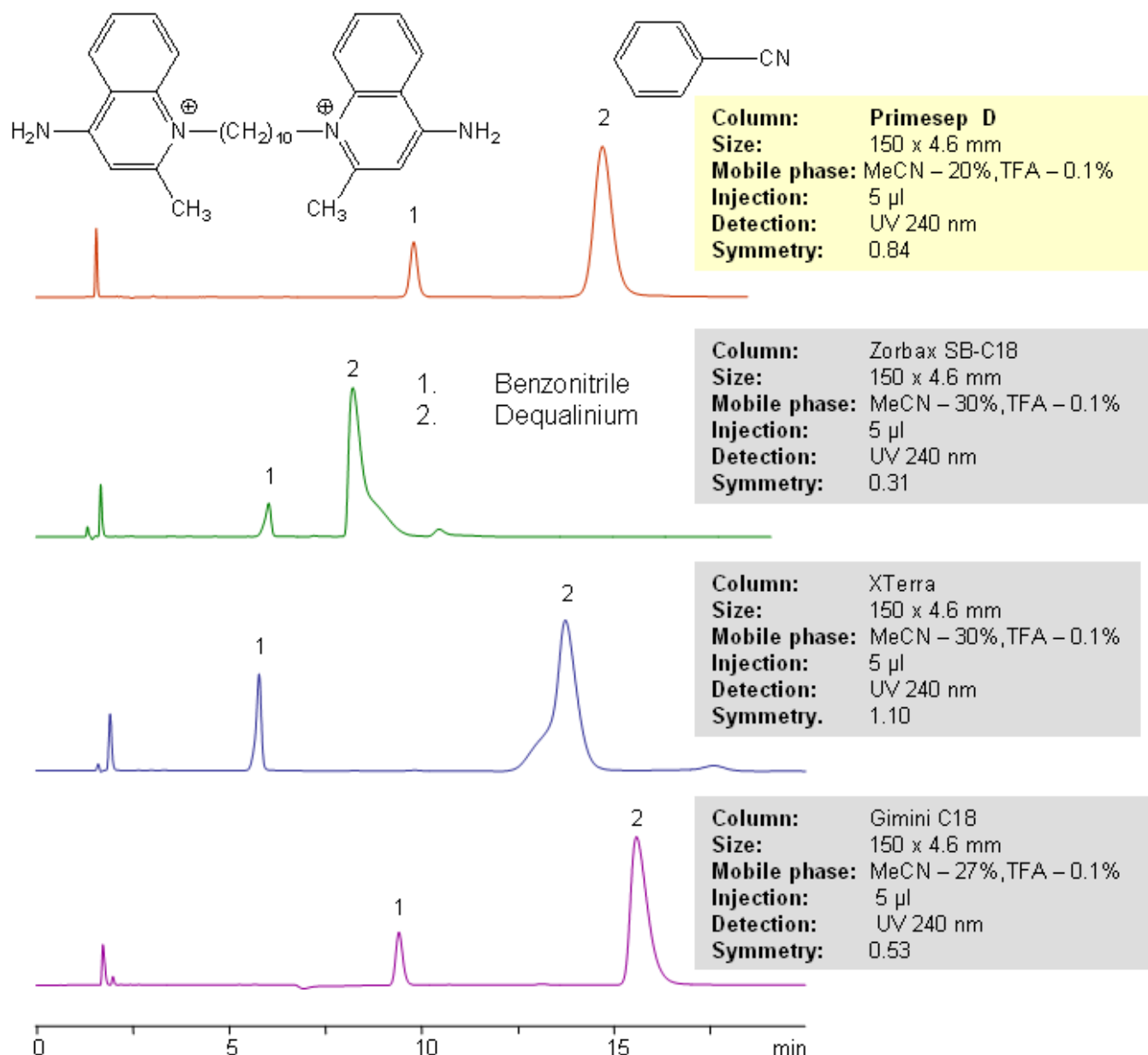


# HPLC Separation of Dequalinium and Benzonitrile on Different Columns

<https://sielc.com/Application-HPLC-Separation-of-Dequalinium-and-Benzonitrile-on-Different-Columns>

## Chromatogram



## Description

Dequalinium, or Dequadin, is an antiseptic and disinfectant. It consists of two quaternary amines connected by C10 hydrophobic chain. It's a strongly basic compound that is hard to analyze on reverse phase column and obtain good peak shape. Compound shows a significant tailing (symmetry below 0.5 and USP tailing factor of over 2) due to interaction of quaternary groups with residual silanols. In this HPLC application dequalinium is analyzed on Primesep D mixed-mode column with perfect symmetry and high efficiency. Primesep D column has hydrophobic chain and a basic group close to the surface of silica gel. This group provides shielding effect and prevents interaction between acidic silanol groups and quaternary amines of dequalinium. Method can be used for analysis and quantitation of hydrophobic amines when peak shape is not satisfactory on traditional HPLC columns. Relative comparison of several modern LC columns (Zorbax from Agilent, XTerra from Waters and Gemini from Phenomenex) shows that Primesep D mixed-mode column can be successfully used in determination of hydrophobic quaternary amines and diamines. If a compound is retained on C18 column with poor peak shape, switching to mixed-mode column can provide a valuable alternative. Benzonitrile is used to ensure high quality of packing and good peak shape for neutral analytes.

Method uses trifluoroacetic acid as an additive to the mobile phase. Other acids and buffers can be used depending on the detection technique.

#### Method Parameters

<b>Mobile Phase</b>	MeCN/H <sub>2</sub> O
<b>Buffer</b>	TFA
<b>Detection</b>	UV, 240 nm
<b>Class of Compounds</b>	Quaternary amines
<b>Analyzing Compounds</b>	Dequalinium, Benzonitrile

#### HPLC Column Used

**Primesep D, 4.6×150 mm, 5 µm, 100A**

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