



interchim®

Analyse (U)HPLC : les phases stationnaires C18AQ

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(U)HPLC, prep-LC & Flash columns

Uptisphere® CS Evolution

Core Shell columns for fast & highly efficient identification & quantification of **small molecules**.

Uptisphere® 120Å

HPLC & prep LC columns for the identification, quantification & purification of **small molecules & pharma compounds**.

Uptisphere® Strategy™

(U)HPLC, Analytical & prep LC columns with **high loadability** for identification, quantification & purification of **small molecules & pharma compounds**.

Uptisphere® X-serie™

HPLC & prep LC columns for the identification, quantification & purification of **small molecules & bio-drugs at high & low pH**.

Uptisphere® 300Å

HPLC & prep LC columns for identification, quantification & purification of **Proteins, Peptides & Polypeptides**.

puriFlash® Prep

prep LC columns for sophisticated purification of **small & bio-molecules & pharma compounds**.

puriFlash®

Flash columns for routine purification of **small & bio-molecules & pharma compounds**.



Analyse en (U)HPLC



Petites molécules

Oligonucléotides, Peptides
& Polypeptides

70% C18
30% Hilic, C8, C4,
Ph/Hex, PFP, ...

50% C18
35% C8, C4
15% Hilic

Purification

Petites molécules

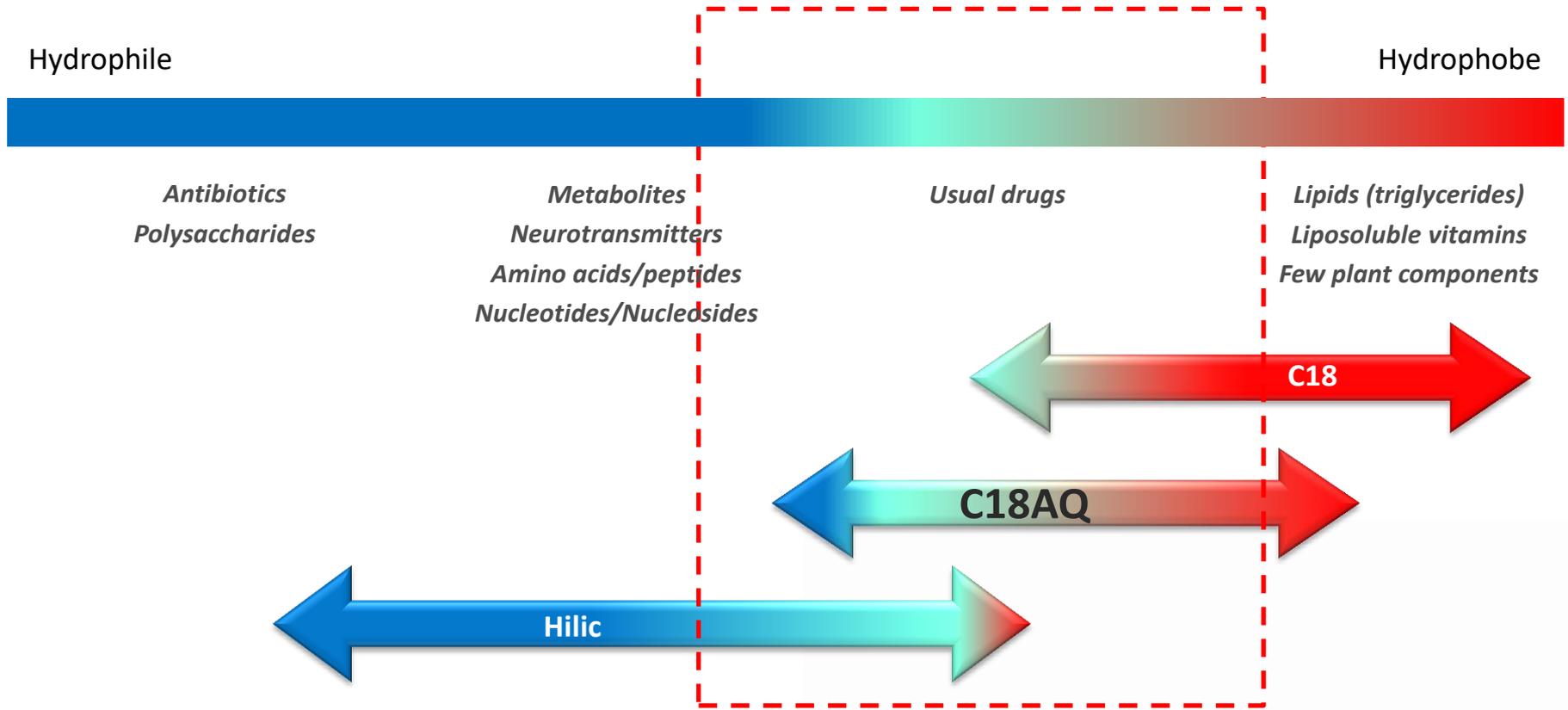
Oligonucléotides,
Peptides & Polypeptides

