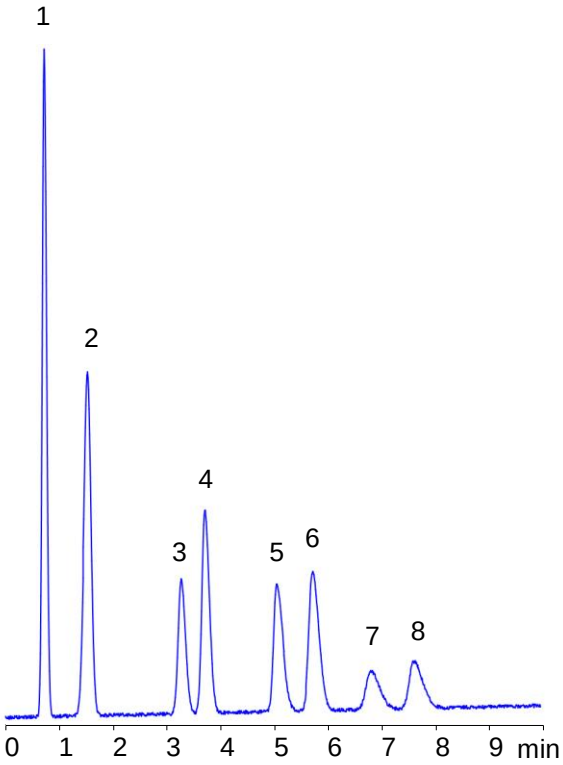
HPLC Analysis of Eight Aminoglycosides on Amaze TCH Column with LC/MS Compatible Conditions



1. Erythromycin
2. Spectinomycin
3. Hygromycin B
4. Streptomycin
5. Amikacin
6. Kanamycin
7. Tobramycin
8. Neomycin

Column: Amaze TCH
Dimensions: 3.0x100 mm, 5 um, 100A
Mobile phase: A: 75% ACN with 5 mM AmFm pH 3
B: 40% ACN with 20 mM AmFm pH 3
from 100% A to 100% B in 12 min
Flow rate: 0.6 ml/min
Detection: ELSD, 45^{o}C

Application Notes

Analysis of aminoglycosides is one of the most challenging tasks in drug analysis. Very polar with different numbers of basic groups, aminoglycosides produce almost no retention in reversed-phase chromatography without ion-pairing reagents. They require high buffer concentration in ion-exchange chromatography, which is not compatible with mass spectrometry. Aminoglycosides also produce poor peak shape in single mode HILIC chromatography.

We have developed a unique HILIC mixed-mode stationary phase that can be used for LC/MS application analysis of aminoglycosides. Amaze TCH (Total Control HILIC) is a quat-modal HPLC column that retains and separates compounds by HILIC, cation-exchange, anion-exchange, and chelating mechanisms. The column can retain and separate a very broad range of polar neutral, polar acidic, polar basic, hydrophobic acidic, and hydrophobic basic compounds. Retention time is controlled by the amount of ACN, buffer pH, and buffer concentration. Buffer pH can be effectively used to shut down or enhance ion-exchange properties of the column.