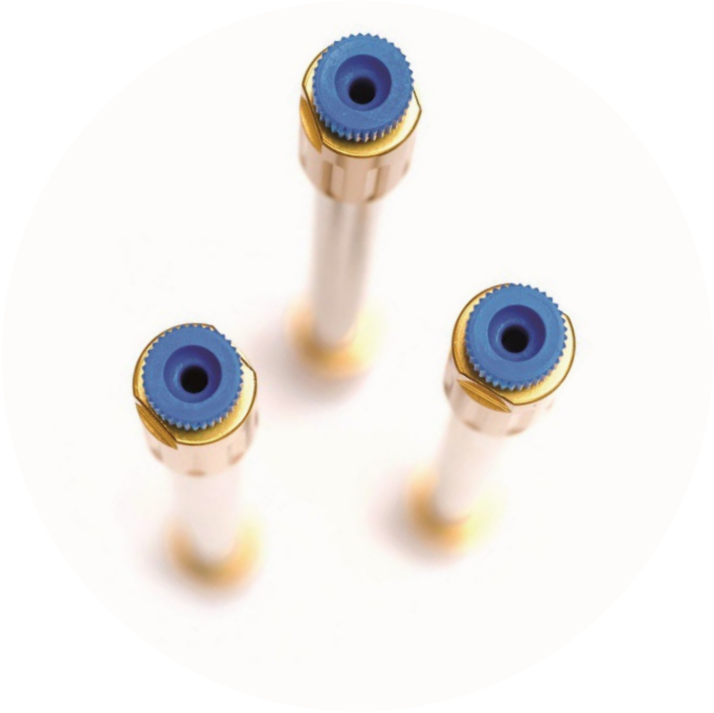
NLAB SAGA®

HPLC COLUMNS

SWEDISH EXCELLENCE IN NANOPORUS SILICA



NANOLOGICA

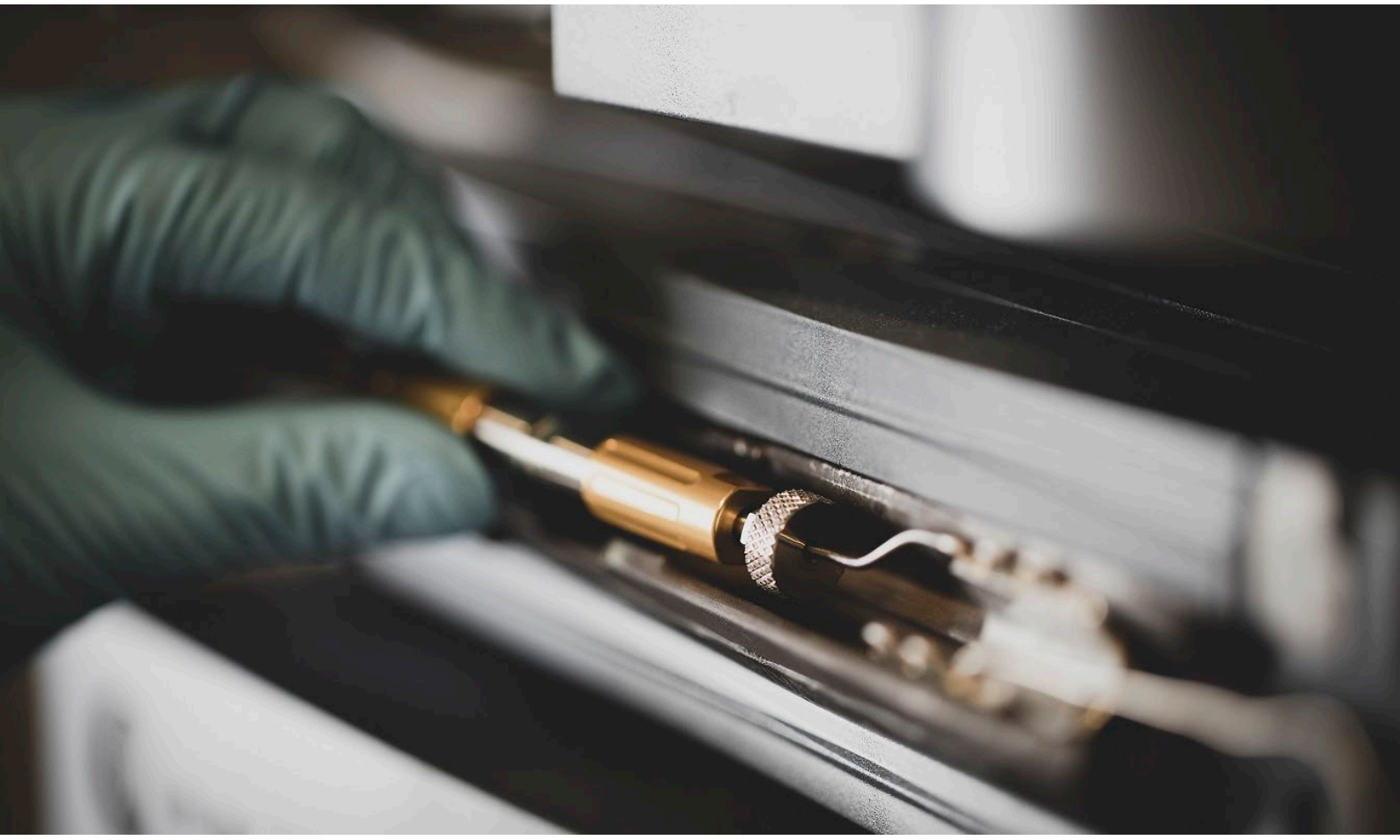
ABOUT NLAB SAGA® COLUMNS

Nanologica offers best-in-class HPLC analytical columns that provide excellent chromatographic performance with sharp peak shapes and robust performance under extreme pH conditions (<1 and > 10 respectively).

The unique surface chemistry and controlled particle properties of Nanologica's proprietary silica, result in low back pressures and high plate numbers. With an exceptionally strong silica backbone, NLAB Saga® columns offer long life cycles.

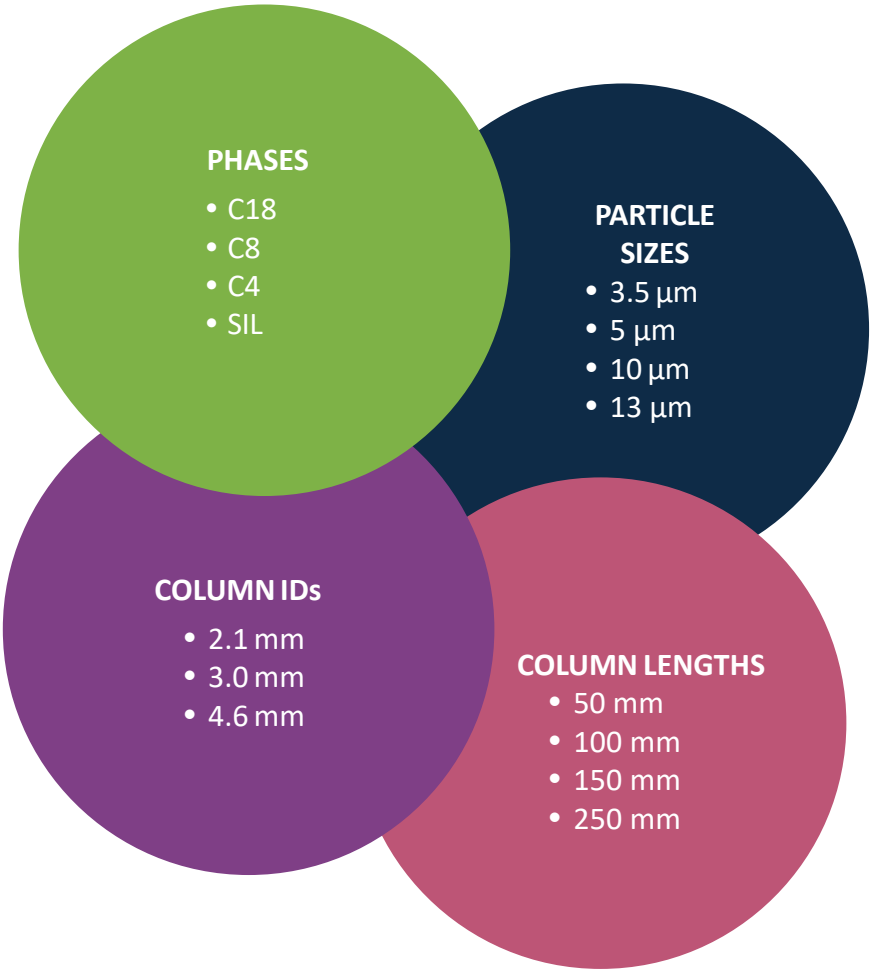
NLAB Saga® columns gives excellent selectivity across a wide range of chemistry needs.