25% phase Inverse
75% phase Normale

80% phase Inverse
20% phase Normale/Hilic



Polyvalence des phases stationnaires C18AQ



Using polar or hydrophilic endcapping along with bonding of longer alkyl chains such as C18 is a successful development approach for stationary phases that can retain polar analytes reproducibly under highly aqueous conditions.

For solubility reasons, many polar compounds prefer a highly aqueous mobile phase and can be retained only with a minimal concentration of organic modifier, sometimes less than 5%....

... we demonstrated and discussed the phenomenon of phase collapse and mentioned approaches to solve the problem and successfully separate polar analytes using mobile-phase systems with a very high percentage of water, even as great as 100% water to separate polar compounds in highly aqueous environments.

LCGC Europe dec 2002 ; Columns for Reversed-Phase LC Separations in Highly Aqueous Mobile Phases

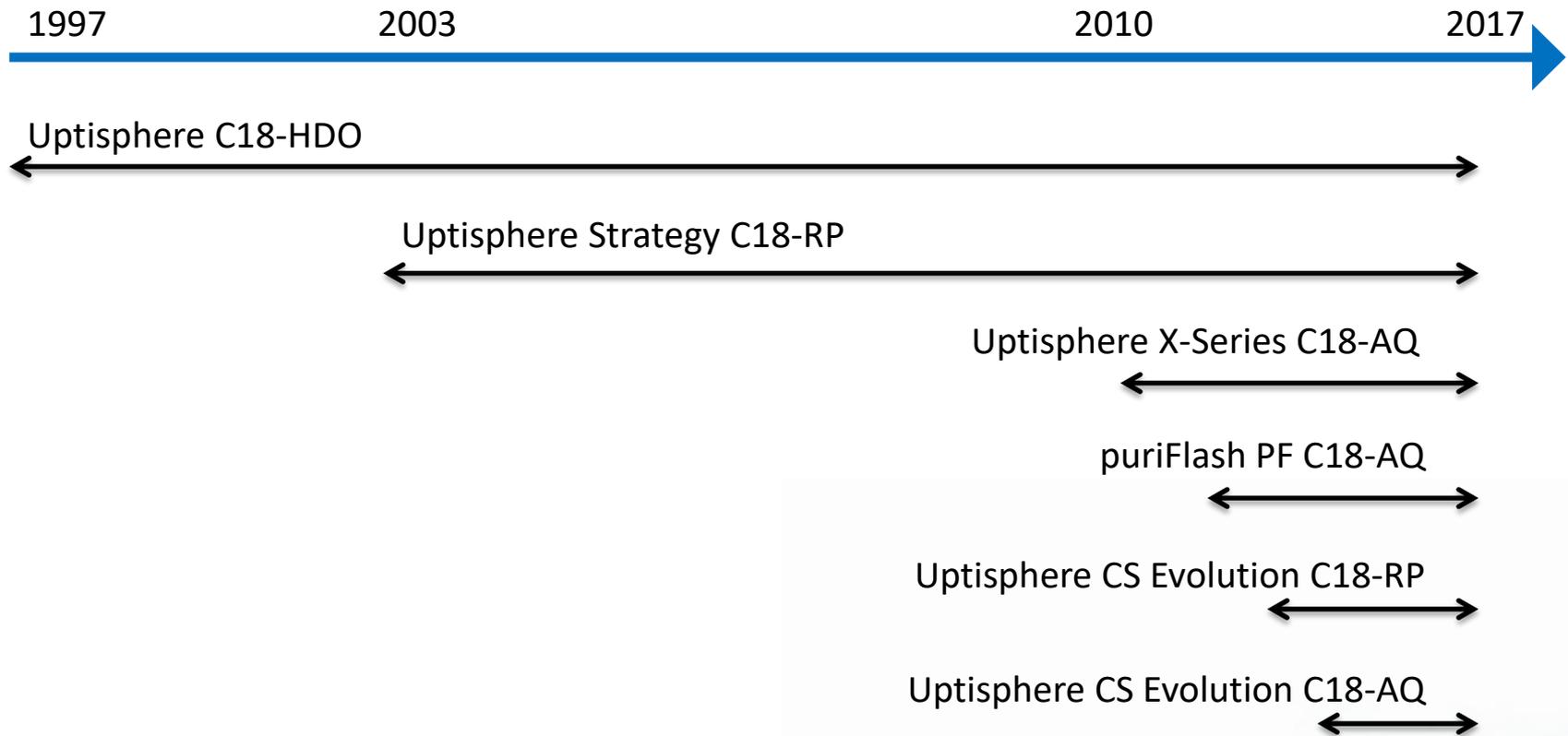
Ronald E. Majors, Agilent Technologies, Wilmington, Delaware, USA, and Matthew Przybyciel, ES Industries, West Berlin, New Jersey, USA

