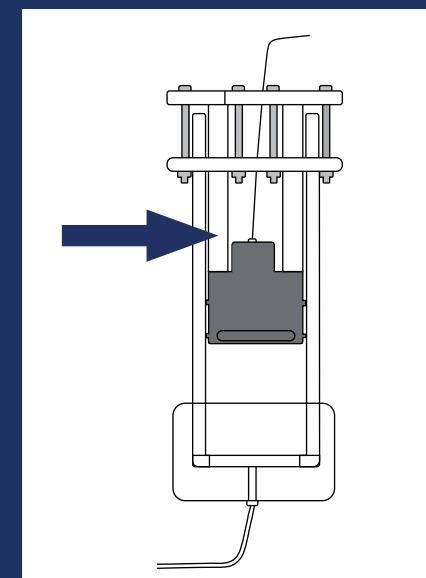
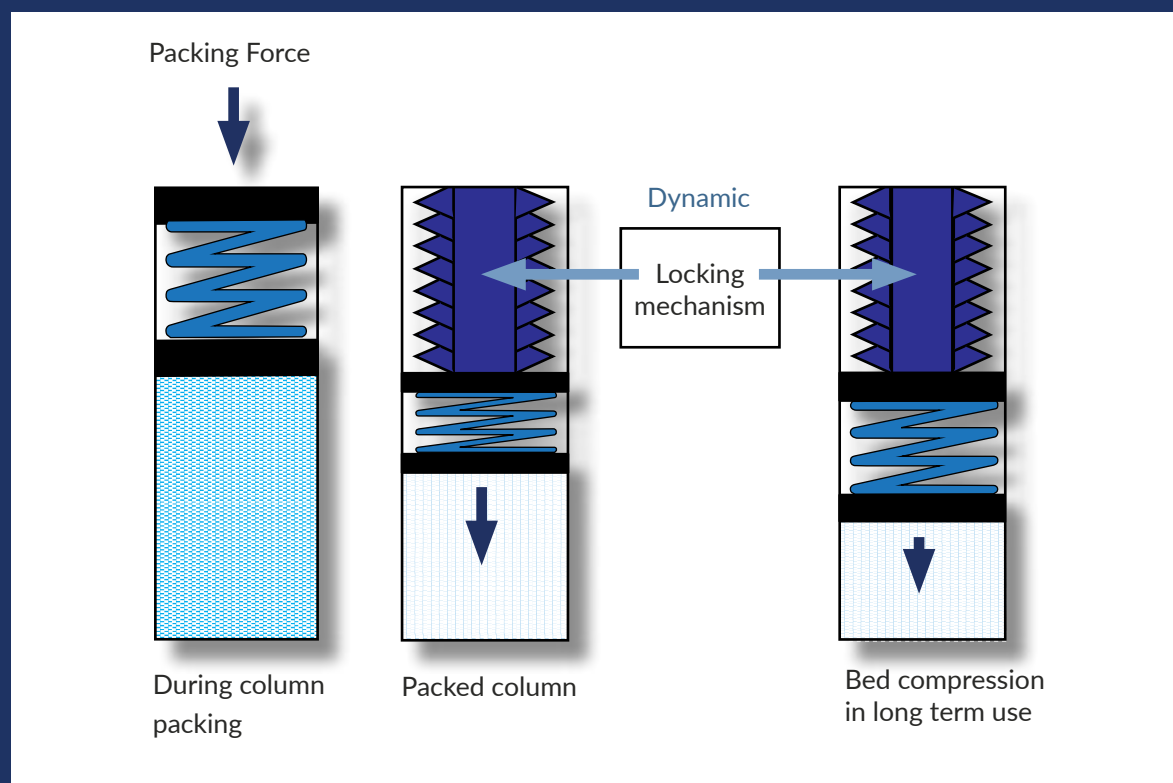
- Patented premium prep hardware
- SAC and DAC version
- Suitable for SFC
- Extremely high performance and lifetime