We take pride in the quality, design and performance of our products. They embody our core value: Swedish Excellence in Nanoporous Silica.




3.0

Nanologica offers best-in-class HPLC columns
with a portfolio of various bonded phases

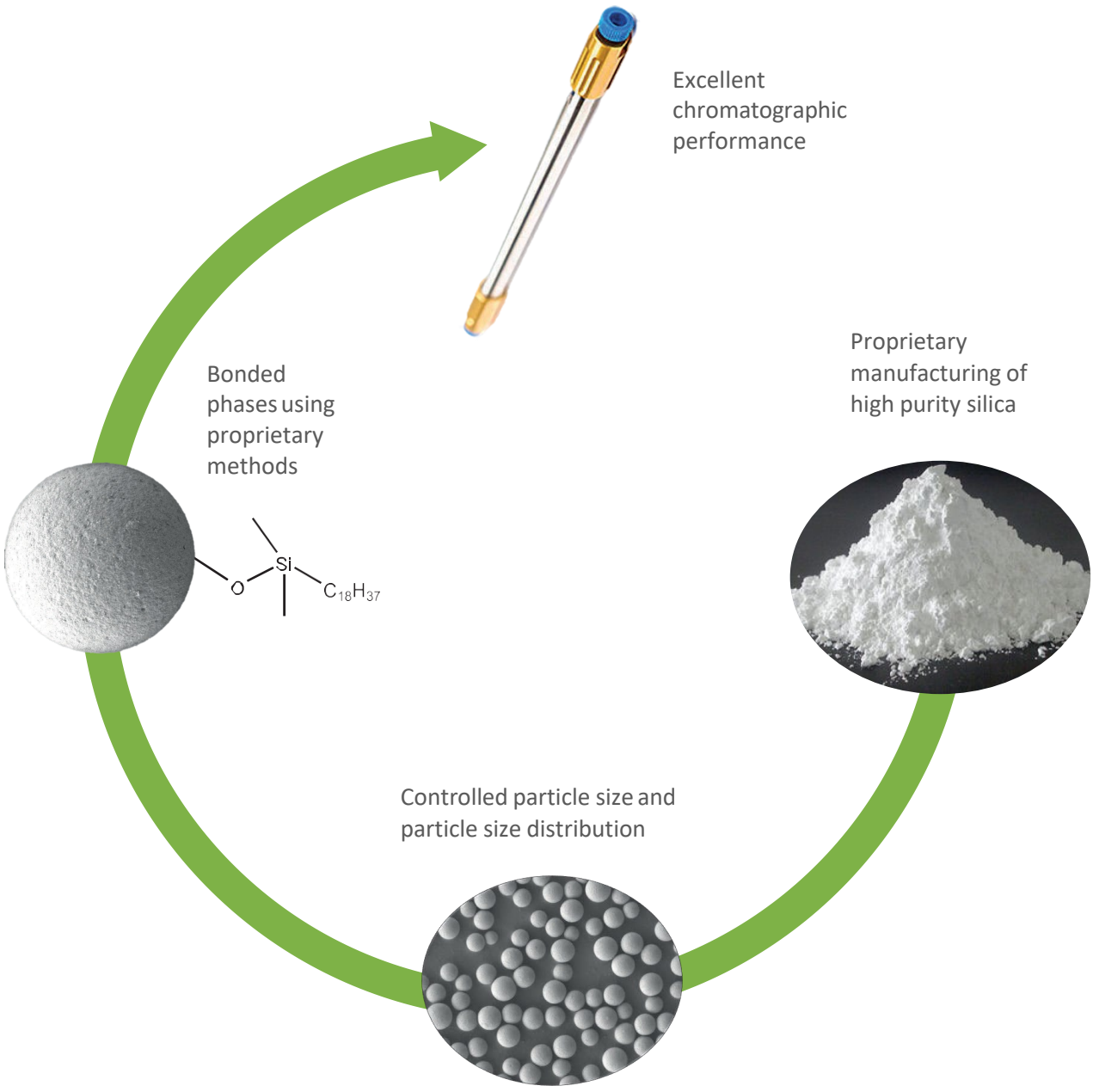


Other phases and dimensions may available on request. Regarding silica for preparative chromatography please contact us or refer to www.nanologica.com for more information.

CONTENT

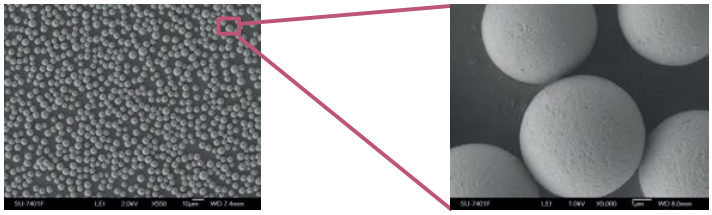
FROM SILICA TO COLUMNS

Nanologica has been producing, modifying and coating silica for several years. Modern technology and demanding quality control is deployed at each step of the manufacturing process to ensure highest possible product performance. The extensive experience and knowledge in silica chemistry, along with internal control of the entire value chain, guarantees exceptional quality and excellent batch to batch reproducibility.

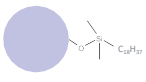
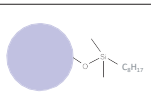
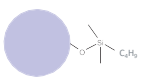


SILICA PRODUCTION AND FUNCTIONALISATION

Nanologica manufactures spherical porous silica particles with controlled pore size, particle size, and particle size distribution, resulting in excellent chromatographic properties. The Scanning Electron Microscope (SEM) image below shows perfect spherical shapes and narrow particle size distribution with no fines or crushed particles. The magnified image shows perfectly smooth silica surfaces with no irregularities.



Nanologica offers a range of phases with different and complementary chromatographic properties. The functionalisation is performed using proprietary production protocols, to produce densely functionalised and end-capped silica particles with low residual silanol activity. The coated silica particles exhibit excellent chromatographic performance and outstanding chemical stability.

Stationary phase	Chemical structure	End-capped	USP code
SIL		No	L3
C18		Yes	L1
C8		Yes	L7
C4		Yes	L26

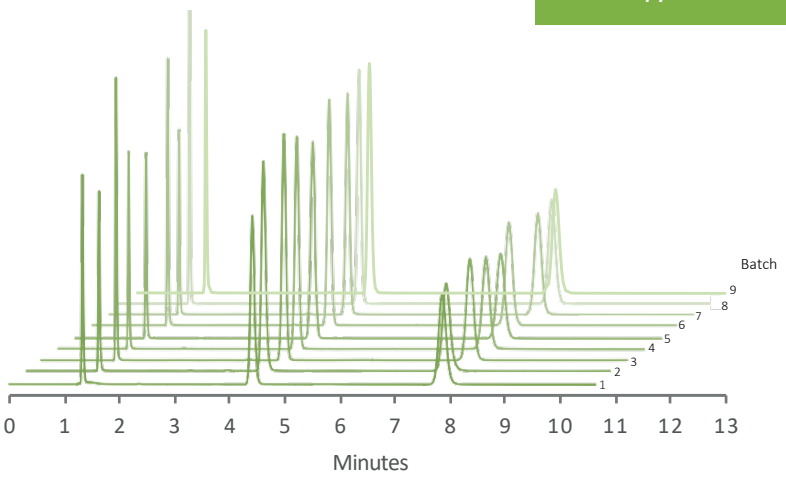
REPRODUCIBILITY

Nanologica's coating shows high batch to batch reproducibility for both retention times and efficiencies.

