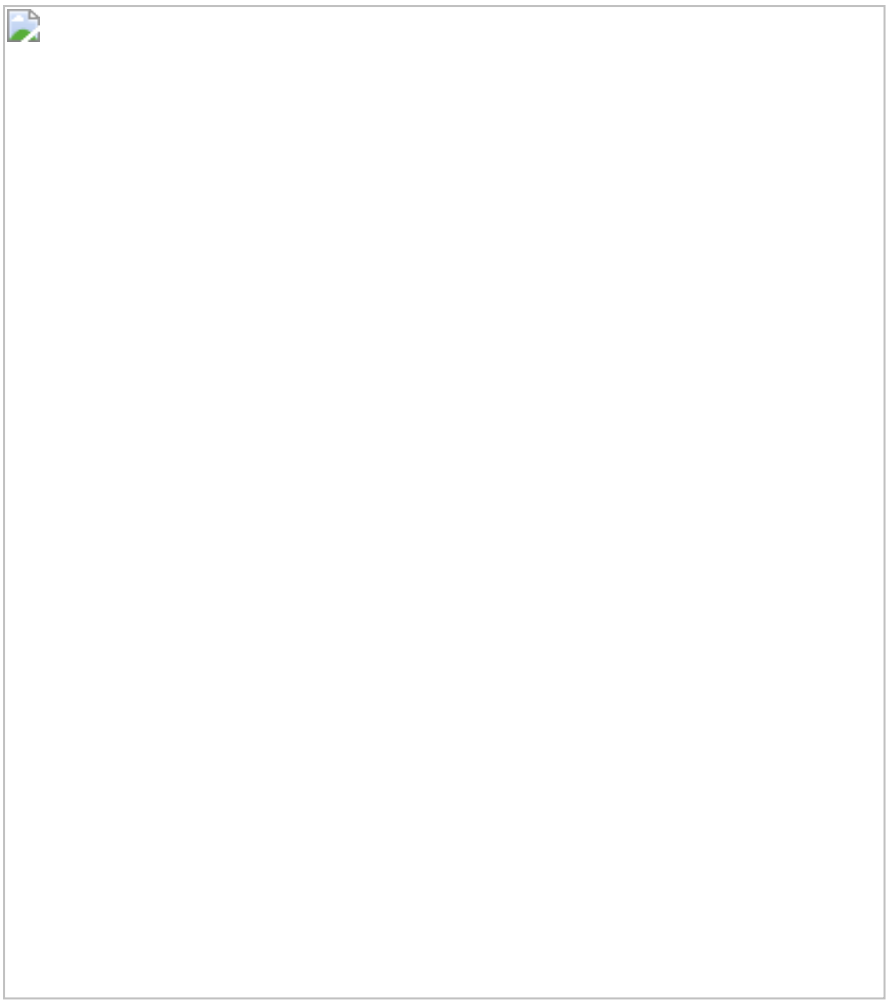
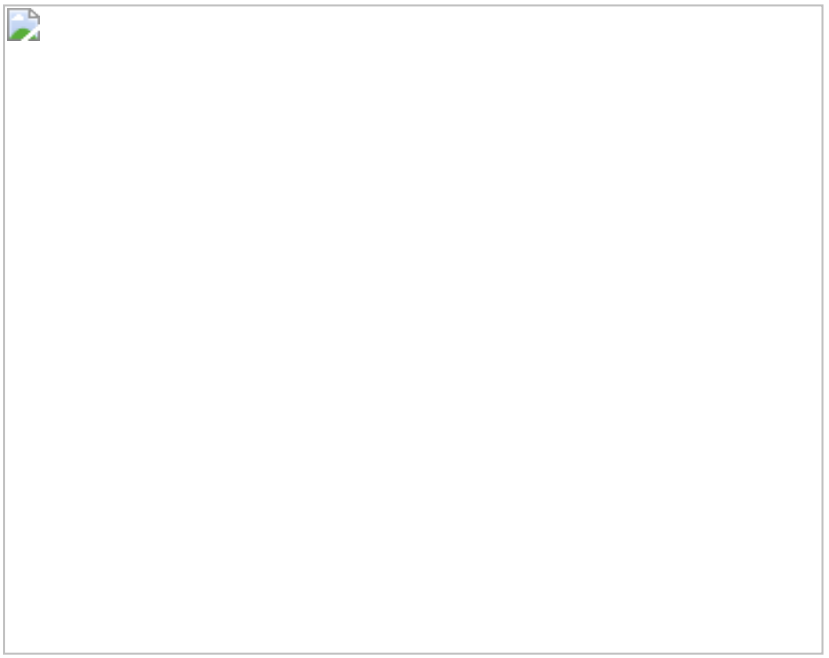
ADMA and SDMA Separation analyzed with ELSD- AppNote

Separation of Structural Isomers

ADMA (Asymmetric Dimethylarginine) and SDMA (Symmetric Dimethylarginine) are structural isomers and isobaric compounds, sharing the same m/z value. Separating these compounds is crucial, even when using LC-MS detection. While MS-MS detection can differentiate these compounds based on their distinct fragmentation patterns, the availability of such detection is not always guaranteed.

This method utilizes ELSD and demonstrates the separation of both compounds using the Diamond Hydride.





Peaks:

1. Unknown 2. SDMA 3. ADMA

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å
Catalog No.: 70000-10P
Dimensions: 4.6 mm x 100mm

Mobile Phase:
A: 50%DI water/10 mM ammonium formate, pH 4.9
B: Acetonitrile 90%/10% DI water+10 mM ammonium formate pH: 5.12
Injection vol.: 3µL
Flow rate: 0.5 mL / minute
Detection: ELSD, temp: 50^0C, Gain

Sample Preparation: 0.1 mg/mL ADMA + SDMA in 50:50 ACN:DI Water

Time (*minutes*)	%B
0	20
1	30
5	30
6	50
7	50
8	90
9	90
11	20
15	20

Note: *The method employed utilized a Reverse Phase chromatography gradient with a Cogent DH™.*
It is important to note that this method requires longer equilibration times—approximately 10 to 15 minutes—between runs to ensure reproducible results.

COGENT HPLC Columns™

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