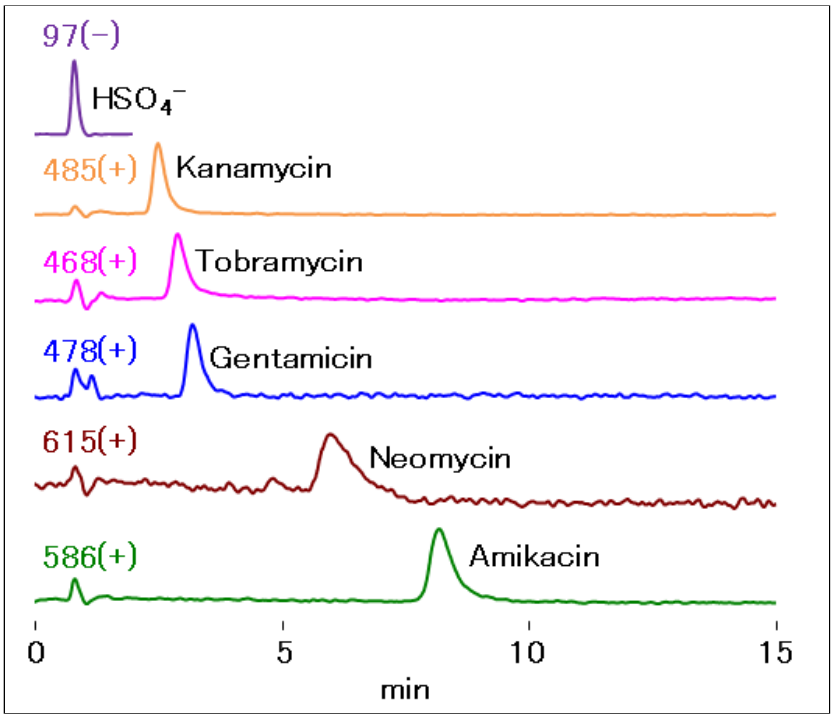
LC/MS Analysis of Aminoglycoside Antibiotics (VC-50 2D)

Aminoglycoside antibiotics have four amino groups making them highly hydrophobicity. When they are analyzed by reversed phase mode, it is necessary to add an ion pair reagent into the eluent. These antibiotics do not have UV absorption, so LC/MS method is suitable for high sensitivity analysis of them. In this application, various aminoglycoside antibiotics were analyzed using HILICpak VC-50 2D, a polymer-based HILIC mode column, in cation exchange mode with LC/MS detection. Since alkaline conditions suppress the dissociation of amino groups in the molecules, the cation exchange between the antibiotics and gel materials weakens, allowing the antibiotics to elute.



Sample : Aminoglycoside antibiotics 0.1μg/mL (in H_2O), 20μL
Kanamycin sulfate
Tobramycin sulfate
Gentamicin sulfate
Neomycin sulfate
Amikacin dihydrate

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Column       : Shodex HILICpak VC-50 2D (2.0mmI.D. x 150mm)
Eluent       : (A); 1.5% NH3 aq./(B); CH3CN
               High pressure linear gradient ;
               (B%) 30% to 10% (0 to 5min), 10% (5 to 15min)
Flow rate    : 0.3mL/min
Detector     : ESI-MS SIM
Column temp. : 40°C
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