NEW!

Next Generation ODS Columns

Cadenza CD-C18

Particle Size: 3um
Pore Size: 12 nm

high quality 3µm Silica, high efficiency, high resolution, less silanol, pH stable, compatible for LC-MS

For superior high throughput analysis

Ultra high resolution columns with maximum **200,000 plates/m** for unparalleled analysis work.

Accelerated analytical speed with high resolution for semi-micro LC.

Rapid analysis and low solvent use without any adjustments to your LC system.

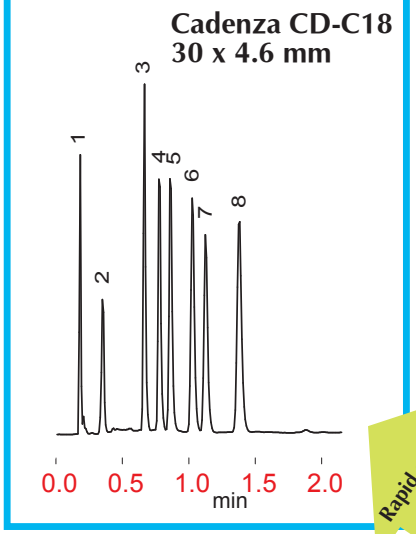
For higher speed and better resolution under the same analytical conditions.

Best optimization of analysis time and resolution.

Prod. Code	Column Internal Diameter, mm 2.0	3.0	4.6	
Column Length, mm 30	CD021	CD031	CD001	Excellent speed in gradient elution.
50	CD022	CD032	CD002	
75	CD023	CD033	CD003	Compatible to conventional 15cm columns.
100	CD024	CD034	CD004	
Special High Resolution Columns				
150	CD025	CD035	CD005	Compatible to conventional 25cm columns.
250	CD026	CD036	CD006	

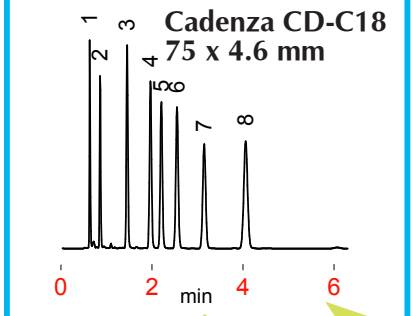
Ultimate in high resolution columns.

Excellent high speed



1. 1-Hydroxy-7-azabenzotriazole
2. Acetoaminophen
3. Prednisolone
4. 6-Methylprednisolone
5. Methyl-3-amino-2-thiophenecarboxylate
6. Corticosterone
7. 4-Aminobenzophenone
8. Propyl paraben

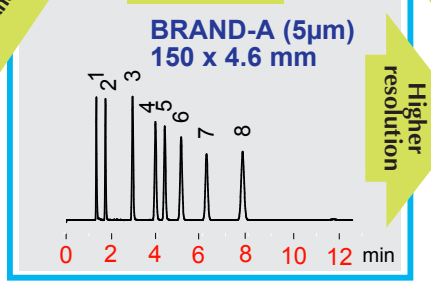
Easy to change



Twice the speed under the same conditions

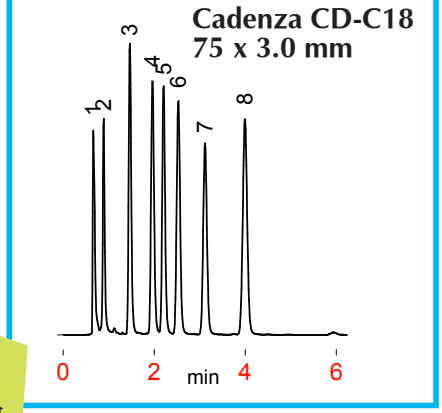
Rapid analysis

1/4 Eluent Sensitive

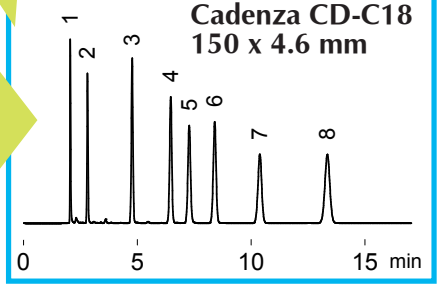


Higher resolution

Standard size for the next



The power of 28,000 plates



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A Revolution in Column Efficiency

Cadenza CD-C18 was designed for the next generation of LC separation. While providing the same column efficiency as columns of a traditional size, Cadenza offers shockingly improvements in your results.

