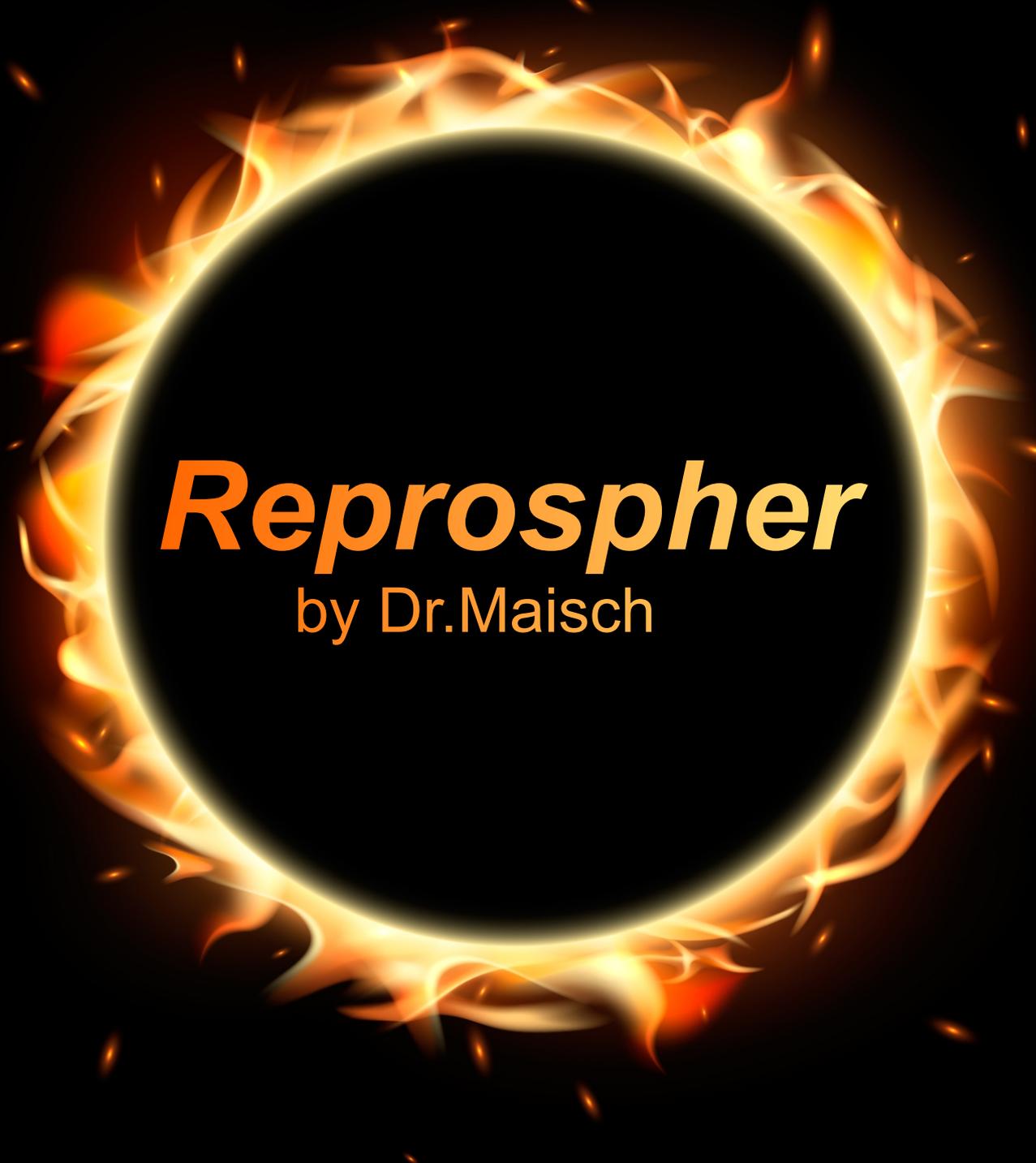


# Dr. Maisch GmbH

Any Column, Any Size, Any Media

**Reprospher**

Silica Based



***Reprospher***  
by Dr. Maisch

**Reprospher** <sup>TM</sup>  
HPLC Columns

- High stability and robustness
- Excellent resolution and recoveries
- Wide range of pore sizes
- Capillary column format to process scale

