

Dr. Maisch
Any Column, Any Size, Any Media



ReproSil pHoenix
Extreme pH-stable

MADE BY DR. MAISCH

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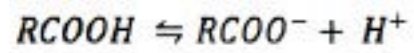
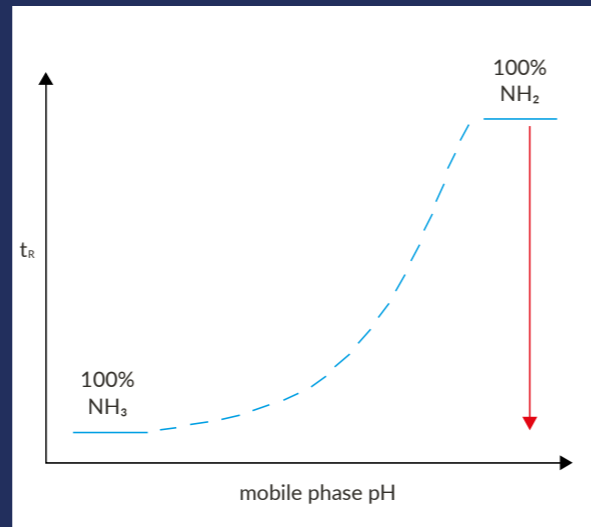
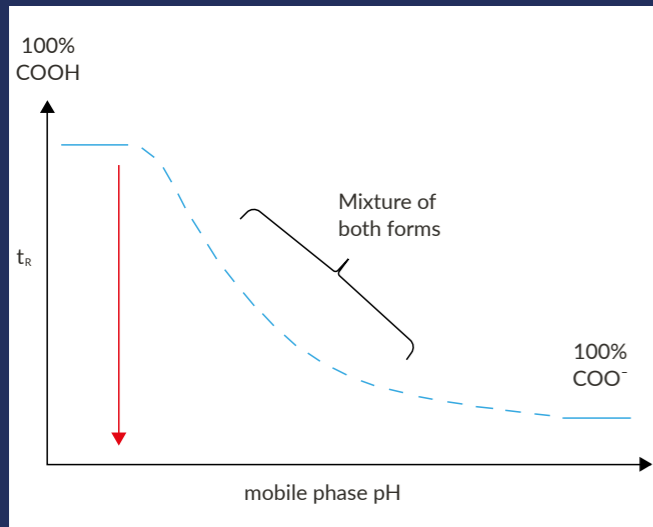


ReproSil pHoenix
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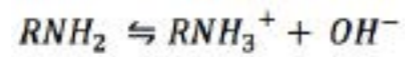
From one of the biggest **High-Performance Liquid Chromatography (HPLC)** - Column Manufacturers in Europe.

WHY IS THERE A NEED TO DO CHROMATOGRAPHY AT EXTREME pH?

EFFECT OF EXTREME pH ON SILICA BASED MEDIA



Acids are best retained with optimal peak shape at low pH



Bases are best retained with optimal peak shape at high pH

High pH:

Hydrolysis of silica gel backbone

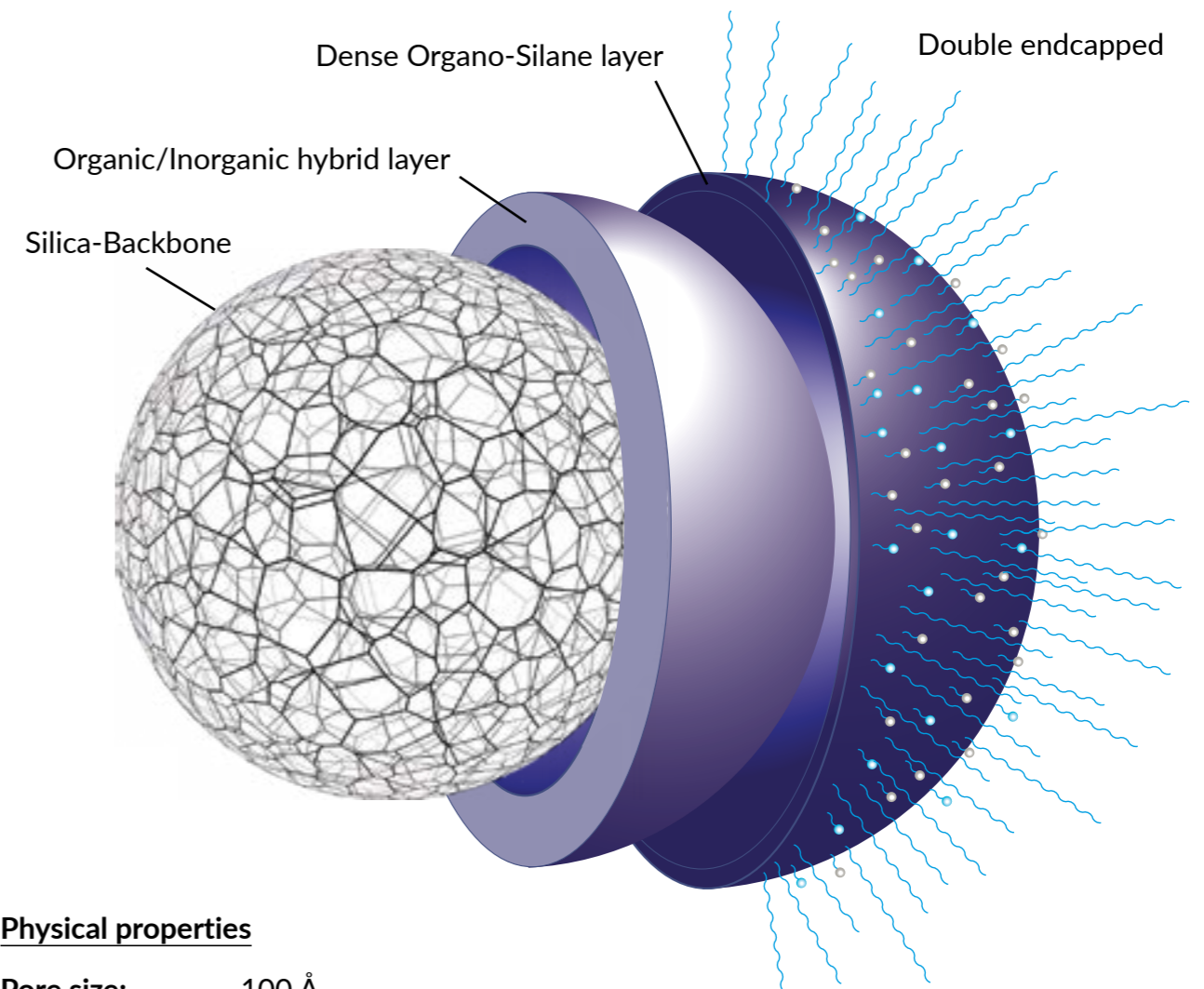
- Severe peak distortion
- loss of efficiency

Low pH:

Hydrolysis of bonded phase and endcapping

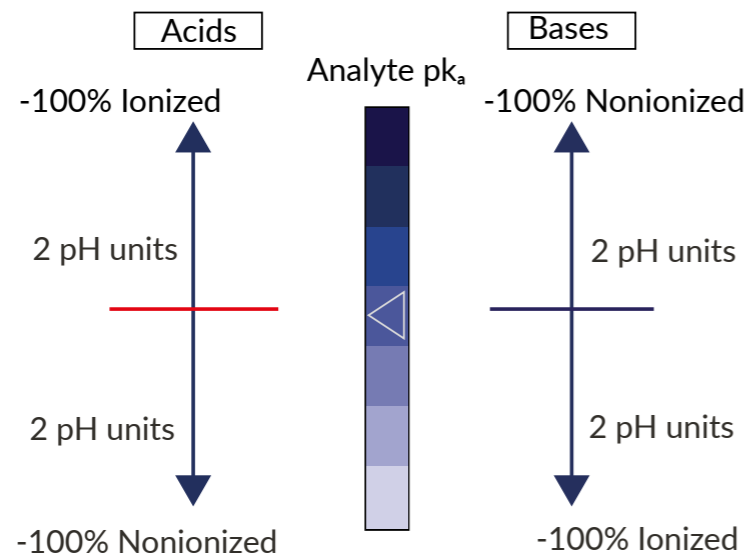
- Loss of retention time
- Peak tailing for basic compounds

INCREASING pH STABILITY
NEW HYBRID DOUBLE SHIELDED SILICA



Physical properties

Pore size:	100 Å
Particle size:	1.9 μm, 3 μm, 5 μm, 7 μm, 10 μm
Surface area:	470 m ² /g
Modification:	C18
Carbon content:	22%
Endcapping:	yes