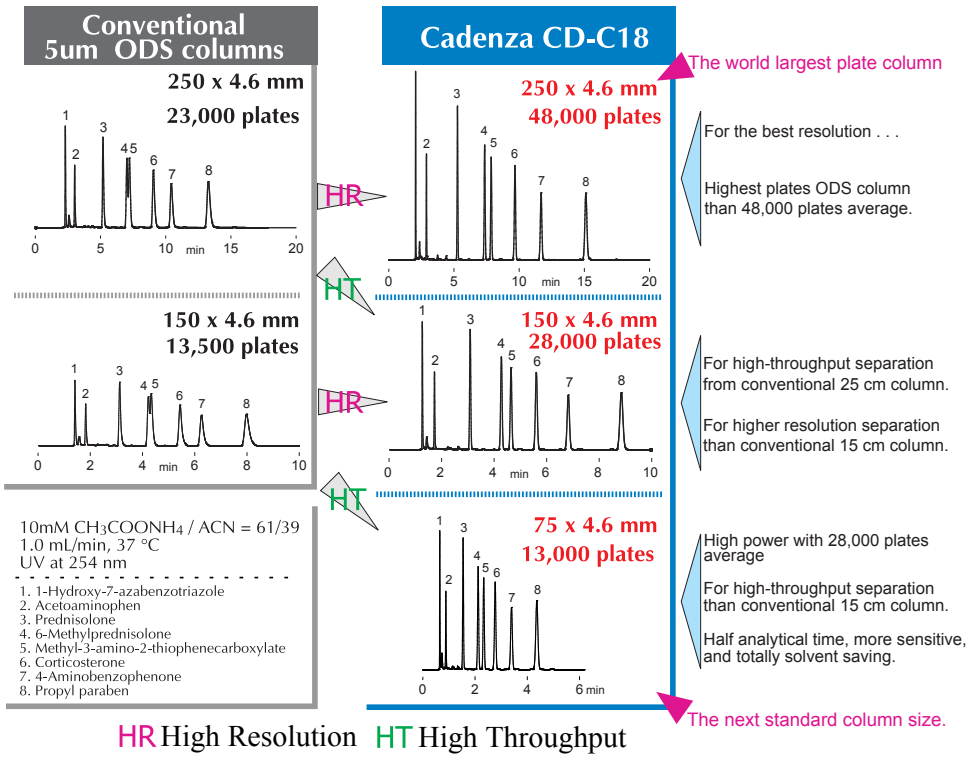
High Resolution

As shown in the examples above, Cadenza provides twice the efficiency of the same size conventional columns. High plate numbers and improved recognition of molecules in the stationary phase mean Cadenza users can expect previously unseen performance in the same size column. The 250 x 4.6mm column in particular, offers an average resolution of 48,000 plates/column.

High-Throughput

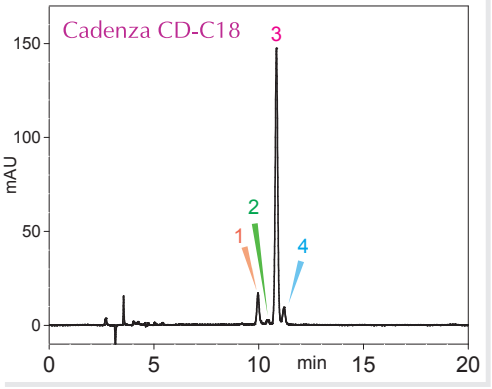
Cadenza is an authority on another trend in LC separation, high-speed analysis. Namely, Cadenza offer the same or better quality separation results at a shorter length. This results in three major benefits:

