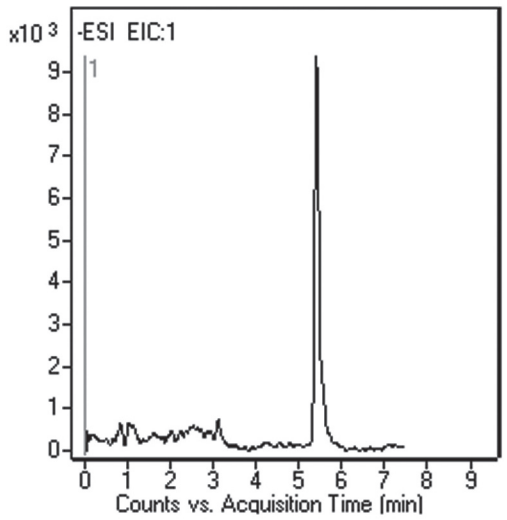
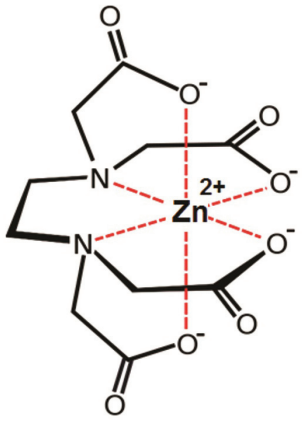
Zinc-EDTA Complex

No ion pair agents needed





Note: EDTA (ethylenediaminetetracetic acid) has been used to promote metal uptake from contaminated soil. As such, the ESI-MS technique described here can be used for the determination of Zn-EDTA complexes in soil samples.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150 mm

Mobile Phase: A: DI H_2O / 0.1% formic acid (v/v)
B: Acetonitrile / 0.1% formic acid (v/v)

Gradient:

time (min.)	%B
0	90
5	20
8	20
9	90

Post time: 2 min

Injection vol.: 1µL

Flow rate: 0.40 mL/min

Detection: ESI – NEG - Agilent 6210 MSD TOF mass spectrometer

Sample: A soil sample was spiked with Zn-EDTA complex at a level of 2000µm. After extraction with DI H_2O (shaking for 24 hours), the sample was filtered using a 0.45µm syringe filter (MicroSolv Tech Corp.) and diluted with acetonitrile 1:10 before injection.

Peak: Zn-EDTA complex 354.7 m/z

t_0: 0.9 min

Discussion

Using conventional analytical methods, retention of metal–EDTA complexes is accomplished using ion pair reversed phase chromatography. However, the ion pair agents used in the mobile phase are not compatible with mass spectrometry. In this LC-MS method using the Cogent Diamond Hydride column, only formic acid is needed in the mobile phase in order to obtain retention of a Zinc-EDTA complex. The figure shows an EIC of the analyte spiked in a soil extract matrix.

MANUFACTURED BY:
MICROSOLV TECHNOLOGY CORPORATION
9158 Industrial Blvd NE
Leland, NC 28451
p: 1.732.380.8900
f: 1.910.769.9435
customers@mtc-usa.com
www.Cogent-HPLC.com