Avantages de phases stationnaires C18AQ

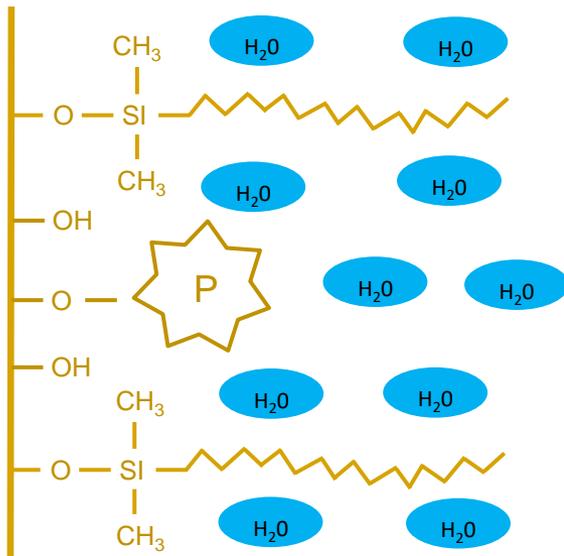
- ✓ Elles sont stables en 100% H₂O
- ✓ Rétentives et Sélectives pour les composés polaires qui représentent l'essentiel des molécules à analyser et purifier aujourd'hui
- ✓ Elles ont une bonne symétrie de pic avec les composés basiques
- ✓ Elles sont disponibles de l'analytique à la purification, des Core-Shell au Préparatif => Interchim, une offre unique sur le marché !



Historique & Evolution des technologies Interchim C18 AQ

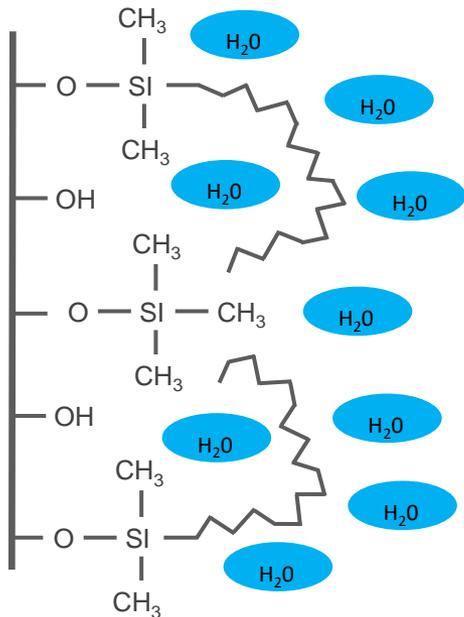


Interchim C18-AQ : stable sous 100% H2O



Phases Interchim C18-AQ

=> Parfaitement utilisable avec les phases mobiles 100% aqueuses
Répétabilité des temps d'analyses avec les phases mobiles 100% H₂O



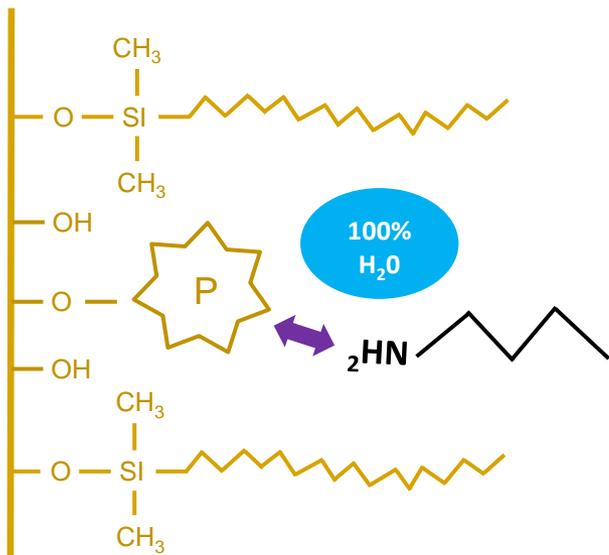
Silice C18

=> La greffe C18 se condense vers la surface de la silice dans des conditions >95% H₂O