## THE LOGLIFE TECHNOLOGY IS BASED ON THE MODCOL SPRING COLUMN PRINCIPLE

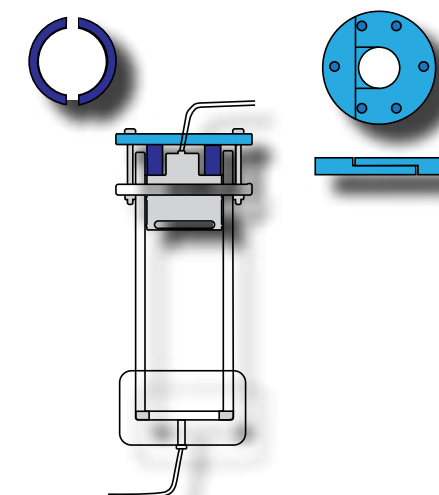
## THE PATENTED LOGLIFE PRINCIPLE

The bed length of the packed column can be controlled by the use of 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.



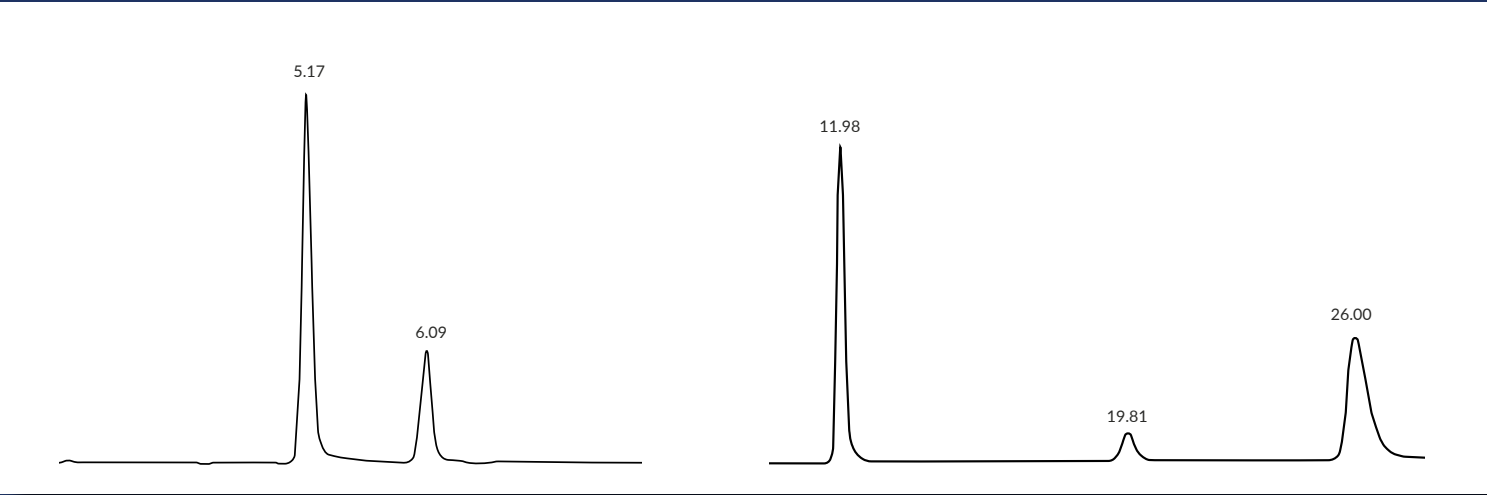
Patented special design of column flange endplate that allows to close the column without removing the piston and releasing the packing pressure.

Patent No: DE202018001788  
DE202016000500111

CHIRAL REPROSIL MEDIA

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

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



ca. 90,000 N/m

ca. 60,000 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  
Frit: 2 µm  
pH Range: 2.0 - 8.0

