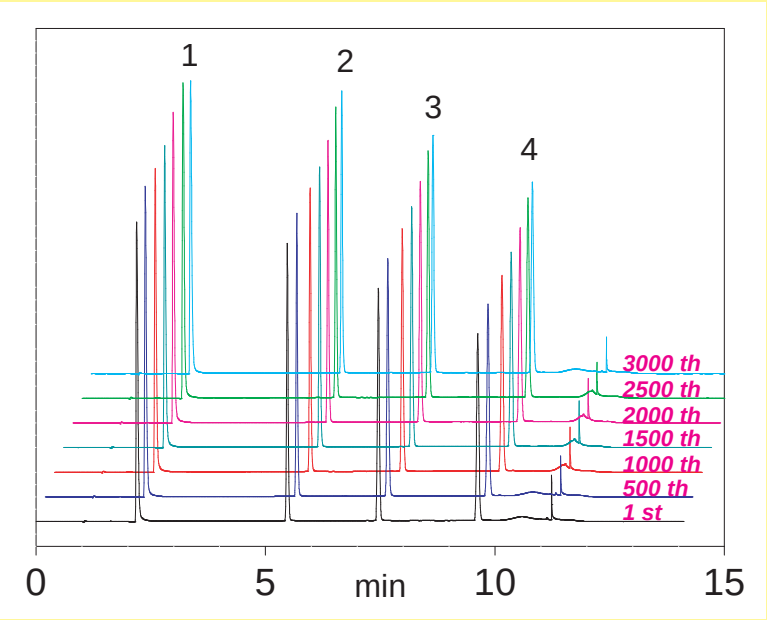
Cadenza CD-C18 75 x 4.6 mm Technical

Column Durability in Gradient Analysis

Experience Gradient Analysis 3000 Times with One Column

Cadenza CD-C18 **75 x 4.6 mm**



1 N-acetylprocainamide

2 carbamazepin

3 o-phenylphenol

4 diphenyl

Run No.	Rs(2/1)	N(4)	Pressure MPa
1	35.3	176000	8.2
500	35.9	175000	8.5
1000	35.7	175000	8.7
1500	35.9	174000	8.6
2000	33.0	173000	9.0
2500	35.6	176000	8.9
3000	35.8	176000	9.1

A: 5 mM NaH_2PO_4, B: acetonitrile
10 - 90%B (0-10 min), 10 %B (10-15 min)
1.0 mL/min, 37 °C, 260 nm

This data shows Cadenza CD-C18's durability through gradient analysis.

Gradient analysis is a stressful elution mode for columns. Researchers are concerned by column deterioration through a change in the column's packing situation especially in situations such as screening where a wide range of organic solvent conentration is used.

Cadenza CD-C18 75 x 4.6mm offers the same features (high speed, high sensitivity and low solvent use) as a conventional 150mm column. We examined the column durability through repeated analysis using gradient elution. There was no column deterioration after 3000 injections under optimized conditions. The basic compound's separation (Peak 1, 2) was also excellent. Under these conditions, it is possible to achieve a stable analysis through a non-stop 24-hour experiment over more than a month.

This analysis consumed about 50L in the mobile phase (acetonitrile 25L). If we assume that 1L of acetonitrile costs $40, the entire experiment would consume $1000 in solvent. This cost is much higher than the $400 in column cost. Using a 150mm column, the solvent consumption will double to $2000 and run time will double to 2 months.

Cadenza CD-C18 offers you half the solvent cost in half the time with the same quality of results.