=> Pas ou pertes de rétention & séparation

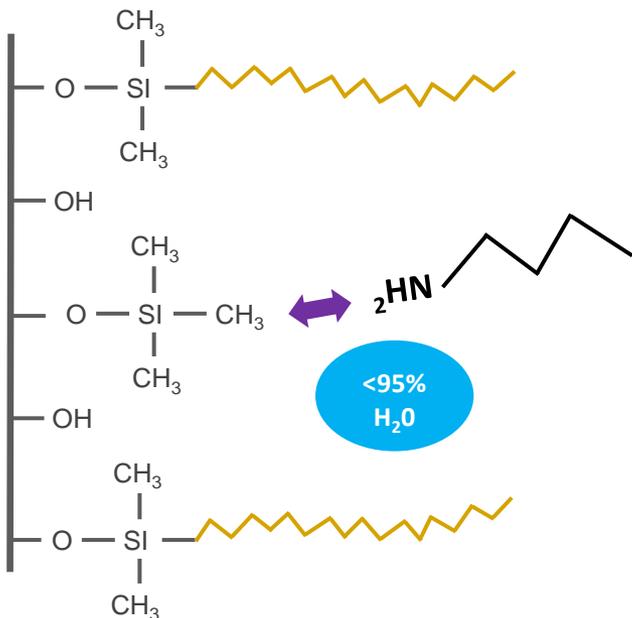


Interchim C18-AQ : rétentive avec les composés polaires



Phases Interchim C18-AQ

=> Meilleure rétention des composés polaires



Silice C18 classique

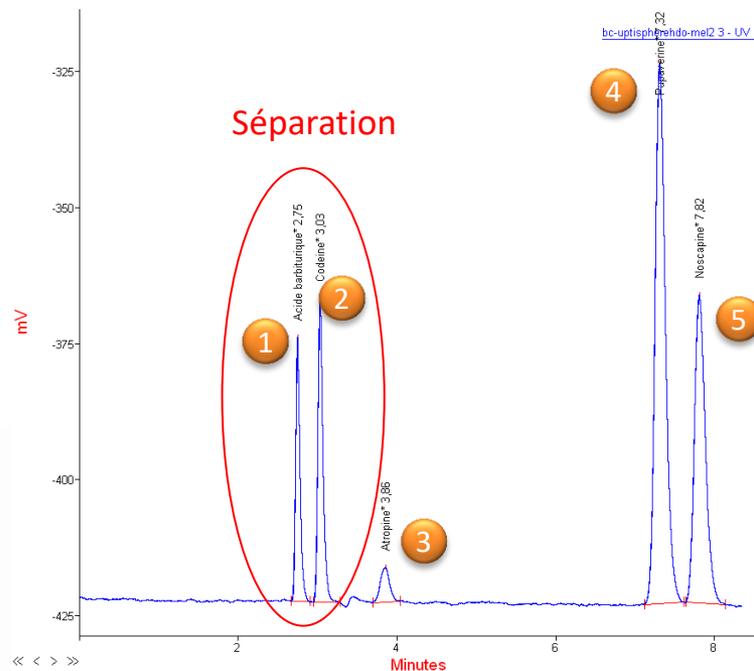
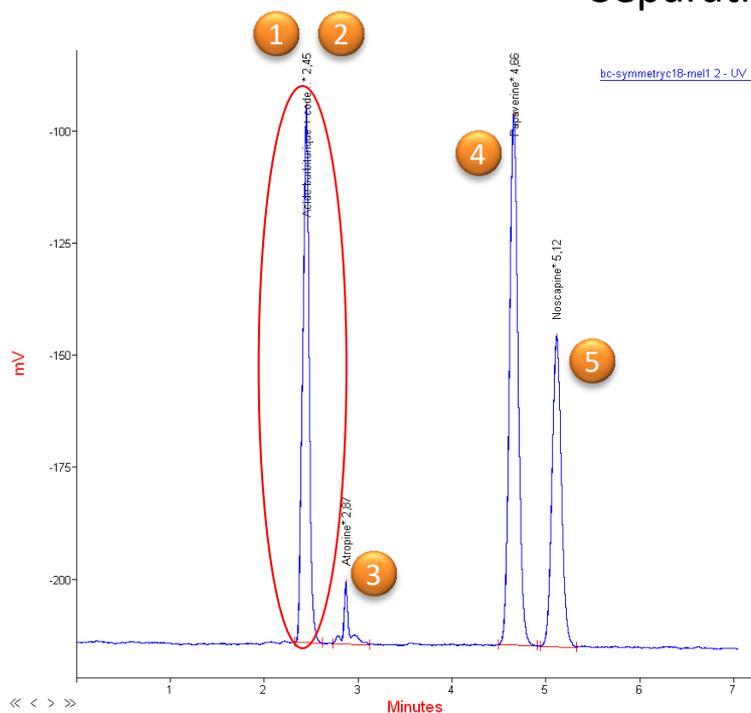
=> Rétention plus faible des composés polaires