Column	NLAB Saga® C18 150x4.6 mm 5 µm
Mobile phase	Acetonitrile/H_2O 70/30%
Flow rate	1.0 ml/min
Temperature	30°C
Detection	UV 210 nm

Analytes:

1. **Uracil**
2. **Toluene**
3. **Propylbenzene**



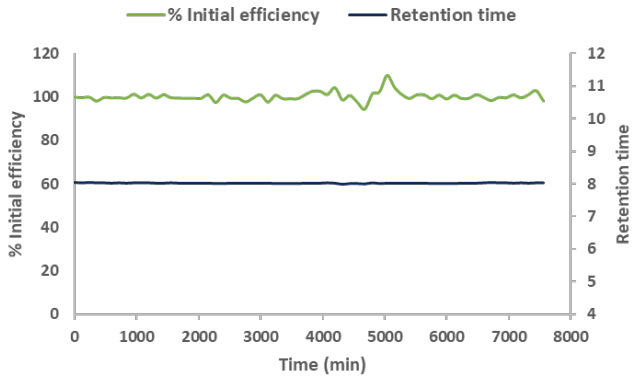
DURABILITY

The NLAB Saga® columns show excellent durability in harsh acidic as well as harsh basic conditions. Both efficiencies and retention times remain almost unaffected even after more than 7,000 column volumes, as shown in the stability tests below.

ACIDIC CONDITIONS

Column	NLAB Saga® C18 100x4.6 mm 5 µm
Mobile phase	A - 1% TFA in water, pH 0.9; B - 1% TFA in acetonitrile
Flow rate	1.0 ml/min
Temperature	60°C
Analyte	Ethylbenzene

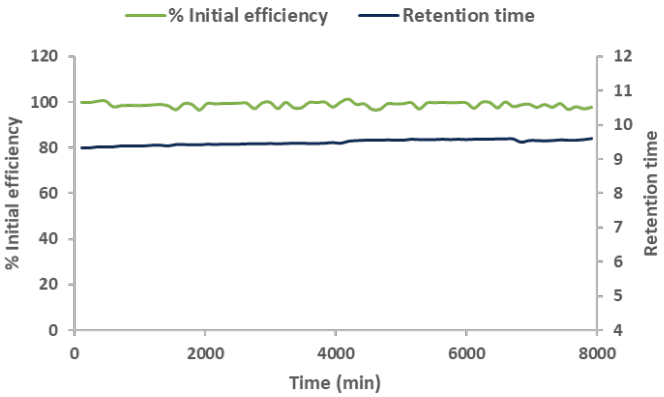
Gradient cycle	10-90% B in 5 min
	90% B for 2 min
	90-10% B in 1 min
	10% B for 2 min



BASIC CONDITIONS

Column	NLAB Saga® C18 100x4.6 mm 5 µm
Mobile phase	A - 10 mM ammonium bicarbonate, pH 9.6; B - Acetonitrile
Flow rate	1.0 ml/min
Temperature	45°C
Analyte	Progesterone

Gradient cycle	10-90% B in 5 min
	90% B for 2 min
	90-10% B in 1 min
	10% B for 2 min

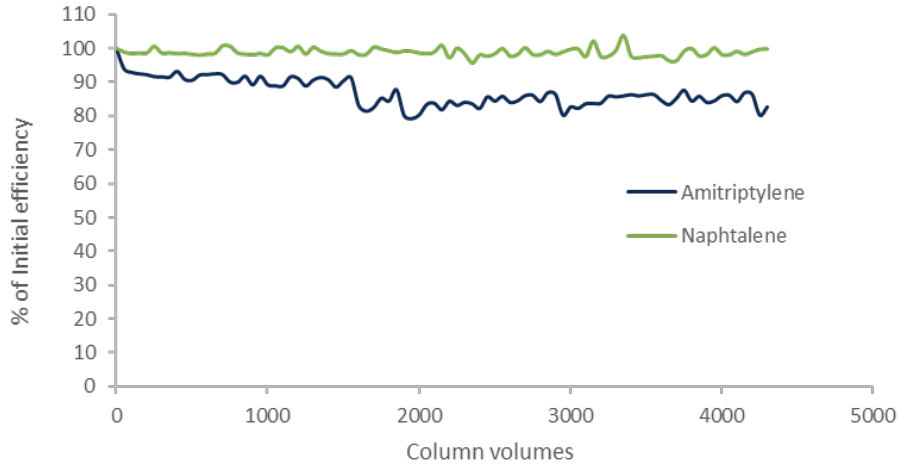


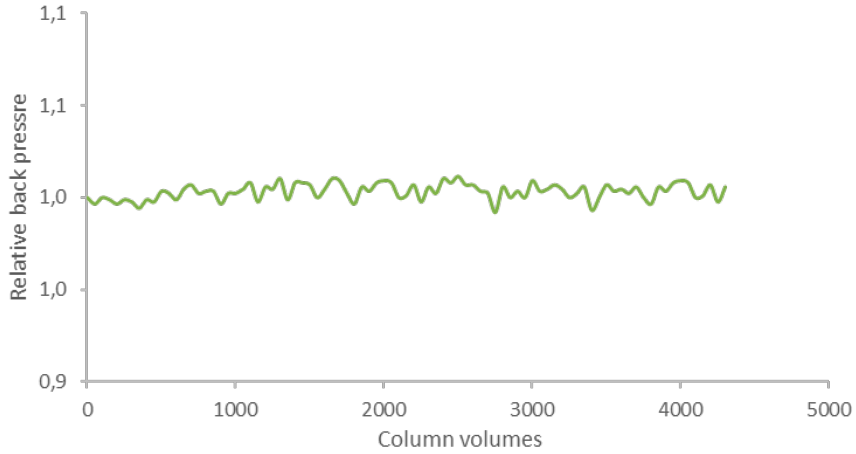
BED STABILITY

Bed stability testing shows maintained efficiency and stable back pressure after close to 100,000 column volumes.

BED STABILITY

Column	NLAB Saga® C18 100x3.0 mm 5 µm
Mobile phase	20 mM Potassium phosphate buffer at pH 2.7/MeOH 40/60
Flow rate	0.5 ml/min
Temperature	30°C
Analyte	Amitriptylin, Naphtalene





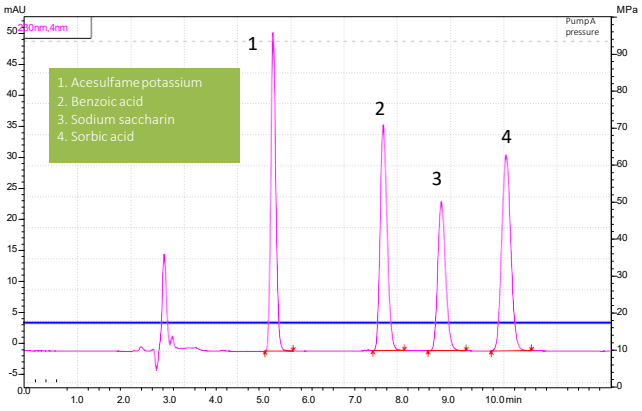
COLUMN LIFE CYCLE

The long life cycle of the NLAB Saga® columns is demonstrated by preserved separation capacity even after 1,700 column injections when analyzing a food sample.

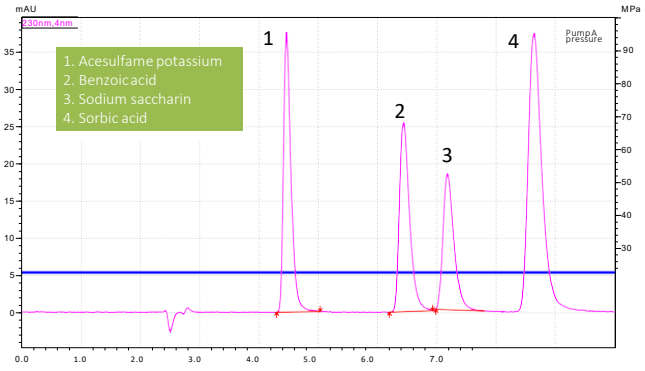
LIFE CYCLE

Column	NLAB Saga® C18 250x4.6 mm 5 µm
Mobile phase	Methanol: 20mmol/L Ammonium Acetate=20:80 (v:v)
Flow rate	1.0 ml/min
Temperature	35°C
Analyte	Acesulfame potassium, Benzoic acid, Sorbic acid, Sodium saccharide

Separation of acesulfame potassium, benzoic acid, sodium saccharin and sorbic acid. Analytical sample prepared from preserves widely used in food industry. Data kindly provided by SinoUnion Technology Co., Ltd., China.