# Dr. Maisch HPLC Reprospher™ - Silica Based

## Reprospher Silica Based HPLC Columns

- Ultra high purity
- Base deactivated silica
- Fully scalable from 1.7µm to 15µm
- Capillary to Preparative Formats
- Unique selectivities (C18-Phenyl, C18-WCX, C18-TNE)
- SFC approved (NH<sub>2</sub>, Si, PFP, C18-WCX and PEI)

### Specification:

Pore Size:	100Å	200Å	300Å
Surface Area:	300m <sup>2</sup>	200m <sup>2</sup>	100m <sup>2</sup>

The Reprospher range of silica comes with a wide selection of particles sizes (1.7µm to 15µm), pore sizes and column dimensions. With some unique proprietary bonding chemistries, they provide a selection of orthogonal phases for your method development. Excellent column performance and reproducible chromatography with basic, acidic and neutral compounds ensure that there are no surprises during method validation.

## Your Workhorse

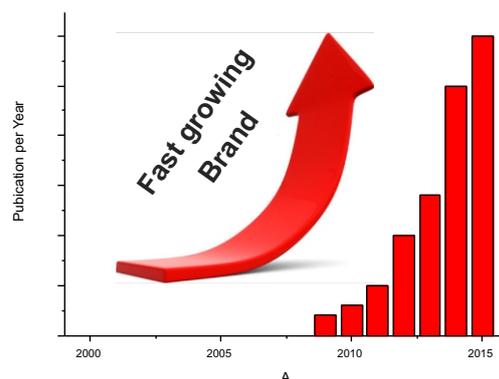


Reprosphere Specifications				Base Material: Spherical Silica	
Phase:	Modification:	Endcapping	Pore Size	Carbon Load	USP
<b>RP</b>					
C30-DE	Sterical recognition	double	100, 200	20%, 10%	
C18	Standard C18	yes	100, 200, 300	16%, 9%, 7%	
C18-DE	Low Silanol activity	double	100, 200, 300	16%, 10%, 7%	
C18-Aqua	100% Water suitable	polar	100, 300	12%, 4%	
C18-NE	Polar + C18	none	100	15%	
C18-TDE	Trifunctional + hydrophobic	double	100, 200	20%, 12%, 11%	
C18-TN	Trifunctional + polar	none	100, 200, 300	17%, 11%, 10%	
C18-Phenyl	Bimodal Separation mechanism	yes	100	N/A	
C18-WCX	C18 + carboxylic Side chain	none	100	N/A	
C12	Lower Retention to C18	yes	100	8%	
C8	Standard C8	yes	100, 200, 300	10%, 5%, 4%	
C8-DE	Low Silanol activity	double	100	10%	
C8-NE	Polar + C8	none	100, 300	10%	
C8-Aqua	100% Water suitable	polar	100	8%	
Phenyl	Phenyl-Butyl Spacer	yes	100, 200, 300	9%, 5%, 4%	
Phenyl-Hexyl	Phenyl-Hexyl Spacer	None & yes	100	13%	
Diphenyl	Phenyl-Si-Phenyl Modification	yes	100	N/A	
Biphenyl	Si-Phenyl-Phenyl Modification	yes	100	N/A	
Pentafluorophenyl	Pentafluorophenyl Modification	yes	100	N/A	
C6-TDE	Trifunctional Hexyl + hydrophobic	double	100	8%	
C4	Standard C4	yes	100, 300	6%, 2,5%	
C4-DE	Low Silanol activity	double	100, 300	7%, 3%	
C4-Aqua	100% Water suitable	polar	100, 300	6%, 3%	
<b>NP / HILIC &amp; SFC suitable</b>					
Si		none	100, 200, 300	N/A	
CN		none	100	7%	
Diol		none	100	7%	
2-EP	2-Ethylpyridin	none	100	N/A	
4-EP	4-Ethylpyridin	none	100	N/A	
NH <sub>2</sub>		none	100	4%	
NH <sub>2</sub> -DE	NH <sub>2</sub> + hydrophobic Character	double	100	4%	
PEI	Polyethylenimin	none	100, 300	N/A	
HILIC-ARG	HILIC with Argine groups	none	100	N/A	

## Reprospher History

The Reprospher range of silica was launched in 2003. The capacity has been successively enlarged over the last decades from a gram to a hundred kg scale. Reprospher raised to one of the Top Brands on the market.

! The **workhorse** which should not be missed in any laboratory !