LONG TERM pH STABILITY

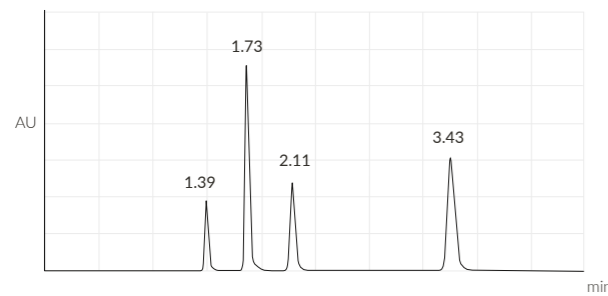
LONG TERM pH STABILITY

Purging conditions:
NaOH(aq) pH 12

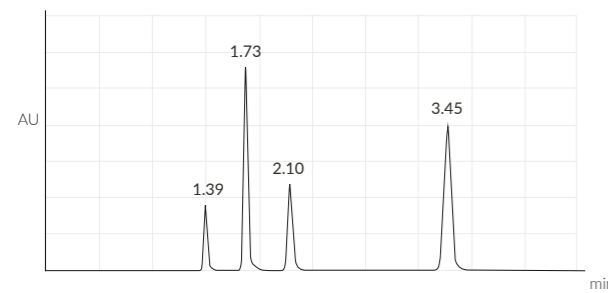
Test conditions:

Mobile phase: MeOH/H₂O 85/15
Flow rate: 1 ml/min
Detector: UV @ 254 nm

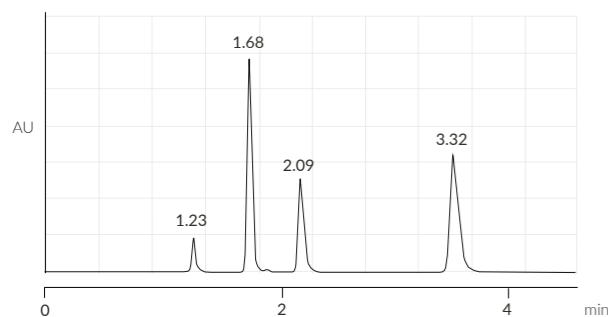
Name:	Conc. mg / mL
1 Uracil	0.015
2 Phenol	0.700
3 N,N-Diethyl-M-Toluamide	0.600
4 Toluene	4.000