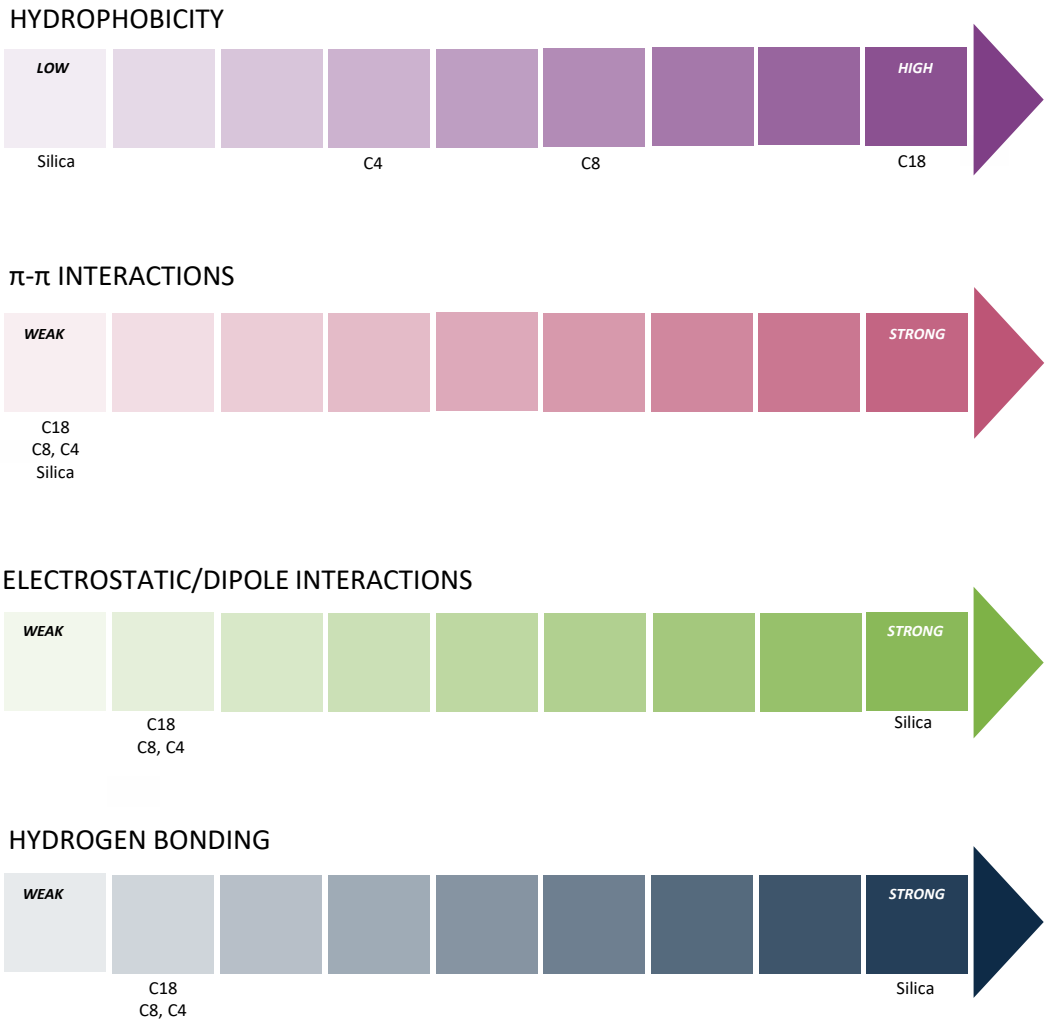
Separation after one injection using a new NLAB Saga® C18 column.



Separation after 1,700 injections.

COLUMN SELECTION GUIDE

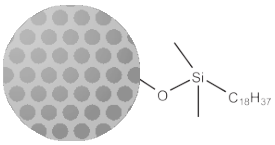
Different kinds of functionalisation offer different interaction mechanisms between the stationary phase and analytes, to fit a wide range of applications. The figure below is a guideline for reverse phase chromatography, for choosing the right type of bonded phase depending on the interaction between the analyte and the stationary phase.



NLAB Saga® C18

Silica:	Type B Silica
Particle size:	3.5, 5 µm
Surface area:	300 m^2/g
Pore size:	100 Å
Pore volume:	0.85 ml/g
Carbon load:	19%
Ligand density:	3.7 µmol/m^2
Bonded phase:	Dimethyloctadecylsilane
End-capping:	Yes
USP code:	L1
pH range:	1-10

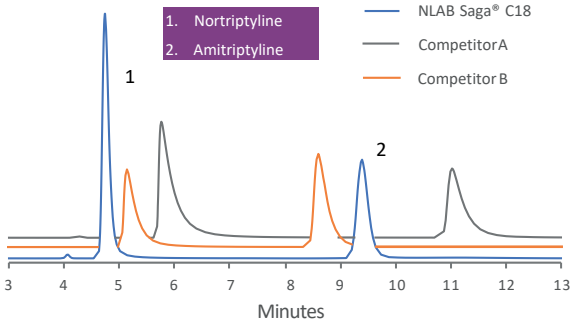
- General first choice column
- High hydrophobic retention
- Wide range of analytes
- Excellent peak shape for acids and bases



NLAB Saga® C18 is the first-choice LC column for a wide range of analytes. The high carbon load provides high retention and selectivity for compounds with moderate to high lipophilicity. Thorough end-capping combined with very low acidity and homogenously distributed residual silanol groups result in excellent peak shape and efficiencies with bases as well as acidic compounds.

Comparison of peak shapes and retention times of nortriptyline and amitriptyline

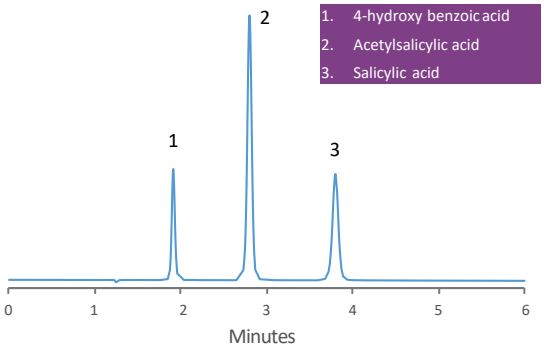
Column	NLAB Saga® C18 150x4.6 mm 5µm
Mobile phase	20% 25 mM KH_2PO_4 pH 7.0 80% methanol
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 210 nm



Thorough end-capping and low polarity of the silica surface of NLAB Saga® C18 gives significantly better peak shapes of anti-depressants, compared to competitor brands.

Acetylsalicylic acid and related compounds

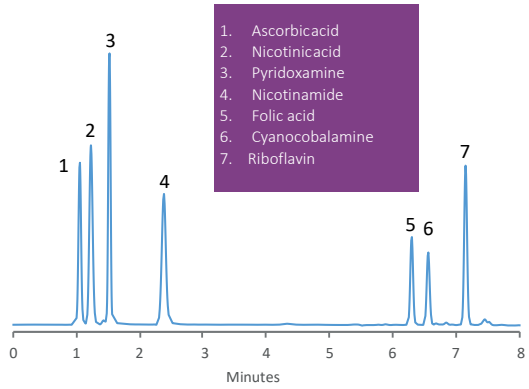
Column	NLAB Saga® C18 150x4.6 mm 5µm
Mobile phase	60% 0.3% H3PO4 40% acetonitrile
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 237 nm



High separation efficiency and symmetrical peak shapes. The tailing factor for salicylic acid is 0.96.

Water soluble vitamins

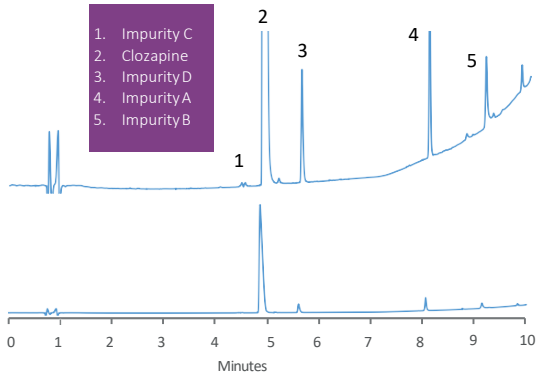
Column	NLAB Saga® C18 150x4.6 mm 5µm
Mobile phase	A 25 mM KH_2PO_4 pH 3.6; B acetonitrile
Gradient	5-30% B in 8 min
Flow rate	1.5 ml/min
Temperature	25°C



Sharp peaks and selectivities of vitamins.