Interchim C18-AQ : sélective avec les composés polaires

Coélution

Séparation de « Drugs » acides



W..... S..... C18 5µm 250 x 4.6mm

Uptisphere C18-HDO 5µm 250 x 4.6mm

1) Acide barbiturique, 2) Atropine, 3) Codéine, 4) Pavaverine, 5) Noscapine
30/70 ACN-buffer pH: 2.3 @ 1 ml/min – 30°T, UV: 220 nm

Interchim C18-AQ : sélective avec les composés polaires basiques

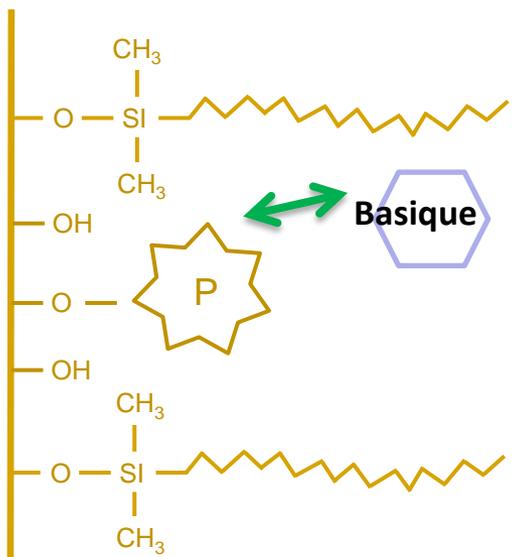
	α 2,6 diMPyridine/Pyridine	
CS Evolution 2.6 μ m C18-AQ	1,18	😊
CS Evolution 2.6 μ m C18-RP	1,12	😊
AMT Halo 2.7 μ m C18	1,00	😞
Uptisphere 3 μ m C18-HDO	1,08	😊
Uptisphere 5 μ m C18-HDO	1,09	😊
Uptisphere Strategy 3 μ m C18-RP	1,06	😊
Y.. 3 μ m ODS-AQ	1,05	😊
PuriFlash 5 μ m C18AQ 70A	1,43	😊

Test Conditions

Mobile Phase : Acetonitrile/Buffer pH=5.5 - (20/80)
Flow Rate (mL/min) : 1.0



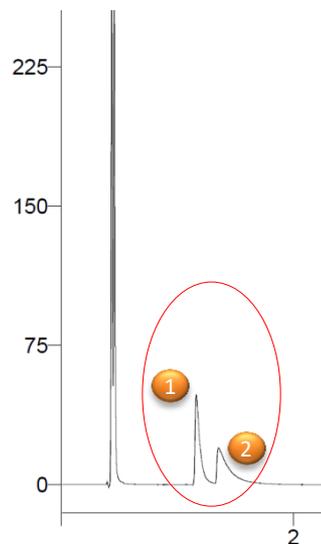
Interchim C18-AQ : bonne symétrie de pics avec les composés basiques



Interchim C18-AQ

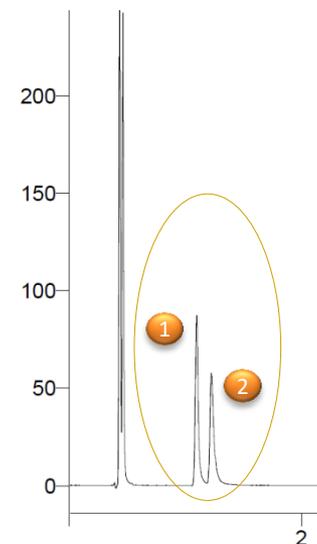
=> Faible activité des silanols de surface