## Batch to Batch reproducibility

The whole manufacturing process of ReprospHer Silica is based on ultra pure reagents. This leads to a very uniform particles shape and highly reproducible pore structures and surface characteristics.

The advanced bonding technology results in highly base deactivated phases that combine perfect pH stability and extraordinary batch to batch consistency.

Every new batch is extensively tested and it has to pass the very high Dr.Maisch HPLC standards.

Very narrow specifications guarantee a straight forward validation process on the customer side.

Every column has to pass all Parameters:

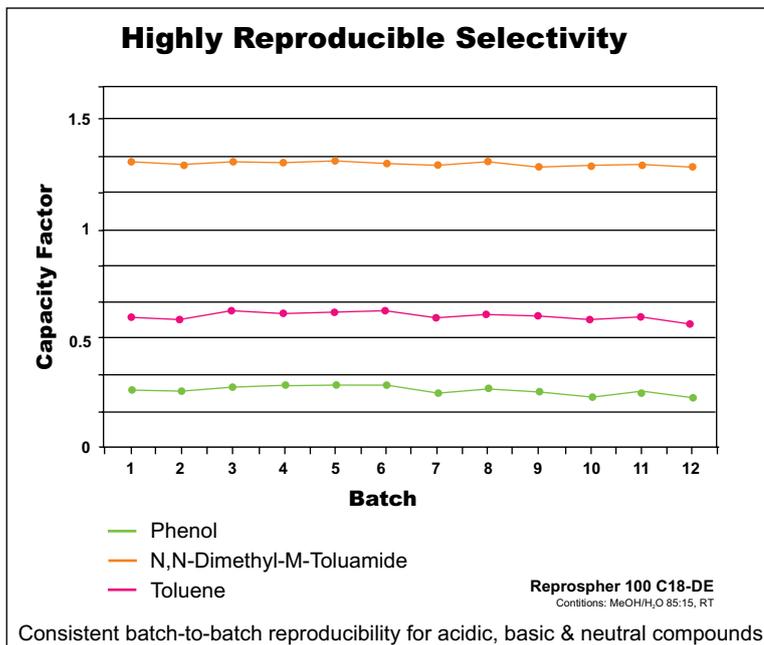
- Selectivity
- Surface activity for acidic, basic and neutral compounds
- Performance

The figure on the right demonstrate the very tight specs.

### Dr.Maisch quality:

Theoretical plates: > 75 000 plates (5µm)

Asym: 0.9-1.3



## Quality made in Germany

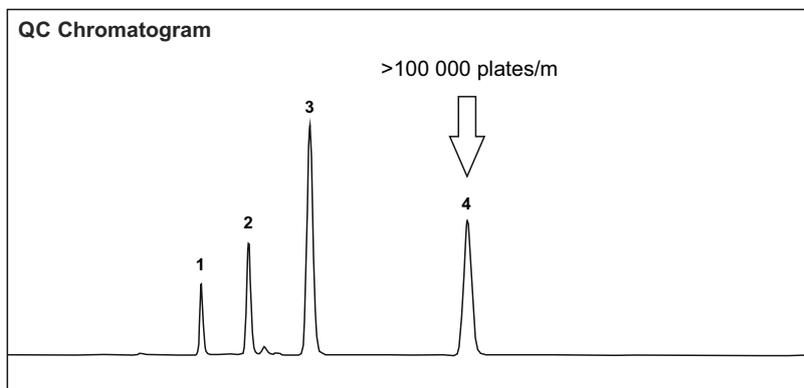
Compound	Asym	Plates/m
1. Uracil	1.1	94 000
2. Phenol	1.1	98 000
3. N,N-Diethyl-M-Toluamid	1.0	91 000
4. Toluene	1.0	105 000

Column: ReprospHer 100 C18-TDE, 5µm (150 x 4.6mm)  
(Part No. **rs15.9tde.s1546**)

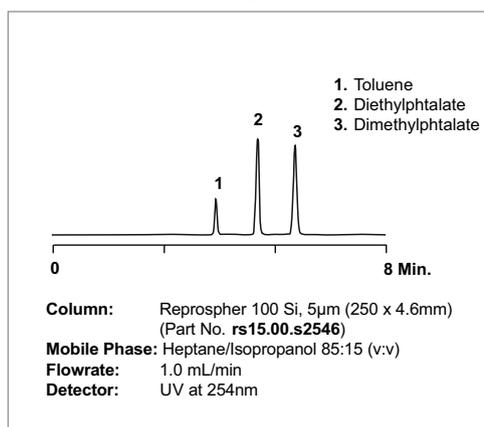
Mobile Phase: Heptane/Isopropanol 85:15 (v:v)