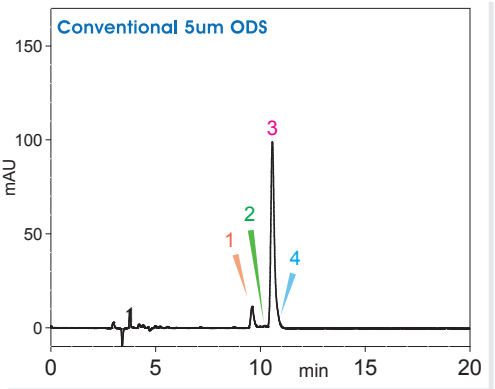
- Shorter analysis time
- Less solvent use
- More efficient methods development process

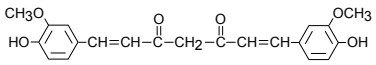


HR High Resolution HT High Throughput

Impurity Detection through Powerful Separation







3 curcumin

250 x 4.6 mm
acetonitrile / water / formic acid
= 55 / 45 / 0.05
0.8 mL/min, 37 °C, UV at 220 nm

This comparative data proves the high-efficiency of Cadenza CD-C18's separation.

Curcumin the main ingredient found within turmeric. When analyzing the market reagent curcumin, a number of impurities are detected as shown above. Cadenza CD-C18 clearly uncovered three impure ingredients. Under the exact same conditions, a conventional ODS column did not even detect the impurity shown in peak #2. Morever, peak #4 overlapped with the curcumin peak. This level of separation is unsatisfactory.

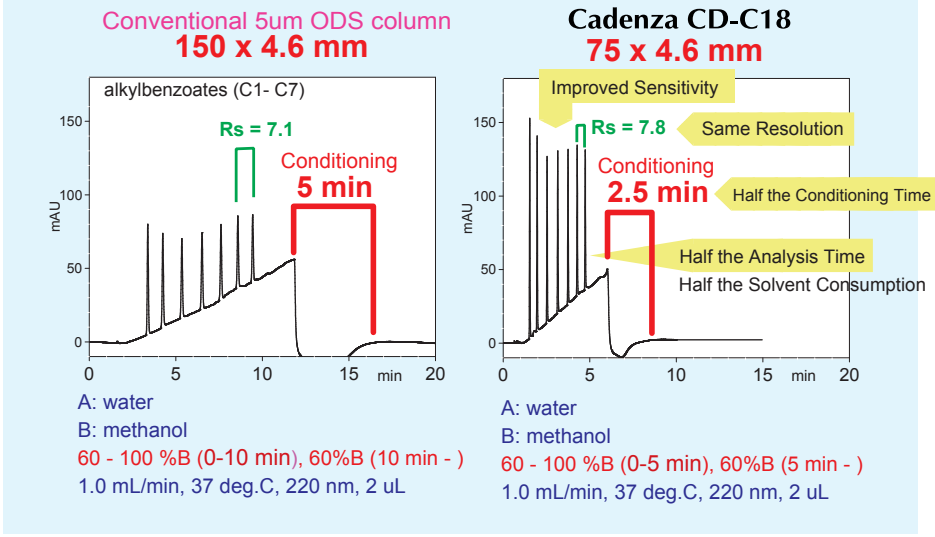
A high-resolution column is essential to check for the impurities in natural products and compounds. Cadenza CD-C18's 250 x 4.6 mm column proudly offers our users the revolutionary power of 50,000 plates per column, twice the number found in standard columns.

For the ultimate separation, Cadenza CD-C18 is at your service.

The next-generation standard in high-throughput columns

75 x 4.6 mm

High-Conditioning---Improved Degree of Separation---Better Sensitivity---Less Solvent Use



Cadenza CD-C18 has revolutionized the conventional standard size 150 x 4.6mm column.

The chromatograph above is a condensed version of Cadenza's special features. Namely, Cadenza offers the same degree of separation while cutting analysis and conditioning time in half.

It is even simple to switch conditions for gradient analysis. Gradient time is reduced by 50% while the gradient's initial and final concentration remains the same. In the case of isocratic analysis, the same conditions apply. Cadenza offers more efficient separation with the same resolution by fully realizing the power of a 3um particle column design.