Clozapine and related impurities

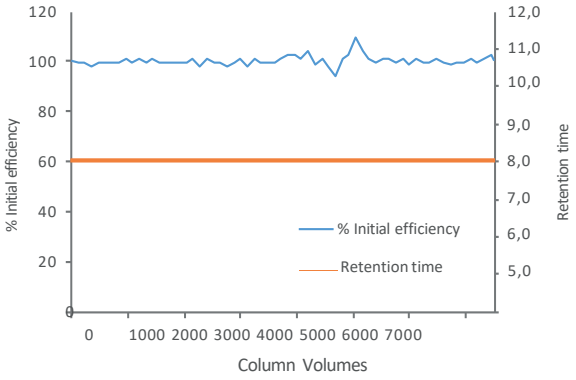
Column	NLAB Saga® C18 100x4.6 mm 3.5µm
Mobile phase	A 0.1% TFA in H_2O; B 0.1 % TFA in acetonitrile
Gradient	10-30% B in 4 min, 30-95% B in 4 min, 95% B in 2 min
Flow rate	1.5 ml/min
Temperature	25°C
Detection	UV 257 nm



The high efficiency of NLAB Saga® C18 3.5 µm gives an extraordinary resolution profile over the forced degradation sample of Clozapine.

Low pH stability at high temperature

Column	NLAB Saga® C18 150x4.6 mm 5µm
Mobile phase	A 1% TFA in H_2O pH0.9; B 1 % TFA in acetonitrile
Gradient	10-90% B in 5 min, 90% B in 2 min, 90-10% B in 1 min, 10% B in 2 min
Flow rate	1.0 ml/min
Temperature	60°C
Detection	UV 254 nm



No change in either efficiency or retention time for ehylbenzene after running gradient cycles at pH 0.9 and 60°C for more than 7,000 column volumes.

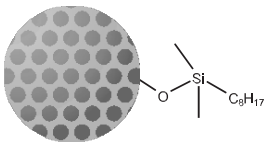
Order information NLAB Saga® C18 columns

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
3.5 µm	2.1	50 mm	100 Å	A332V1
		100 mm	100 Å	A352V1
		150 mm	100 Å	A362V1
	3	50 mm	100 Å	A333V1
		100 mm	100 Å	A353V1
		150 mm	100 Å	A363V1
		250 mm	100 Å	A383V1
	4.6	50 mm	100 Å	A335V1
		100 mm	100 Å	A355V1
		150 mm	100 Å	A365V1
		250 mm	100 Å	A385V1
5 µm	3	50 mm	100 Å	A533V1
		100 mm	100 Å	A553V1
		150 mm	100 Å	A563V1
		250 mm	100 Å	A583V1
	4.6	50 mm	100 Å	A535V1
		100 mm	100 Å	A555V1
		150 mm	100 Å	A565V1
		250 mm	100 Å	A585V1
	10	150 mm	100 Å	A561V9
		250 mm	100 Å	A581V9
	21.2	50 mm	100 Å	A539V9
		100 mm	100 Å	A559V9
		150 mm	100 Å	A569V9
		250 mm	100 Å	A589V9
	30	50 mm	100 Å	A537V9
		100 mm	100 Å	A557V9
		150 mm	100 Å	A567V9
		250 mm	100 Å	A587V9
	50	50 mm	100 Å	A536V9
		250 mm	100 Å	A586V9

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
10 µm	10	150 mm	100 Å	A761V9
		250 mm	100 Å	A781V9
	21.2	50 mm	100 Å	A739V9
		100 mm	100 Å	A759V9
		150 mm	100 Å	A769V9
		250 mm	100 Å	A789V9
	30	50 mm	100 Å	A737V9
		100 mm	100 Å	A757V9
		150 mm	100 Å	A767V9
		250 mm	100 Å	A787V9
	50	50 mm	100 Å	A736V9
		250 mm	100 Å	A786V9
13 µm	10	150 mm	100 Å	A861V9
		250 mm	100 Å	A881V9
	21.2	50 mm	100 Å	A839V9
		100 mm	100 Å	A859V9
		150 mm	100 Å	A869V9
		250 mm	100 Å	A889V9
	30	50 mm	100 Å	A837V9
		100 mm	100 Å	A857V9
		150 mm	100 Å	A867V9
		250 mm	100 Å	A887V9
	50	50 mm	100 Å	A836V9
		250 mm	100 Å	A886V9

NLAB Saga® C8

Silica:	Type B Silica
Particle size:	3.5, 5 µm
Surface area:	300 m^2/g
Pore size:	100 Å
Pore volume:	0.85 ml/g
Carbon load:	11%
Ligand density:	3.7 µmol/m^2
Bonded phase:	Dimethyloctylsilane
End-capping:	Yes
USP code:	L7
pH range:	1-9

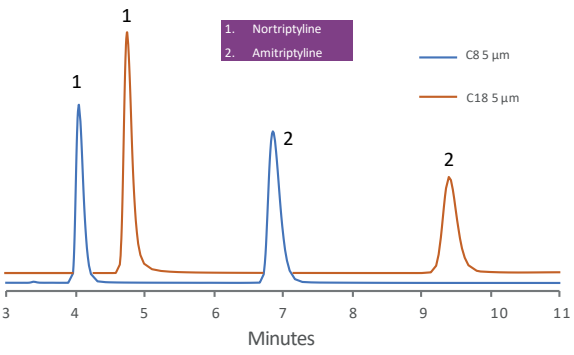


- Similar selectivity for lipophilic compounds as C18
- Lower retention than C18
- Slightly different selectivity for ionized acids and bases compared to NLAB Saga® C18
- Excellent peak shape for acids and bases

An alternative media to NLAB Saga® C18 that gives lower retention. Due to the more hydrophilic nature of the bonded phase, ionized acids and especially bases can have better peak shapes and different selectivity compared to NLAB Saga® C18. Recommended for mixture containing moderately polar and very hydrophobic compounds.

Comparison of peak shapes and retention times between C8 and C18 for two anti-depressants

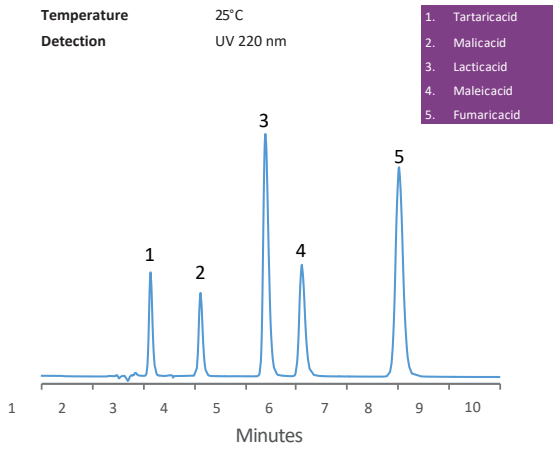
Column	NLAB Saga® C8 150x4.6 mm 5 µm and C18 5 µm
Mobile phase	20% 25 mM KH_2PO_4 pH 7.0 80% methanol
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 210 nm



The excellent peak shapes for ionized compounds with NLAB Saga® C8 is revealed by analysing anti-depressants.