=> Bonne forme de pic pour les composés basiques & chélatants



Core Shell Competitor
2.7µm 50x4.6mm

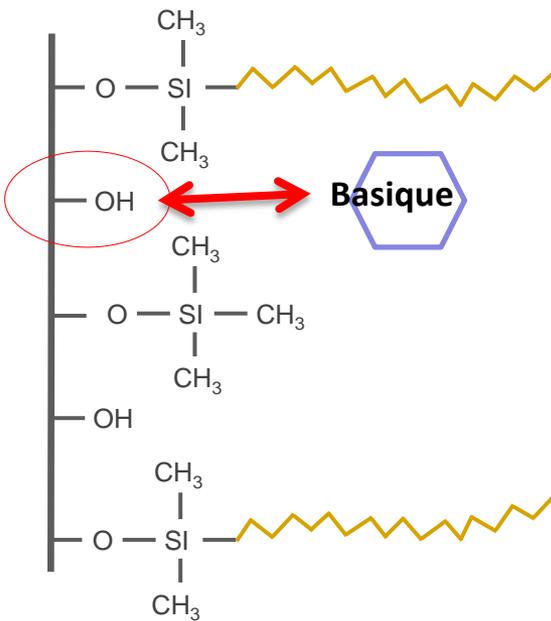
=>



Uptisphere CS Evolution C18-AQ
2.6µm 50x4.6mm

1) Pyridine, 2) 2,6 Dimethylpyridine

Mobile phase 20/80 ACN-buffer pH: 5.7 @ 1 ml/min – UV: 254nm



Interchim C18-AQ : Hydrophobicité équivalente aux C18 classiques

Uptisphere CS Evolution 2.6µm C18-HB

Greffage très hydrophobe



Uptisphere CS Evolution 2.6µm C18-AQ

Greffage hydrophyle/hydrophobe

UE2.6C18HB	tr	k _{retention factor}	α _{Toluene/Fluorene}
Uracil t ₀	0,26		
Toluene	0,69	1,65	
Fluorene	1,19	3,58	2,16

UE2.6C18AQ	tr	k _{retention factor}	α _{Toluene/Fluorene}
Uracil t ₀	0,26		
Toluene	0,61	1,35	
Fluorene	0,97	2,73	2,03

Test Conditions

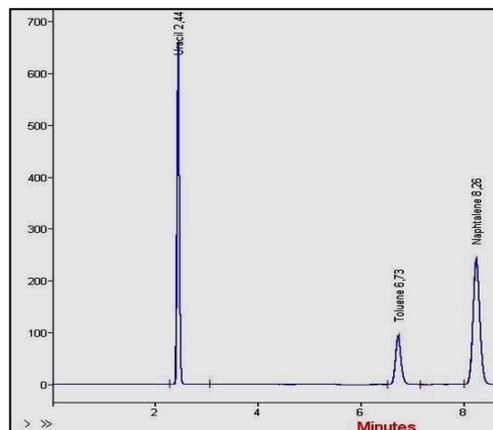
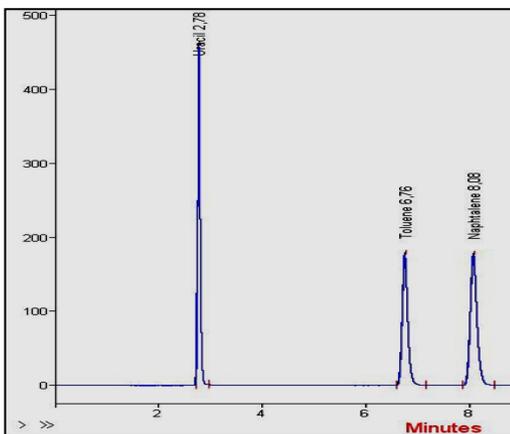
Mobile Phase : Acetonitrile/Water-(70/30)
 Flow Rate (mL/min) : 1.5
 Pressure (bars) : 74
 Temperature (°C) : 22
 UV (nm) : 254
 Sample Volume (µL) : 5

K..... C18

Greffage hydrophobe

Uptisphere C18-HDO

Greffage hydrophyle/hydrophobe



Uracile, Toluene, Naphtalène, MeOH/H2O 80/20 1ml/min, UV : 254nm

CS Evolution 2.6µm C18-AQ

CS Evolution 2.6µm C18-RP

Uptisphere 2.2µm C18-HDO



UHPLC > 650 bars

CS Evolution 2.6µm C18-AQ

CS Evolution 2.6µm C18-RP

Uptisphere 2.2µm C18-HDO



HPLC > 400 bars

PuriFlash 5µm C18-AQ

Uptisphere 3 & 5µm C18-HDO

Uptisphere Strategy 3 & 5µm C18-RP

Uptisphere X-Series 3 & 5µm C18-AQ



HPLC < 400 bars

PuriFlash 5-10-15µm C18-AQ

Uptisphere Strategy 5-10-15µm C18-RP



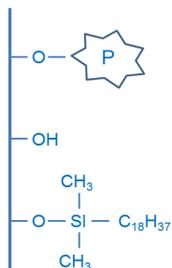
Prep LC



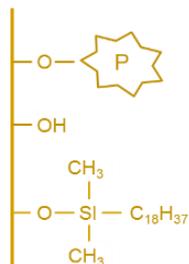
Disponibilité des phases stationnaires C18 AQ Interchim