0 hours

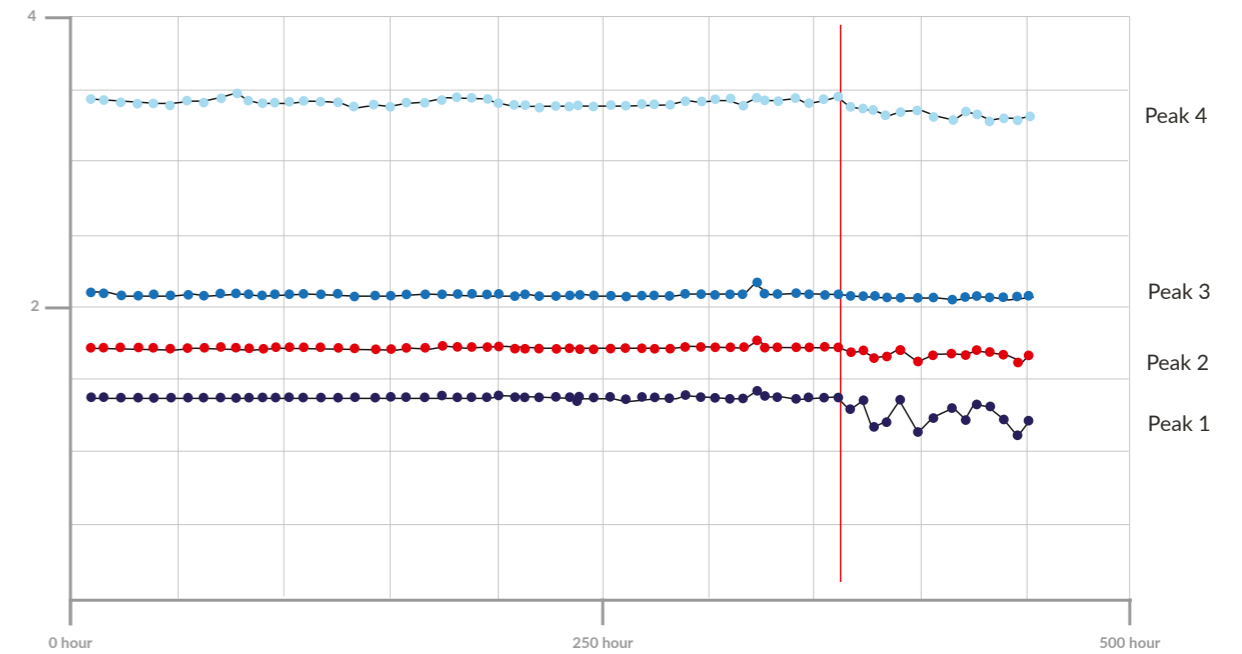


210 hours

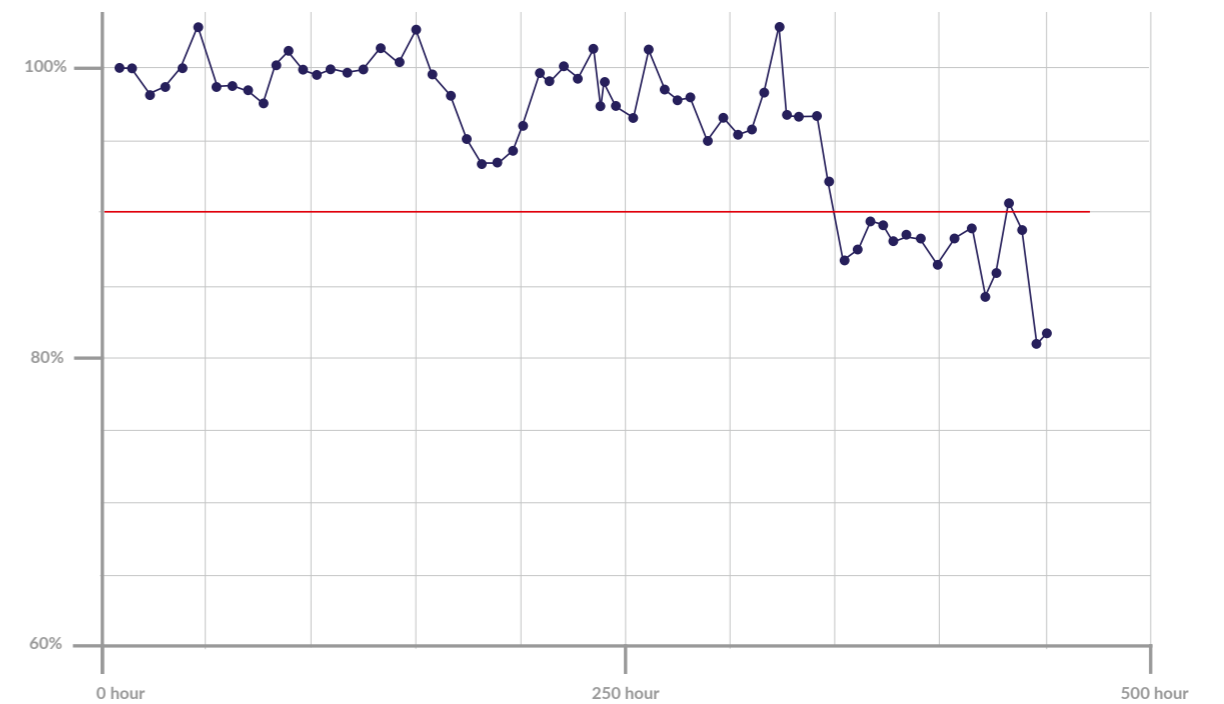


400 hours

Peak retention vs. purging time with NaOH(aq) pH 12



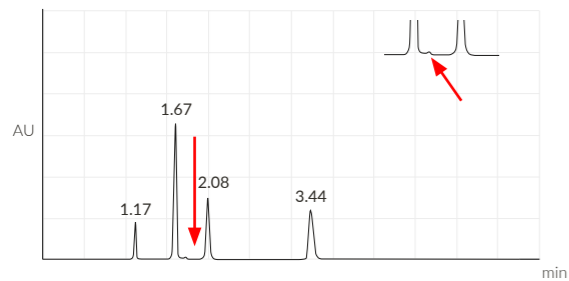
Th. plates (Peak 4) % vs. purging time



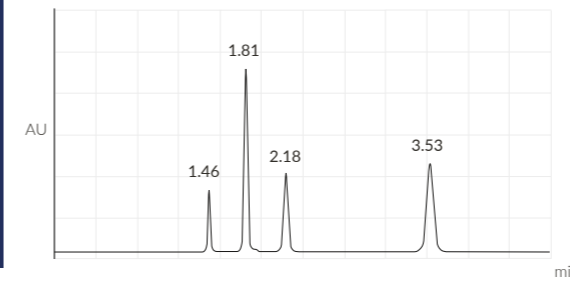
Resolution of „impurity“ on ReproSil pHoenix