**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

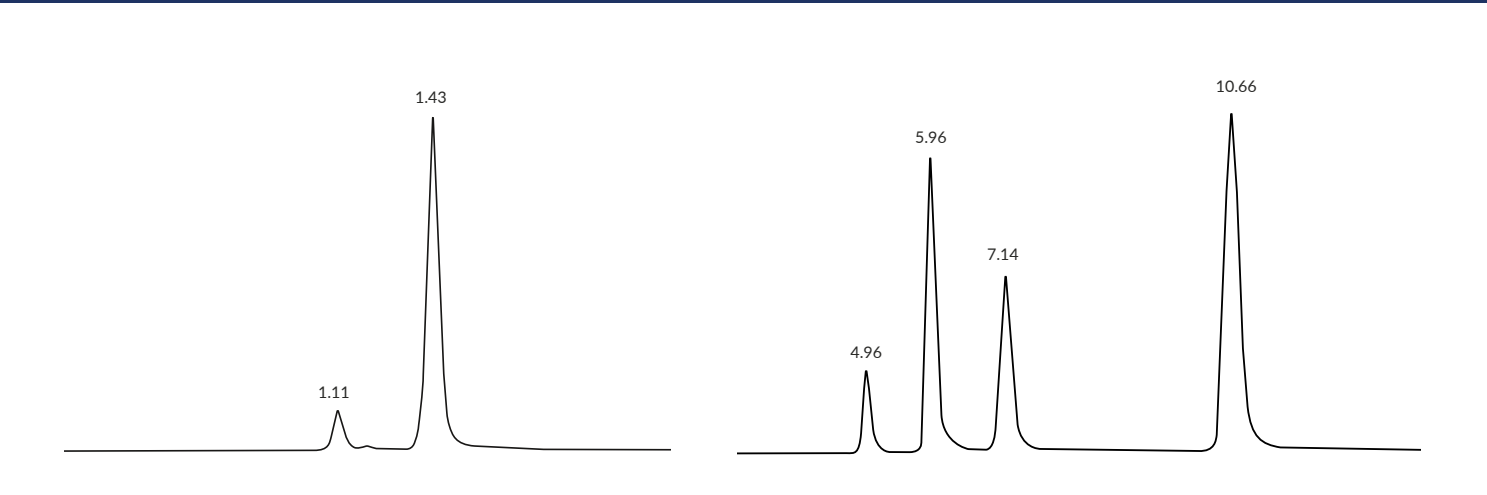
**Description:**

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

OTHER MANUFACTURERS MEDIA

**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. 80,000 N/m

ca. 40,000 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  
Frit: 2 µm  
pH Range: 2.0 - 8.0

Peak 1: Uracil  
Peak 2: Toluene

**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

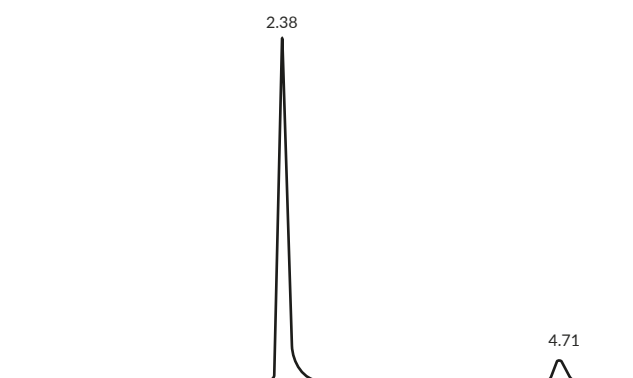
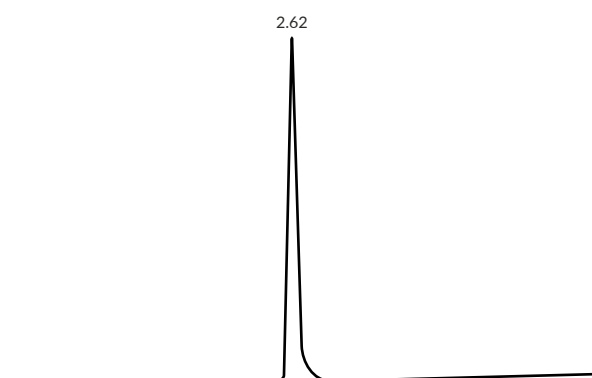
**Description:**

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

## 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/H<sub>2</sub>O 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