Flowrate: 1.0 mL/min

Detector: UV at 254nm

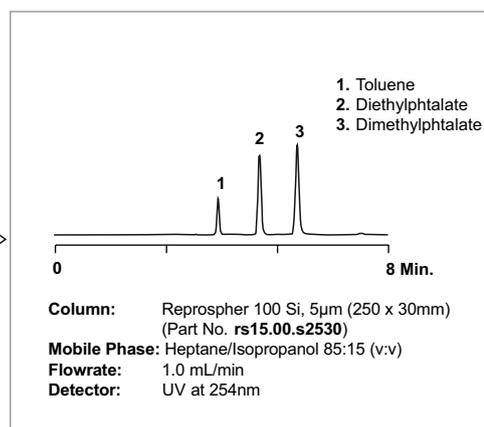


### Standard QC + Scalability



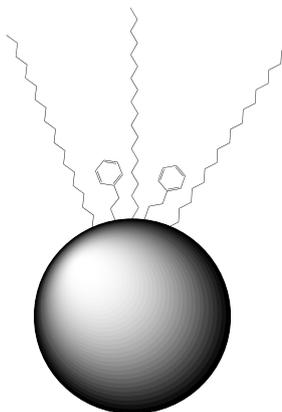
Same performance  
Analytical to Prep

Easy Upscaling



Unique Modifications

Reprospher C18-Phenyl



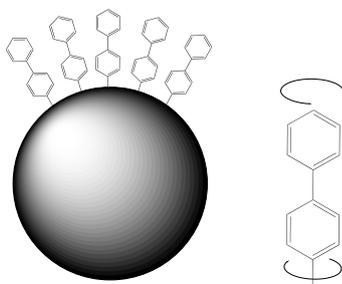
**Useful facts:**

- Bimodal separation mechanism
- alternative selectivity to C18
- compatible with highly aqueous conditions
- pH 1-8

Recommended application fields:

- standard RP
- for aromatic compound

Reprospher Biphenyl



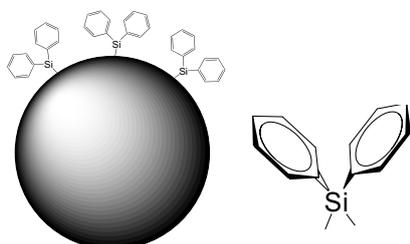
**Useful facts:**

- combination of hydrophobic, aromatic, and polar selectivity
- highly retentive to aromatic compounds
- compatible with highly aqueous conditions
- sterically active (linear rotation)
- pH 1-8

Recommended application fields:

- standard RP
- for Peptides & aromatic compounds

Reprospher Diphenyl



**Useful facts:**

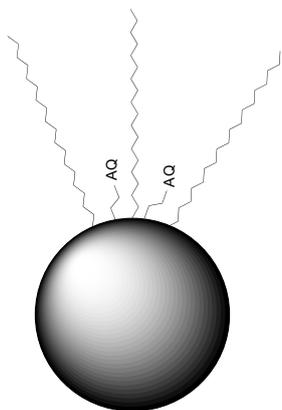
- combination of hydrophobic, aromatic, and polar selectivity
- highly retentive to aromatic compounds
- compatible for highly aqueous conditions
- sterically active (tub shape)
- pH 1-8

Recommended application fields:

- standard RP
- for Peptides & aromatic compounds

Unique Modifications

Reprospher C18-Aqua



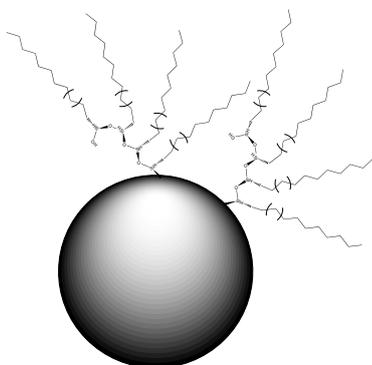
**Useful facts:**

- Special C18 Bonding technique.
- Endcapping with polar groups
- Suitable for 100% Water
- pH 1-8

Recommended application fields:

- standard RP
- SFC
- polar & hydrophilic compounds under highly aqueous conditions