	UHPLC	HPLC	Prep LC	Flash
Uptisphere C18-HDO	☺	☺		
Uptisphere Strategy C18-RP	☺	☺	☺	
Uptisphere X-Series C18-AQ		☺	☺	
puriFlash PF C18-AQ		☺	☺	☺
Uptisphere CS Evolution C18-RP	☺	☺		
Uptisphere CS Evolution C18-AQ	☺	☺		

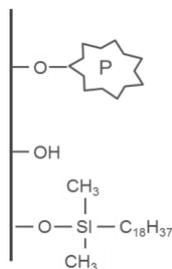
Uptisphere C18-HDO



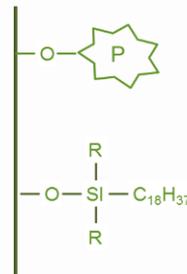
CS Evolution C18-AQ



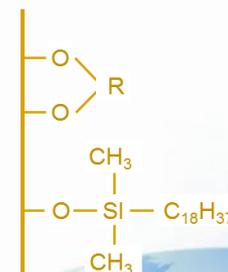
puriFlash PF C18-AQ



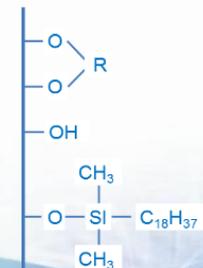
X-Series C18-AQ



CS Evolution C18-RP



Strategy C18-RP



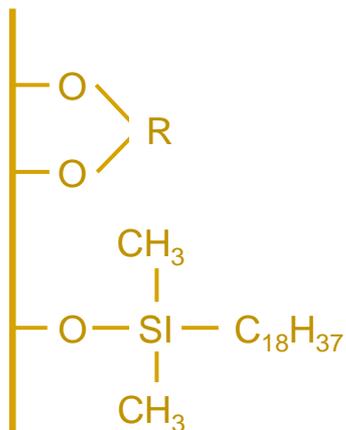
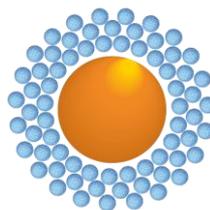
C18-RP

Selectivity

Uptisphere® CS Evolution™

Capacity

Productivity



Uptisphere® CS Evolution™ C18-RP

85Å - 130m²/g

2.6 µm

Bonding: C18 monofonctionnal

%C: 6,0

End-capping: multi step mixte

pH stability: 1.5 to 8.0

Suitable for mid & non polar compounds separation. RP shows excellent mechanical stability that provides long-life & make it an excellent tool for analysis under acidic or basic conditions.

USP code: L1

Application:

mid-polar organic compounds

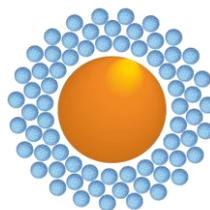
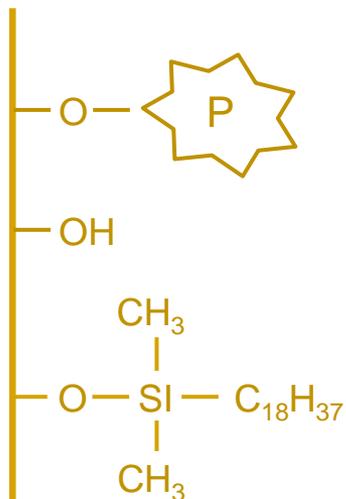
C18-AQ

Selectivity

Uptisphere® CS Evolution™

Capacity

Productivity



Uptisphere® CS Evolution™ C18-AQ

85Å - 130m²/g

2.6 μm

Bonding: C18 monofonctionnal

%C: 6.5%

End-capping: Mixte

pH stability: 1.5 to 7.0

*Suitable for mid & non polar compounds separation.
RP shows excellent mechanical stability under 100%
aqueous mobile phase conditions.*