Mobile phase: MeOH/NH₃-resolution (pH 12) 85/15
 Flow rate: 1 ml/min
 Detector: UV @ 254 nm

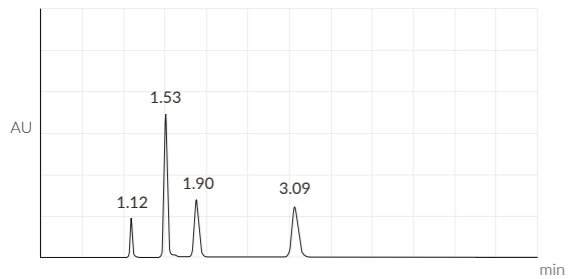
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3 N,N-Diethyl-M-Toluamide	0.600
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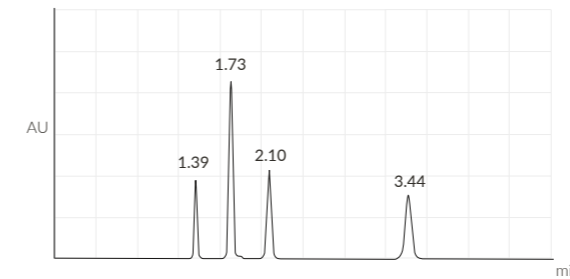
ReproSil pHoenix



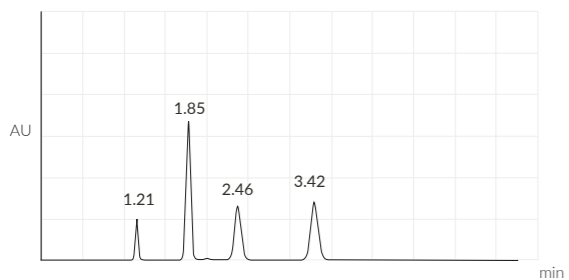
ReproSil pHoenix, pH 7



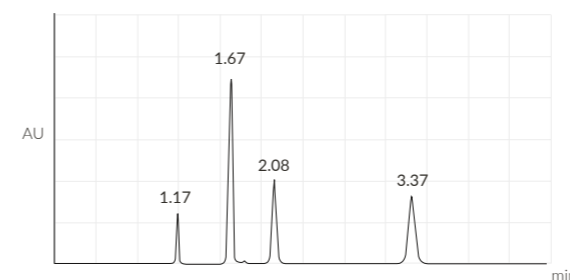
Kromasil Eternity



ReproSil pHoenix, pH 3



YMC Triart

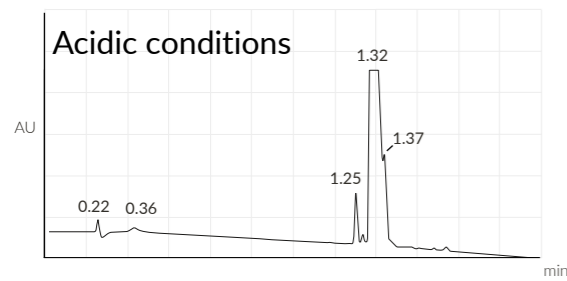


ReproSil pHoenix, pH 12

SELECTIVITY AND PEAK SHAPE UNDER BASIC AND ACIDIC ELUENT CONDITIONS

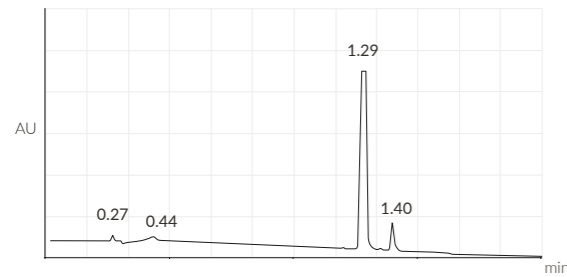
Data courtesy of Nuvisan ICB GmbH

Observe superior selectivity / resolution of ReproSil pHoenix vs. Waters Acquity



Waters Acquity

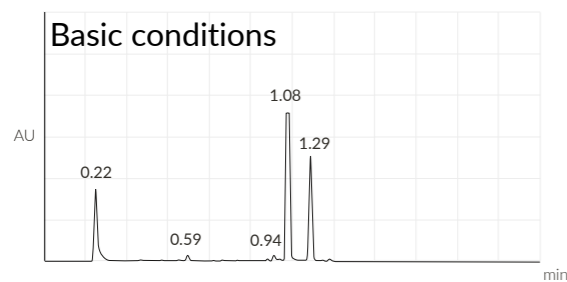
Column: Acquity UPLC BEH C18 1.7 μ m, 50x2.1mm;
Eluent A: water + 0.1 vol% formic acid;
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.6-2.0 min 99 % B