Reprospher C18-T Type



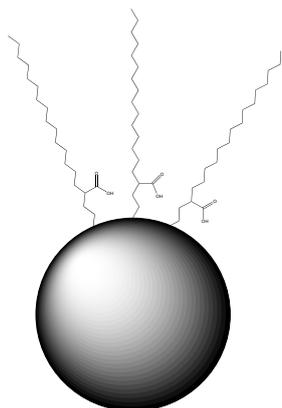
**Useful facts:**

- Polymeric C18 Modification
- high carbon load
- Endcapped or non endcapped available
- steric recognition
- pH 1-9

Recommended application fields:

- standard RP
- „high loading capacity“

Reprospher C18-WCX



**Useful facts:**

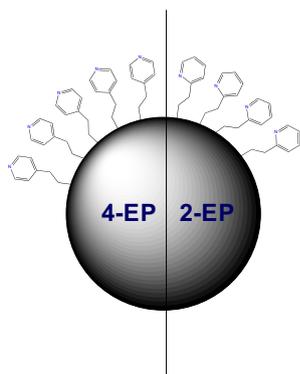
- acidic Shield technology
- Carboxylic side chains directly connected to the alkyl spacer
- Not endcapped
- mixed mode (RP + weak cation exchanger)
- pH 2.5 - 7.5

Recommended application fields:

- RP
- SFC (for acidic and basic compounds)

Unique Modifications for SFC

Reprospher 2-EP and 4-EP



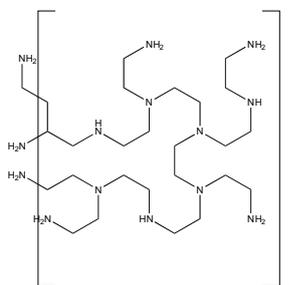
**Useful facts:**

- ideal for strongly basic analytes
- hydrophilic selector
- no amines needed as additives
- Designed for achiral SFC separations

Recommended application fields:

- RP
- SFC

Reprospher PEI



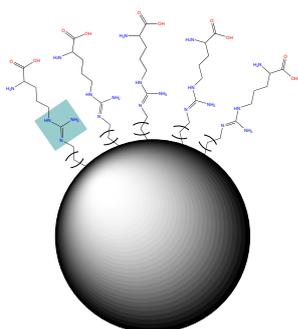
**Useful facts:**

- fully coated Silica + crosslinked
- for highly basic analytes
- universal SFC Phase

Recommended application fields:

- NP
- HILIC
- SFC
- WAX for peptides & oligonucleotides

Reprospher ARG



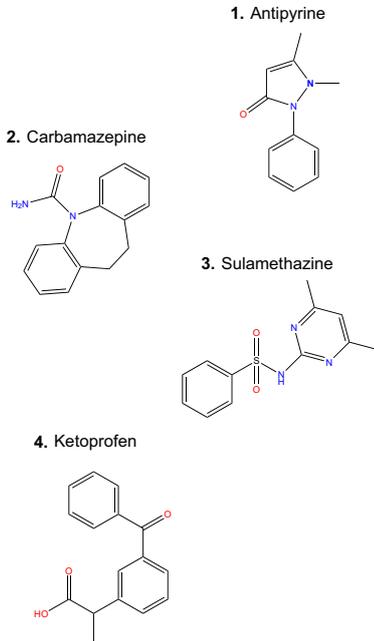
**Useful facts:**

- Arginine covalently bonded
- highly hydrophilic
- for polar compound
- Shield technology
- Zwitter-ionic

Recommended application fields:

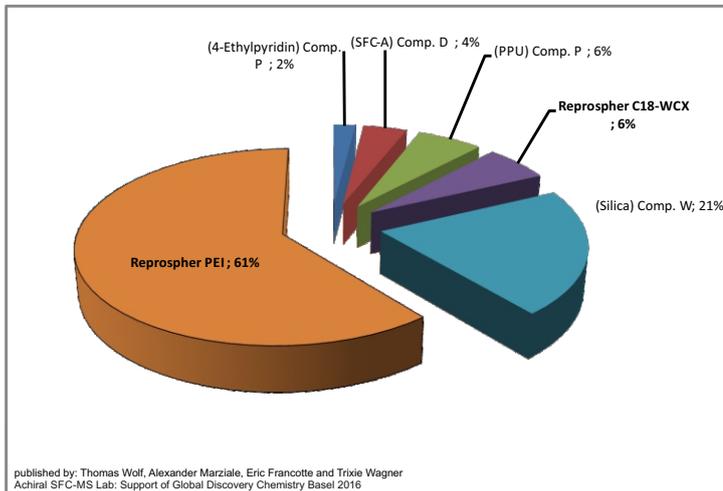
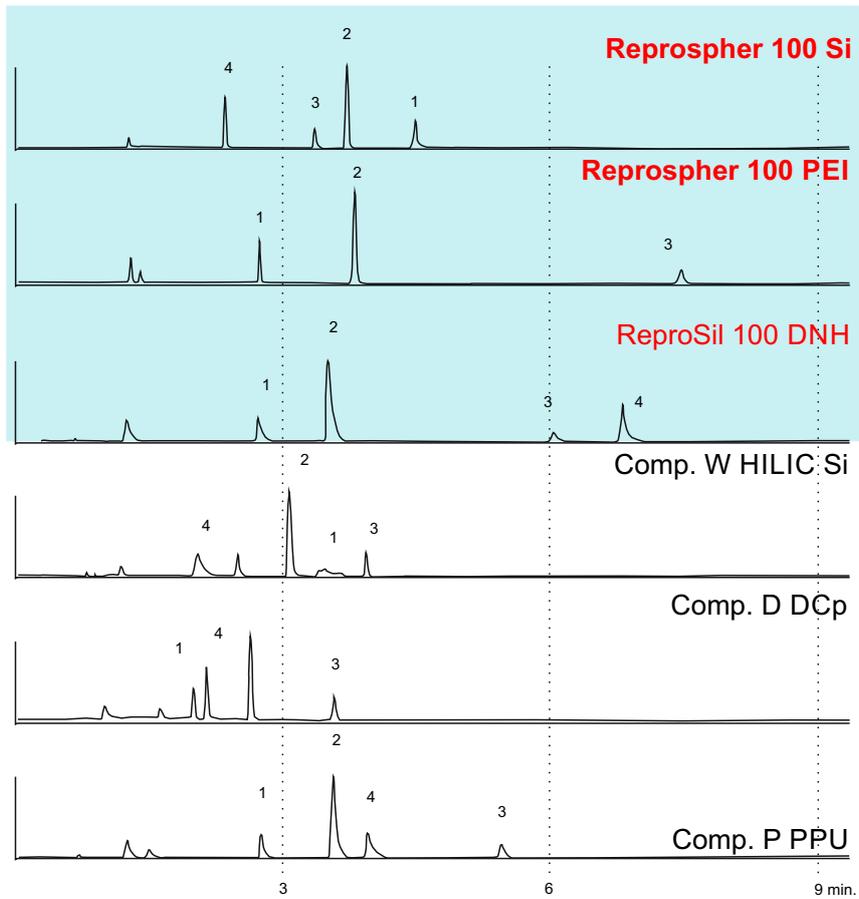
- NP
- HILIC
- SFC

## Tuning the separation selectivity by using different modifications



Mobile Phase: CO<sub>2</sub> + MeOH (5-50% in 6 min)  
 Flowrate: 1.0 mL/min  
 Detector: UV at 254nm  
 Dimension: 250 x 4.6 mm

published by: Eric Francotte (Novartis)  
 8th International Conference on packed column SFC, Oct 2014, Basel



**„Reprospher PEI: One of the most versatile phases for achiral SFC“**

life science

The information presented herein is derived from our testing and experience. It is offered free of charge for your consideration, investigation and verification. Since operating conditions vary significantly, and since they are not under our control, we disclaim any and all warranties on the results which might be obtained from the use of our products. You should make no assumption that all safety or environmental protection measures are indicated or that other measures may not be required. This product(s) may be covered by patents or patents pending. Dr.Maisch HPLC GmbH reserves the right to change prices and/or specifications without prior notification. Pictures licensed by Shutterstock.com. Printed in Germany.

# Dr. Maisch GmbH

Any Column, Any Size, Any Media

Beim Brückle 14  
 72119 Ammerbuch  
 Germany  
 Fon: 0049 7073 50357  
 Fax: 0049 7073 4216  
 E-mail: info@reprosil.com  
 web: www.reprosil.com

Dealer:

**BIOSZEPARÁCIÓ KFT.**  
 info@bioszeparacio.hu