USP code: L1

Application:

mid-polar organic compounds

100% water compatible

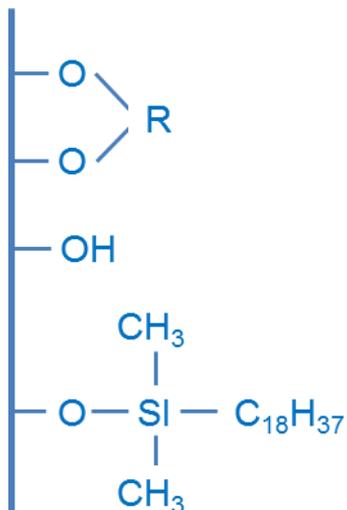
C18-RP

Selectivity

Uptisphere® Strategy™

Capacity

Productivity



Strategy™ C18-RP

100Å - 425m²/g

2.2, 3, 5, 10 & 15 μm

Bonding: C18 monofonctionnal

%C: 16

End-capping: multi step mixte

pH stability: 1.5 to 8.0

Suitable for mid & non polar compounds separation. RP shows excellent mechanical stability that make it an excellent tool for purification under acidic or basic conditions.

USP code: L1

Application:

mid-polar organic compounds

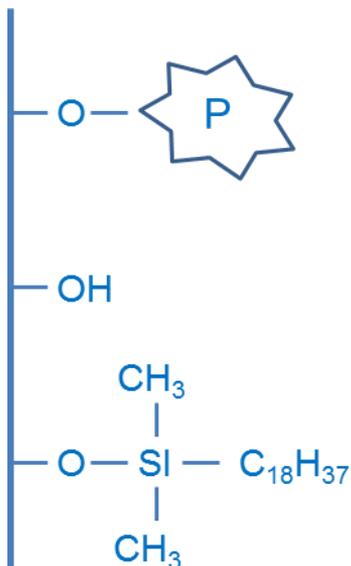
C18-HDO

Selectivity

Uptisphere® 120Å

Capacity

Productivity



Uptisphere® C18-HDO

120Å - 320m²/g

2.2, 3, 5µm

Bonding: C18 monofonctionnal

%C: 17

End-capping: Mixte

pH stability: 1.5 to 7.0

Suitable for mid & non polar compound separation. Shows excellent stability under 100% aqueous mobile phase condition.

USP code: L1

Application:

mid-polar organic compounds

100% water compatible

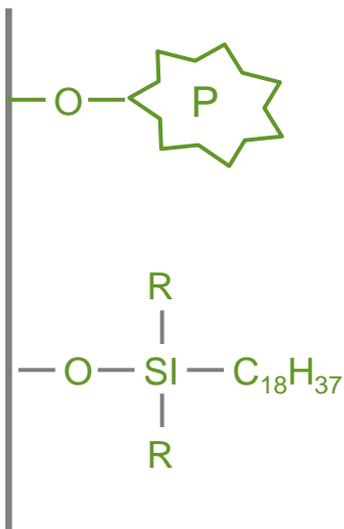
C18-AQ

Selectivity

Uptisphere® X-serie™

Capacity

Productivity



Uptisphere® X-serie™ C18-AQ

220Å - 200m²/g

3, 5 & 15 μm

Bonding: C18

%C: 14

End-capping: mixte

pH stability: 1.0 to 10.0

*mid-polar BioDrugs & Peptides with medium molecular weight.
100% water compatible*

Reusable columns

Application:

Bio-molecules, Bio-Drugs

C18-AQ

Selectivity

puriFlash® Prep

Capacity

Productivity



puriFlash® Prep C18-AQ

Spherical silica

60Å - 500m²/g

5, 10, 15 & 30 µm

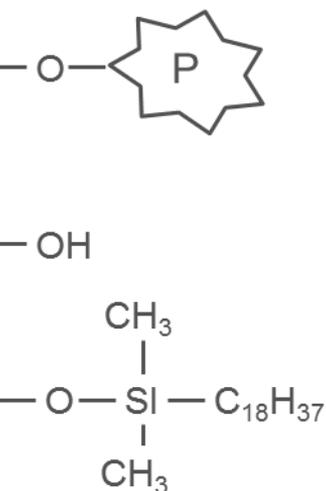
Bonding: C18

%C: 14

End-capping: one-step hydrophilic

pH stability: 2.0 to 7.5

*The bonding chemistry allow to start gradient with 100% of water.
Suitable for the purification of mid and non polar compounds.*



Reusable columns

Application:

mid-polar organic compounds

100% water compatible



interchim

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