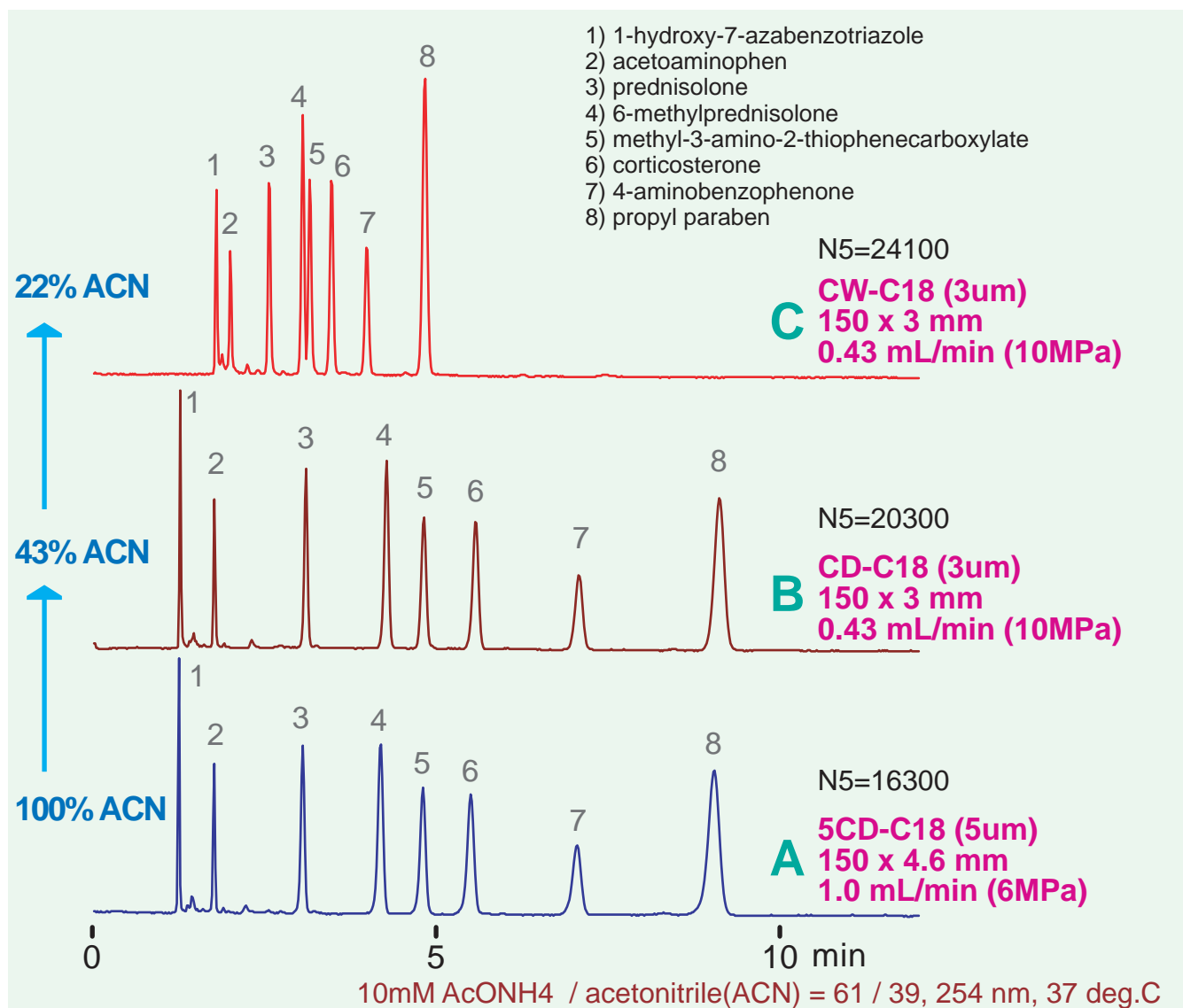


Cadenza CW-C18
Cadenza CD-C18
Cadenza 5CD-C18

150 x 3 mm
150 x 4.6 mm

Technical

Reducing organic solvent consumption



The above figure shows that organic solvent consumption for conventional 150 x 4.6 mm (5µm, ODS) can be reduced by the following methods.

1) By 3mm I.D. x 150 with 3µm particle (Chromatogram-B)

Chromatogram-B shows that the same separation on 5CD-C18(5µm) can be obtained on CD-C18(3µm) by using a flow rate that is proportional to the ratio of the cross sectional area of the columns (1mL/min for 4.6mm to 0.43mL/min for 3mm). Additional benefits to using 3µm particle include: and increase in column performance, equivalent separation, and a reduction in solvent consumption (less than half of the initial volume).

2) By Cadenza CW-C18 with 3µm particle and 30nm wide pore (Chromatogram-C)

Even though the separation properties may be somewhat different, it should be an effective method - provided that the resolution between peaks is large. Compared to CD-C18 (12nm pore size) and under the same analytical conditions, analysis with CW-C18 (30nm pore size) results in faster elution (approximately half the analysis time). In addition, solvent consumption is decreased to 1/5 of initial amount by utilizing the 3mm I.D.

Both methods are easy to implement and reduce organic solvent consumption for conventional HPLC systems. Moreover, these methods do not require UHPLC systems or sub2µm columns.

Note: low dispersion systems (e.g. semi-micro LC) may be required if such high plate counts are required.