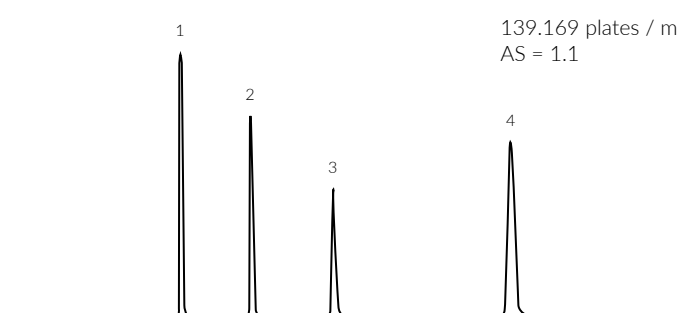
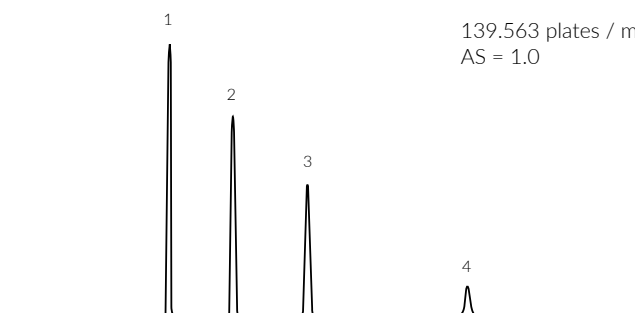
Mobile Phase: MeOH/H<sub>2</sub>O 85/15  
Flow Rate: 60 ml/min  
Temperature: Ambient  
Pressure: 120 bar  
Detector: UV @ 254 nm  
Sensitivity: 58.7 mV

### 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

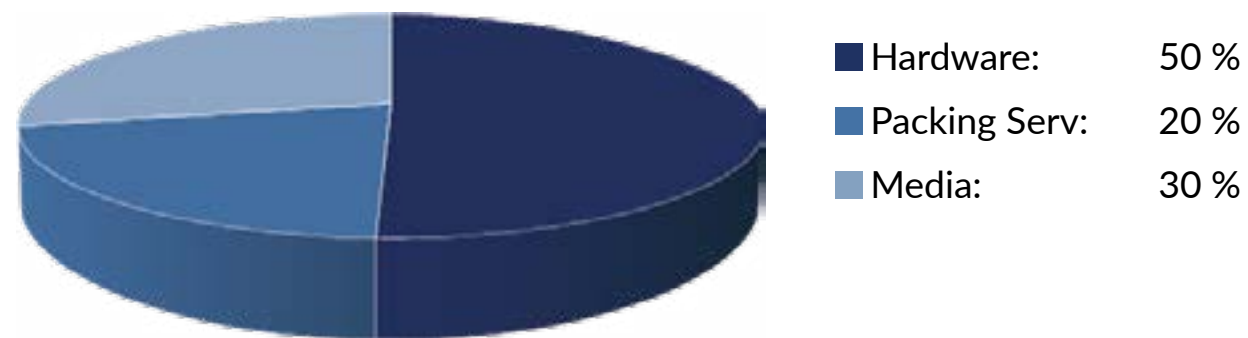
## BENEFITS OF LONGLIFE

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

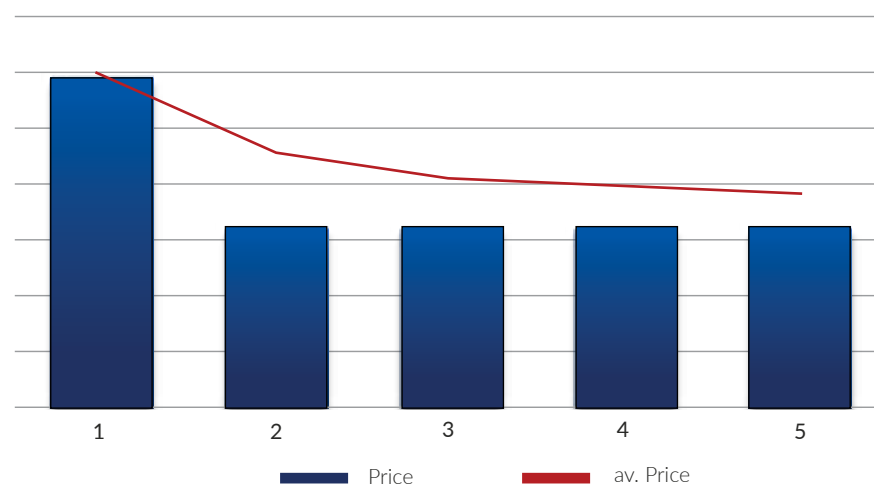
## Saving with every column and repacking

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

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