Water soluble organic acids

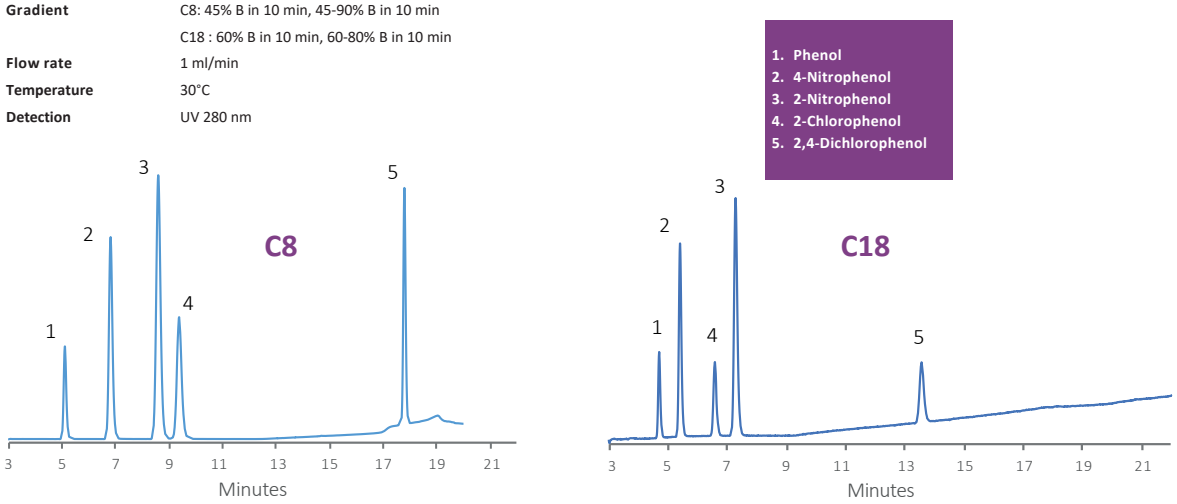
Column	NLAB Saga® C8 250x4.6 mm 5 µm
Mobile phase	97% 25 mM KH_2PO_4 pH 2.5 3% methanol
Flow rate	1 ml/min
Temperature	25°C
Detection	UV 220 nm



Excellent peak shapes and selectivities of water soluble organic acids are obtained at highly hydrophilic elution conditions.

Comparison of the elution order of phenols between C8 and C18 bonded silica

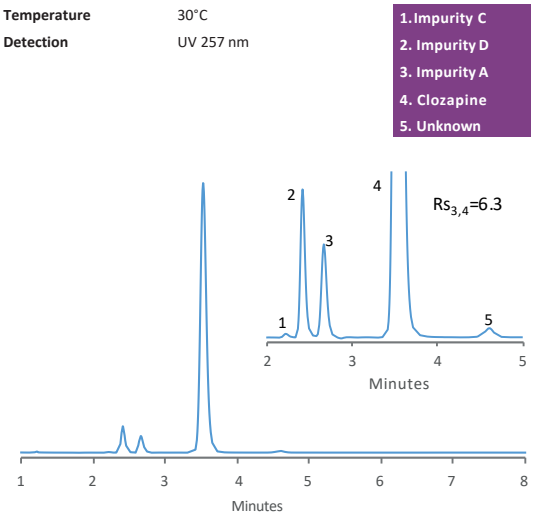
Column	NLAB Saga® C8 150x4.6 mm 5µm and C18 250x4.6 5 µm
Mobile phase	A 1% AcOH in H_2O, B 1% AcOH in methanol
Gradient	C8: 45% B in 10 min, 45-90% B in 10 min
	C18 : 60% B in 10 min, 60-80% B in 10 min
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 280 nm



C8 is more hydrophilic than C18 as seen by the reversal of the elution order of 2-nitrophenol and 2-chlorophenol.

Clozapine system suitability test

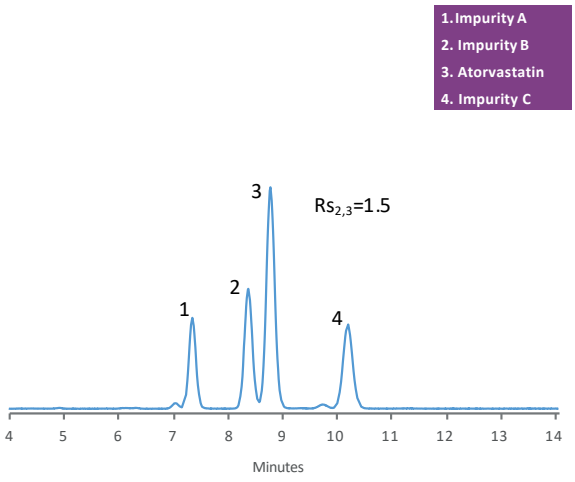
Column	NLAB Saga® C8 150x4.6 mm 5µm
Mobile phase	20% 0.38% Et_3N in H_2O 80% methanol
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 257 nm



Sharp peaks and resolution.

Atorvastatin (Lipitor) system suitability test

Column	NLAB Saga® C8 100x4.6 mm 3.5µm
Mobile phase	58% 50 mM NH_4OAc pH 4.6 30% acetonitrile, 12% THF
Flow rate	1.2 ml/min
Temperature	30°C
Detection	UV 244 nm



Atorvastatin and its diastereomeric Impurity B are seperated well using NLAB Saga® C8 3.5 µm.

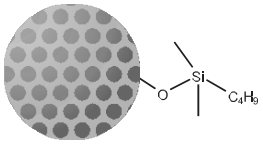
Order information NLAB Saga® C8 columns

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
3.5 µm	2.1	50 mm	100 Å	B332V1
		100 mm	100 Å	B352V1
		150 mm	100 Å	B362V1
	3	50 mm	100 Å	B333V1
		100 mm	100 Å	B353V1
		150 mm	100 Å	B363V1
		250 mm	100 Å	B383V1
	4.6	50 mm	100 Å	B335V1
		100 mm	100 Å	B355V1
		150 mm	100 Å	B365V1
		250 mm	100 Å	B385V1
5 µm	3	50 mm	100 Å	B533V1
		100 mm	100 Å	B553V1
		150 mm	100 Å	B563V1
		250 mm	100 Å	B583V1
	4.6	50 mm	100 Å	B535V1
		100 mm	100 Å	B555V1
		150 mm	100 Å	B565V1
		250 mm	100 Å	B585V1
	10	150 mm	100 Å	B561V9
		250 mm	100 Å	B581V9
	21.2	50 mm	100 Å	B539V9
		100 mm	100 Å	B559V9
		150 mm	100 Å	B569V9
		250 mm	100 Å	B589V9
	30	50 mm	100 Å	B537V9
		100 mm	100 Å	B557V9
		150 mm	100 Å	B567V9
		250 mm	100 Å	B587V9
	50	50 mm	100 Å	B536V9
		250 mm	100 Å	B586V9

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
10 µm	10	150 mm	100 Å	B761V9
		250 mm	100 Å	B781V9
	21.2	50 mm	100 Å	B739V9
		100 mm	100 Å	B759V9
		150 mm	100 Å	B769V9
		250 mm	100 Å	B789V9
	30	50 mm	100 Å	B737V9
		100 mm	100 Å	B757V9
		150 mm	100 Å	B767V9
		250 mm	100 Å	B787V9
	50	50 mm	100 Å	B736V9
		250 mm	100 Å	B786V9
13 µm	10	150 mm	100 Å	B861V9
		250 mm	100 Å	B881V9
	21.2	50 mm	100 Å	B839V9
		100 mm	100 Å	B859V9
		150 mm	100 Å	B869V9
		250 mm	100 Å	B889V9
	30	50 mm	100 Å	B837V9
		100 mm	100 Å	B857V9
		150 mm	100 Å	B867V9
		250 mm	100 Å	B887V9
	50	50 mm	100 Å	B836V9
		250 mm	100 Å	B886V9

NLAB Saga® C4

Silica:	Type B Silica
Particle size:	3.5, 5 µm
Surface area:	300 m^2/g
Pore size:	100 Å
Pore volume:	0.85 ml/g
Carbon load:	7%
Ligand density:	3.7 µmol/m^2
Bonded phase:	Dimethylbutylsilane
End-capping:	Yes
USP code:	L26
pH range:	1-8

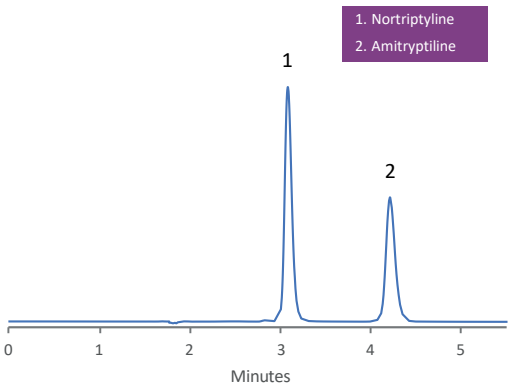


- Recommended for separation of large peptides and proteins
- Very low retention for lipophilic compounds
- Can also be run in HILIC-mode

Recommended for extremely lipophilic compounds to reduce analytical time. Excellent starting point for analyzing peptide and protein mixtures. For intermediately polar analytes, such as amino acids, NLAB Saga® C4 can also be run in HILIC-mode.

