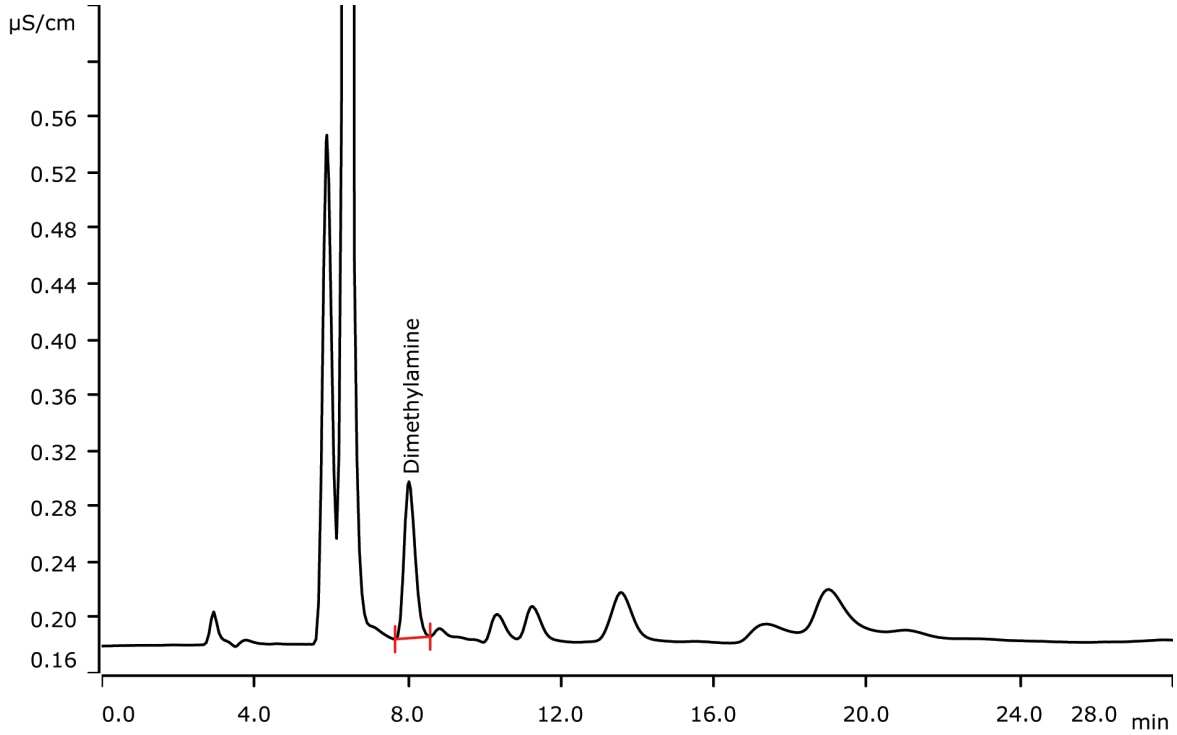
IC Application Note CS–008

Determination of dimethylamine in meropenem applying sequential suppression



Meropenem is used to treat a wide variety of bacterial infections. It is known as a carbapenem-type antibiotic, and, as a ß-lactam antibiotic, it works by inhibiting the cell wall synthesis of bacteria. Dimethylamine is a precursor in meropenem production and thus occurs as an impurity in the final product. It is determined on a Metrosep C Supp 1 - 250/4.0 column with conductivity detection after sequential suppression.

Results

Cation	Concentration [mg/kg]
Dimethylamine	116

Metrohm

Sample

Meropenem sample

Sample preparation

50 mg sample dissolved in 10 mL diluent and injected after filtration (0.2 µm)

Columns

Metrosep C Supp 1 - 250/4.0	6.1052.430
Metrosep C Supp 1 Guard/4.0	6.1052.500

Solutions

Eluent	3.0 mmol/L nitric acid 50 µg/L rubidium 15% acetonitrile
Suppressor regenerant	70 mmol/L sodium carbonate 70 mmol/L sodium hydrogen carbonate 20% acetonitrile
Rinsing solution	20% acetonitrile in ultrapure water
Diluent	10 mmol/L nitric acid

Analysis

Conductivity detection after sequential suppression

Instrumentation

940 Professional IC Vario ONE/SeS/PP	2.940.1500
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
MSM-HC Rotor C	6.2842.200

Parameters

Flow rate	1.0 mL/min
Injection volume	20 µL
P_{max}	15 MPa
Recording time	28 min
Column temperature	40 °C