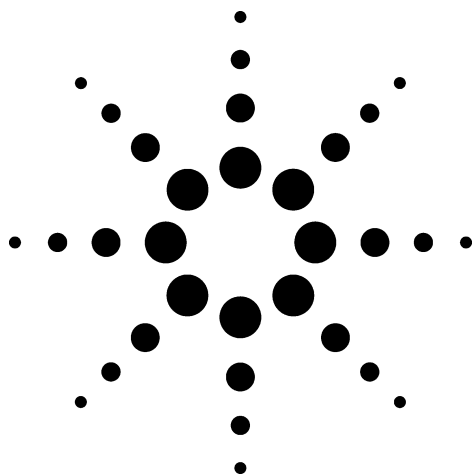




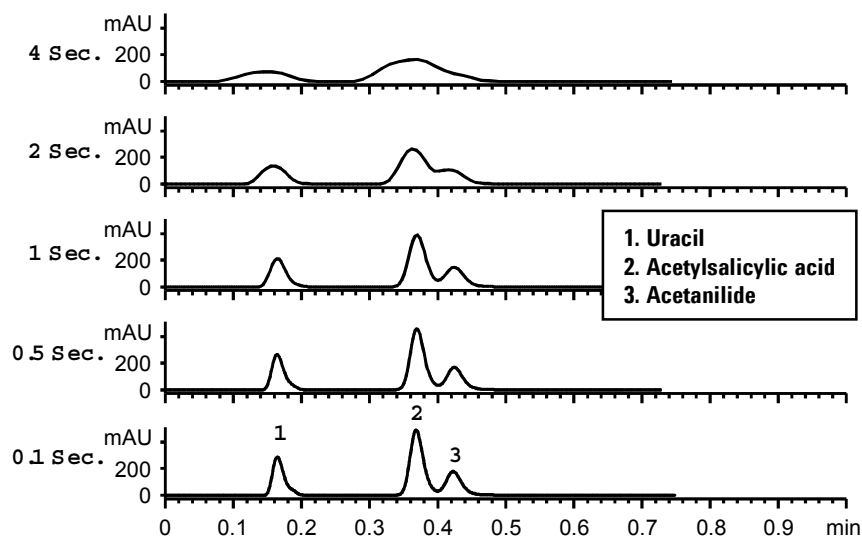
Importance of Detector Response Time When Using Low-Volume Columns

Application
Technical
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Emphasis is placed on minimizing extra-column volume when using LC/MS columns for improved chromatographic performance. Another factor that influences performance is detector response-time. Data collection rate must also be increased appropriately, and these functions are often coupled in a computer-controlled system. This parameter can be overlooked because method parameters in popular LC software are optimized for 4.6 x 150 mm-size columns. Routine analyses and method development use "analytical"-size columns. Consequently, one may forget to change the default software response-time after installing low-volume columns.

Below is a separation on an Agilent ZORBAX 4.6 x 15 mm low-volume column with various response-time values. Note the poor results obtained with a typical two-second response time. Don't jump to conclusions and blame the column or extra-column volume for poor chromatography. Correct the response time for better chromatograms.

Response Time



Conditions:
LC: Agilent 1100
Column: ZORBAX SB-C18, 4.6 x 15 mm (3.5µm), Agilent P/N 831975-902
Mobile Phase: ACN : 1% Formic acid (32:68)
UV: 254 nm; Flow: 1.0 mL / min.; 30°C
Inj. Vol.: 5 µL

Highlights

- Optimize response time to produce better chromatograms.
- Under one-minute analyses are possible with Agilent ZORBAX low-volume columns.
- Narrow, tall peaks increase limit of detection.



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