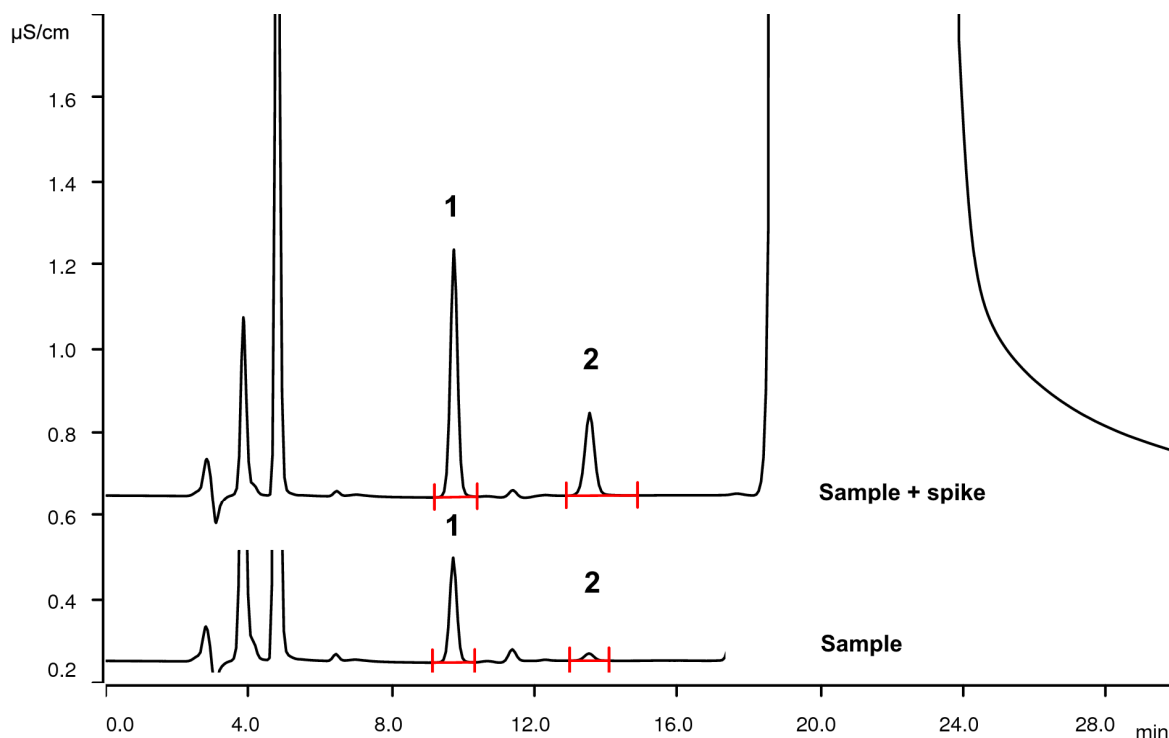


# Phosphite and phosphate in Pamidronate suppressed conductivity detection



Pamidronate is applied to treat osteoporosis by strengthening the bones. It is a bisphosphonate containing a primary amine group. Phosphite and phosphate are related compounds, which need to be quantified. USP requires the use of formic acid eluent with refractive index detection. But a standard IC procedure offers an alternative with better sensitivity. Phosphite and phosphate are analyzed with conductivity detection after sequential suppression.

## Results

Sample	Conc. in solution [mg/L]	Conc. spiked (with 1 mg/L) [mg/L]	Recovery [%]	Conc. in sample [g/kg]
1 Phosphite	0.818	1.836	101	0.327
2 Phosphate	0.132	1.045	92	0.053

Other peaks are not identified.

## Sample

Disodium pamidronate pentahydrate

## Sample preparation

25 mg of sample dissolved in 10 mL of ultrapure water.

## Columns

Metrosep A Supp 5 - 150/4.0	6.1006.520
Metrosep A Supp 5 Guard/4.0	6.1006.500

## Solutions

Eluent	3.9 mmol/L sodium carbonate 2.3 mmol/L sodium hydroxide 20% acetonitrile
Suppressor regenerant	100 mmol/L sulfuric acid
Rinsing	STREAM

## Analysis

Conductivity detection after sequential suppression

## Instrumentation

930 Compact IC Flex Oven/SeS/PP/Deg	2.930.2560
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020

## Parameters

Flow rate	0.7 mL/min
Injection volume	20 µL
P <sub>max</sub>	15 MPa
Recording time	30 min
Column temperature	30 °C