The Cadenza CD-C18 75 x 4.6mm can replace your conventional 150 x 4.6mm by offering the following merits:

- Similar resolution
- Half the analysis time
- Improved concentration sensitivity
- Half the conditioning time
- Half the solvent use

Even compare it with other 3um columns. Cadenza offers an average of 13,000 plates, a number similar to that of a 5um ODS column and that greatly exceeds other 3um ODS columns.
The same separation quality with a shorter column. That is Cadenza, the next-generation ODS column

pH Stability in the Stationary Phase

This data shows the pH stability using Cadenza in the stationary phase.

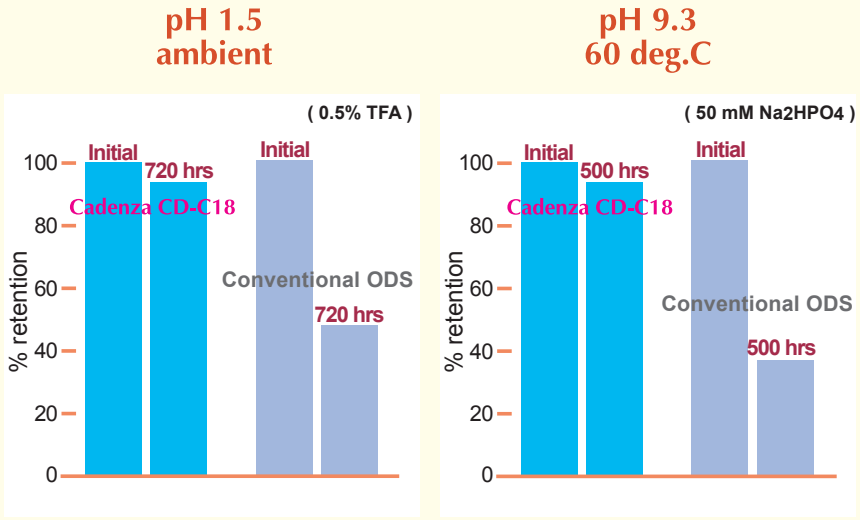
In the water eluent of acids and alkalis not including organic solvents, we measured the rate of change in column durability after a constant period of exposure to solvent.

Conventional ODS columns showed a huge change in column life with acidic and alkali eluents. The cause of this is hydrolysis degradation of the stationary phase ODS and endcapping functional group. The pH used in the experiment was outside that used with conventional columns. These severe conditions were not applicable to these columns.

Cadenza CD-C18, however, can handle these severe conditions. There is little change in retention and there is a high binding strength despite the stationary phase's difficulty in handling hydrolysis. This is one of many points proving the power of polymeric endcapping, the most superior design technology for the stationary phase.

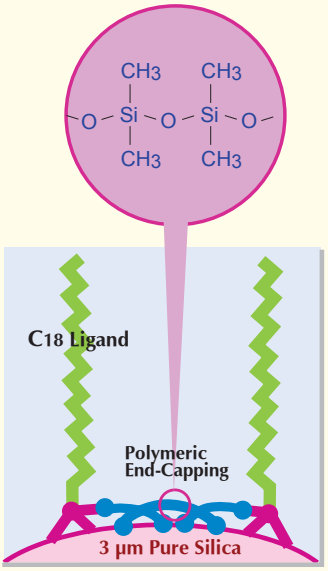
By using Cadenza CD-C18, you will no longer face the traditional problems moving from low pH to high pH in the mobile phase. Finding a new durability in your columns, discover the Cadenza advantage.