Separation of Nortriptyline and Amitriptyline

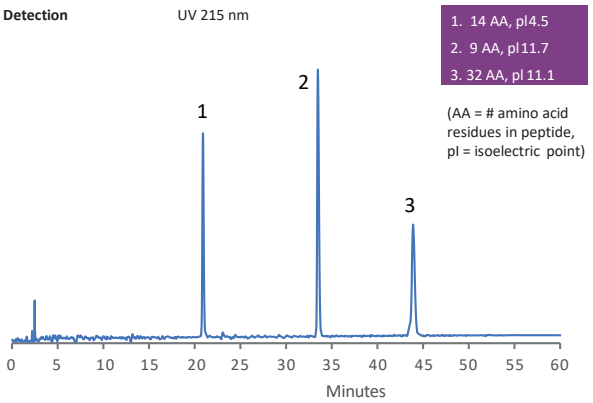
Column	NLAB Saga® C4 150x4.6 mm 5µm
Mobile phase	20% 25 mM KH_2PO_4 pH 7.0 80% methanol
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 210 nm



Short retention times and symmetrical peaks of the basicanti-depressants obtained on NLAB Saga® C4.

Peptide mix separation

Column	NLAB Saga® C4 150x4.6 mm 5µm
Mobile phase	A 0.1% TFA in H_2O, B 0.085% TFA in acetonitrile
Gradient	10-50% B in 60 min
Flow rate	1 ml/min
Temperature	30°C
Detection	UV 215 nm



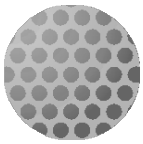
Separation of three different peptides on NLAB Saga® C4.

Order information NLAB Saga® C4 columns

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
3.5 µm	2.1	50 mm	100 Å	C332V1
		100 mm	100 Å	C352V1
		150 mm	100 Å	C362V1
	3	50 mm	100 Å	C333V1
		100 mm	100 Å	C353V1
		150 mm	100 Å	C363V1
		250 mm	100 Å	C383V1
	4.6	50 mm	100 Å	C335V1
		100 mm	100 Å	C355V1
		150 mm	100 Å	C365V1
		250 mm	100 Å	C385V1
5 µm	3	50 mm	100 Å	C533V1
		100 mm	100 Å	C553V1
		150 mm	100 Å	C563V1
		250 mm	100 Å	C583V1
	4.6	50 mm	100 Å	C535V1
		100 mm	100 Å	C555V1
		150 mm	100 Å	C565V1
		250 mm	100 Å	C585V1

NLAB Saga® SIL

Silica:	Type B Silica
Particle size:	3.5, 5 µm
Surface area:	300 m²/g
Pore size:	100 Å
Pore volume:	0.85 ml/g
Carbon load:	-
Ligand density:	-
Bonded phase:	-
End-capping:	-
USP code:	L3
pH range:	2-8



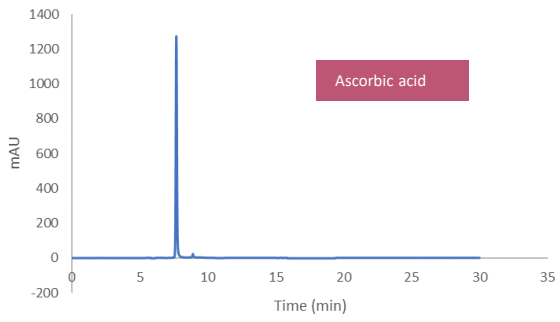
- HILIC and Normal Phase
- Excellent peak shapes for acidic, neutral and basic compounds
- Recommended for non-polar and moderately polar organic compounds

NLAB Saga® SIL is a bare silica column designed for normal phase chromatography. The mechanisms of actions are partitioning of the analytes between an almost stagnant water layer close to the silica surface and the mobile phase; polar interactions and hydrogen bonding etc.

The column is recommended for separation of non-polar and moderately polar organic compounds by normal phase chromatography, and gives excellent peak shapes for acidic, neutral and basic compounds.

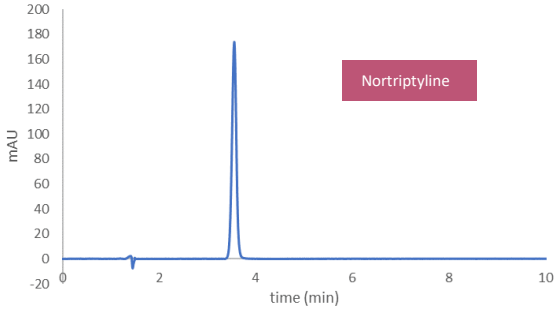
Ascorbic acid (high water solubility)

Column	NLAB Saga® SIL 100x30 mm 5 µm
Mobile phase	A: ACN/20mM ammonium acetate 50/50
	B: ACN/100mM ammonium acetate 90/10
Gradient	0-2 min 100%; 2-10 min 0%; 10-12 min 0%,
	12.5-30 min 100%
Flow rate	0.43 ml/min
Temperature	30°C
Detection	UV 254 mm



Nortriptyline (basic molecule)

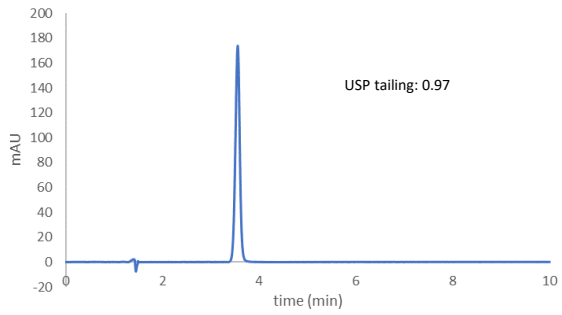
Column	NLAB Saga® SIL 100x30 mm 5 µm
Mobile phase	70/30 ACN/20 mM ammonium acetate
Flow rate	0.43 ml/min
Temperature	30°C
Detection	UV 230 mm

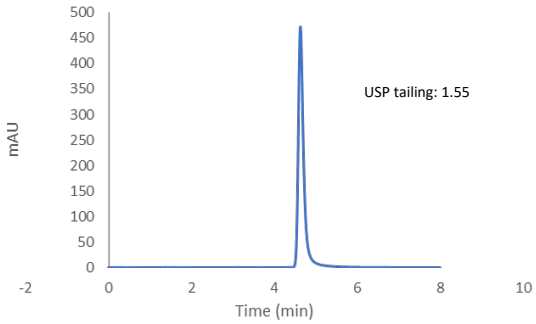


USP tailing for Nortriptyline: 0.97
This shows homogeneous distribution of the silanol groups over the surface.

Comparison of Nortriptyline chromatograms run with unbonded silica and C18

Column	NLAB Saga® SIL 100x30 mm 5 µm	NLAB Saga® C18 150x4.6 mm 5 µm
Mobile phase	70/30 ACN/20 mM ammonium acetate pH 6.8	80/20 MeOH/ 25 mM potassium phosphate pH 7.0
Flow rate	0.43 ml/min	1.0 ml/min
Temperature	30°C	30°C
Detection	UV 230 mm	UV 210 mm

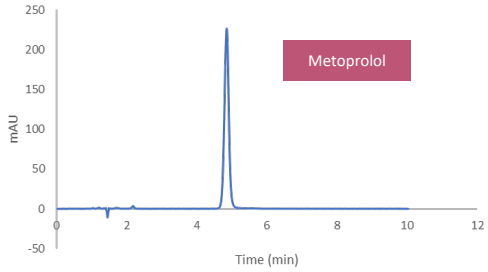




This example illustrates analytical runs with a basic molecule which were performed on C18 and unbonded silica NLAB Saga® columns. In both cases pH of the buffer was neutral. Under these conditions, nortriptyline was protonated, and the silica surface was deprotonated. Such conditions would for the C18 covered surface cause secondary interactions between residual silanol groups and the base and one would observe peak tailing. For the unbonded silica, non-even distribution and activity of silanol groups would cause secondary interactions and result in a peak tailing. For both of the phases of the NLAB Saga® columns, the peak tailing is very low, verifying the homogeneous surface coverage.

Metoprolol (basic molecule)

Column	NLAB Saga® SIL 100x30 mm 5 µm
Mobile phase	70/30 ACN/20 mM ammonium acetate
Flow rate	0.43 ml/min
Temperature	30°C
Detection	UV 230 mm



USP tailing for Metoprolol: 0.997
Homogenous distribution of silanol groups on the surface.