ReproSil pHoenix

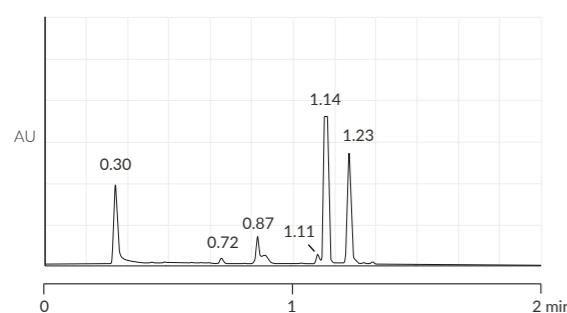
Column: ReproSil pHoenix C18 3 μ m, 75 x 2.1 mm;
Eluent A: water + 0.1 vol% formic acid;
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.4-2.0 min 99 % B

Observe superior peak shape of ReproSil pHoenix vs. Waters Acquity



Waters Acquity

Column: Acquity UPLC BEH C18 1.7 μ m, 50x2.1mm;
Eluent A: water + 0.2 vol% aqueous ammonia (32%);
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.6-2.0 min 99 % B

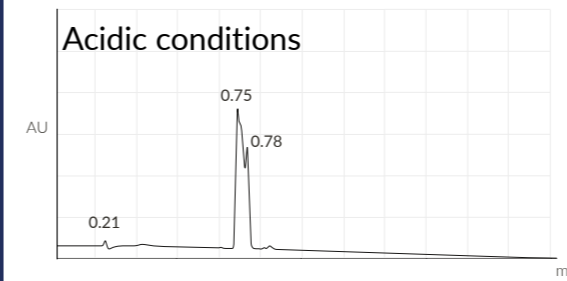


ReproSil pHoenix

Column: ReproSil pHoenix C18 3 μ m, 75 x 2.1 mm;
Eluent A: water + 0.2 vol% aqueous ammonia (32%);
Eluent B: acetonitrile;
Gradient: 0-1.4 min 1-99 % B, 1.4-2.0 min 99 % B

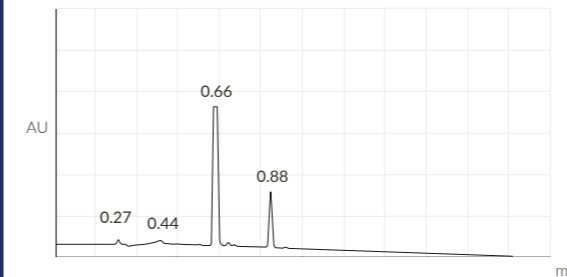
SELECTIVITY AND PEAK SHAPE UNDER BASIC AND ACIDIC ELUENT CONDITIONS

Observe superior selectivity / resolution and peak shape of ReproSil pHoenix vs. Waters Acquity



Waters Acquity

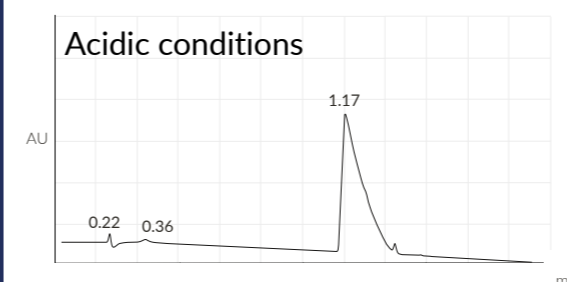
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ReproSil pHoenix

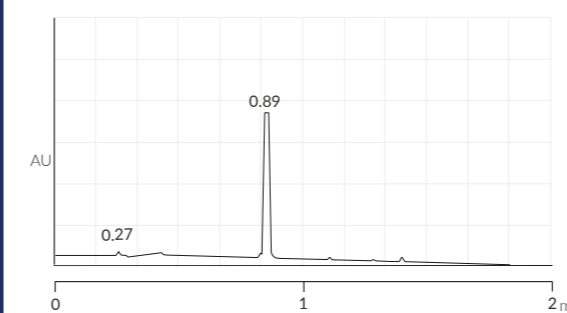
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ReproSil pHoenix

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