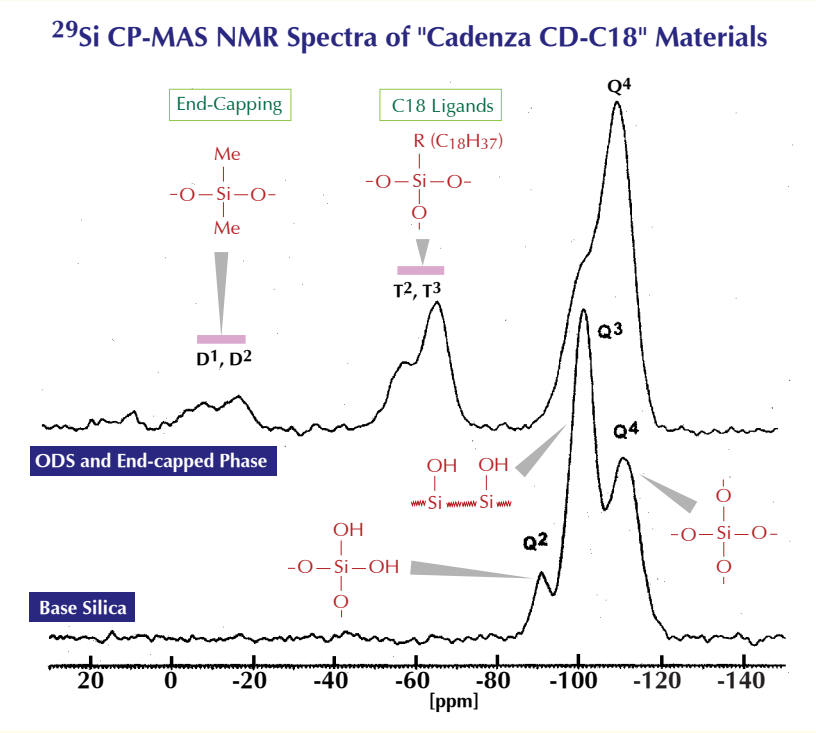
Enlarge the pH range compared with conventional columns



Cadenza CD-C18 Phase Structure

Cadenza CD-C18
3µm, porous pure silica
C18 ligands
End-capped



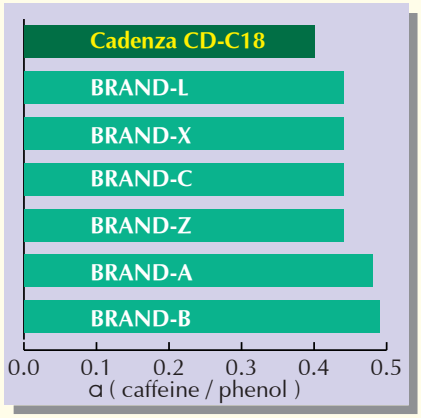


Courtesy of Prof. Dr. Klaus Albert, Univ. of Tübingen

The stationary phase structure model of Cadenza CD-C18 has a novel end-capping technology called "**Polymeric End-Capping**". This unique phase structure is proved by ^{29}Si CP-MAS NMR spectra.

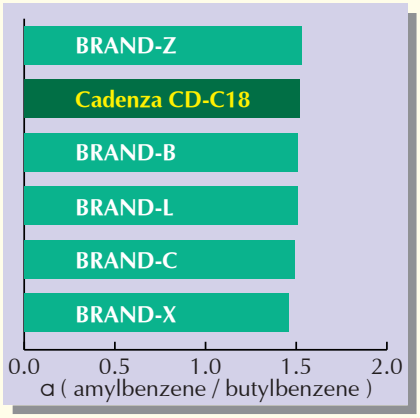
Chromatographic Characteristics

Hydrogen Bonding Capacity



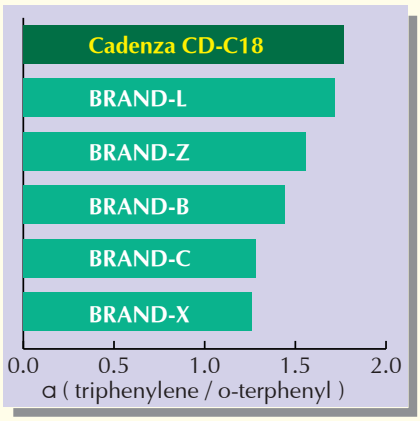
methanol / water = 30 / 70

Hydrophobicity



methanol / water = 80 / 20

Steric Selectivity



methanol / water = 80 / 20

Cadenza CD-C18 is designed to provide similar hydrophobisity to other conventional ODS phases. In contrast, it designed to show lower hydrogen bonding capacity and higher steric selectivity than others. These characteristics provide good performance for molecular recognition.