Order information NLAB Saga® SIL columns

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
3.5 µm	2.1	25 mm	100 Å	S312V1
		50 mm	100 Å	S332V1
		100 mm	100 Å	S352V1
		150 mm	100 Å	S362V1
	3	25 mm	100 Å	S313V1
		50 mm	100 Å	S333V1
		100 mm	100 Å	S353V1
		150 mm	100 Å	S363V1
		250 mm	100 Å	S383V1
	4.6	25 mm	100 Å	S315V1
		50 mm	100 Å	S335V1
		100 mm	100 Å	S355V1
		150 mm	100 Å	S365V1
		250 mm	100 Å	S385V1
5 µm	3	25 mm	100 Å	S513V1
		50 mm	100 Å	S533V1
		100 mm	100 Å	S553V1
		150 mm	100 Å	S563V1
		250 mm	100 Å	S583V1
	4.6	25 mm	100 Å	S515V1
		50 mm	100 Å	S535V1
		100 mm	100 Å	S555V1
		150 mm	100 Å	S565V1
		250 mm	100 Å	S585V1
	10	150 mm	100 Å	S561V9
		250 mm	100 Å	S581V9
	21.2	50 mm	100 Å	S539V9
		100 mm	100 Å	S559V9
		150 mm	100 Å	S569V9
		250 mm	100 Å	S589V9
	30	50 mm	100 Å	S537V9
		100 mm	100 Å	S557V9
		150 mm	100 Å	S567V9
		250 mm	100 Å	S587V9
	50	50 mm	100 Å	S536V9
		250 mm	100 Å	S586V9

Particle Size	Column ID (mm)	Column Length	Pore Size	Article Number
10 µm	10	150 mm	100 Å	S761V9
		250 mm	100 Å	S781V9
	21.2	50 mm	100 Å	S739V9
		100 mm	100 Å	S759V9
		150 mm	100 Å	S769V9
		250 mm	100 Å	S789V9
	30	50 mm	100 Å	S737V9
		100 mm	100 Å	S757V9
		150 mm	100 Å	S767V9
		250 mm	100 Å	S787V9
	50	50 mm	100 Å	S736V9
		250 mm	100 Å	S786V9
13 µm	10	150 mm	100 Å	S861V9
		250 mm	100 Å	S881V9
	21.2	50 mm	100 Å	S839V9
		100 mm	100 Å	S859V9
		150 mm	100 Å	S869V9
		250 mm	100 Å	S889V9
	30	50 mm	100 Å	S837V9
		100 mm	100 Å	S857V9
		150 mm	100 Å	S867V9
		250 mm	100 Å	S887V9
	50	50 mm	100 Å	S836V9
		250 mm	100 Å	S886V9

Article numbers NLAB Saga® columns

Bonded phase	Particle size	Column ID (mm)	Column length	Pore size	Article number
C18	5 µm	3,0	50 mm	100 Å	A533V1
C18	5 µm	3,0	100 mm	100 Å	A553V1
C18	5 µm	3,0	150 mm	100 Å	A563V1
C18	5 µm	3,0	250 mm	100 Å	A583V1
C18	5 µm	4,6	50 mm	100 Å	A535V1
C18	5 µm	4,6	100 mm	100 Å	A555V1
C18	5 µm	4,6	150 mm	100 Å	A565V1
C18	5 µm	4,6	250 mm	100 Å	A585V1
C18	3.5 µm	2,1	50 mm	100 Å	A332V1
C18	3.5 µm	2,1	100 mm	100 Å	A352V1
C18	3.5 µm	2,1	150 mm	100 Å	A362V1
C18	3.5 µm	3,0	50 mm	100 Å	A333V1
C18	3.5 µm	3,0	100 mm	100 Å	A353V1
C18	3.5 µm	3,0	150 mm	100 Å	A363V1
C18	3.5 µm	3,0	250 mm	100 Å	A383V1
C18	3.5 µm	4,6	50 mm	100 Å	A335V1
C18	3.5 µm	4,6	100 mm	100 Å	A355V1
C18	3.5 µm	4,6	150 mm	100 Å	A365V1
C18	3.5 µm	4,6	250 mm	100 Å	A385V1
C8	5 µm	3,0	50 mm	100 Å	B533V1
C8	5 µm	3,0	100 mm	100 Å	B553V1
C8	5 µm	3,0	150 mm	100 Å	B563V1
C8	5 µm	3,0	250 mm	100 Å	B583V1
C8	5 µm	4,6	50 mm	100 Å	B535V1
C8	5 µm	4,6	100 mm	100 Å	B555V1
C8	5 µm	4,6	150 mm	100 Å	B565V1
C8	5 µm	4,6	250 mm	100 Å	B585V1
C8	3.5 µm	2,1	50 mm	100 Å	B332V1
C8	3.5 µm	2,1	100 mm	100 Å	B352V1
C8	3.5 µm	2,1	150 mm	100 Å	B362V1
C8	3.5 µm	3,0	50 mm	100 Å	B333V1
C8	3.5 µm	3,0	100 mm	100 Å	B353V1
C8	3.5 µm	3,0	150 mm	100 Å	B363V1
C8	3.5 µm	3,0	250 mm	100 Å	B383V1
C8	3.5 µm	4,6	50 mm	100 Å	B335V1
C8	3.5 µm	4,6	100 mm	100 Å	B355V1
C8	3.5 µm	4,6	150 mm	100 Å	B365V1
C8	3.5 µm	4,6	250 mm	100 Å	B385V1

Bonded phase	Particle size	Column ID (mm)	Column length	Pore size	Article number
C4	5 µm	3,0	50 mm	100 Å	C533V1
C4	5 µm	3,0	100 mm	100 Å	C553V1
C4	5 µm	3,0	150 mm	100 Å	C563V1
C4	5 µm	3,0	250 mm	100 Å	C583V1
C4	5 µm	4,6	50 mm	100 Å	C535V1
C4	5 µm	4,6	100 mm	100 Å	C555V1
C4	5 µm	4,6	150 mm	100 Å	C565V1
C4	5 µm	4,6	250 mm	100 Å	C585V1
C4	3.5 µm	2,1	50 mm	100 Å	C332V1
C4	3.5 µm	2,1	100 mm	100 Å	C352V1
C4	3.5 µm	2,1	150 mm	100 Å	C362V1
C4	3.5 µm	3,0	50 mm	100 Å	C333V1
C4	3.5 µm	3,0	100 mm	100 Å	C353V1
C4	3.5 µm	3,0	150 mm	100 Å	C363V1
C4	3.5 µm	3,0	250 mm	100 Å	C383V1
C4	3.5 µm	4,6	50 mm	100 Å	C335V1
C4	3.5 µm	4,6	100 mm	100 Å	C355V1
C4	3.5 µm	4,6	150 mm	100 Å	C365V1
C4	3.5 µm	4,6	250 mm	100 Å	C385V1
SIL	5 µm	3,0	50 mm	100 Å	S533V1
SIL	5 µm	3,0	100 mm	100 Å	S553V1
SIL	5 µm	3,0	150 mm	100 Å	S563V1
SIL	5 µm	3,0	250 mm	100 Å	S583V1
SIL	5 µm	4,6	50 mm	100 Å	S535V1
SIL	5 µm	4,6	100 mm	100 Å	S555V1
SIL	5 µm	4,6	150 mm	100 Å	S565V1
SIL	5 µm	4,6	250 mm	100 Å	S585V1
SIL	3.5 µm	2,1	50 mm	100 Å	S332V1
SIL	3.5 µm	2,1	100 mm	100 Å	S352V1
SIL	3.5 µm	2,1	150 mm	100 Å	S362V1
SIL	3.5 µm	3,0	50 mm	100 Å	S333V1
SIL	3.5 µm	3,0	100 mm	100 Å	S353V1
SIL	3.5 µm	3,0	150 mm	100 Å	S363V1
SIL	3.5 µm	3,0	250 mm	100 Å	S383V1
SIL	3.5 µm	4,6	50 mm	100 Å	S335V1
SIL	3.5 µm	4,6	100 mm	100 Å	S355V1
SIL	3.5 µm	4,6	150 mm	100 Å	S365V1
SIL	3.5 µm	4,6	250 mm	100 Å	S385V1

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