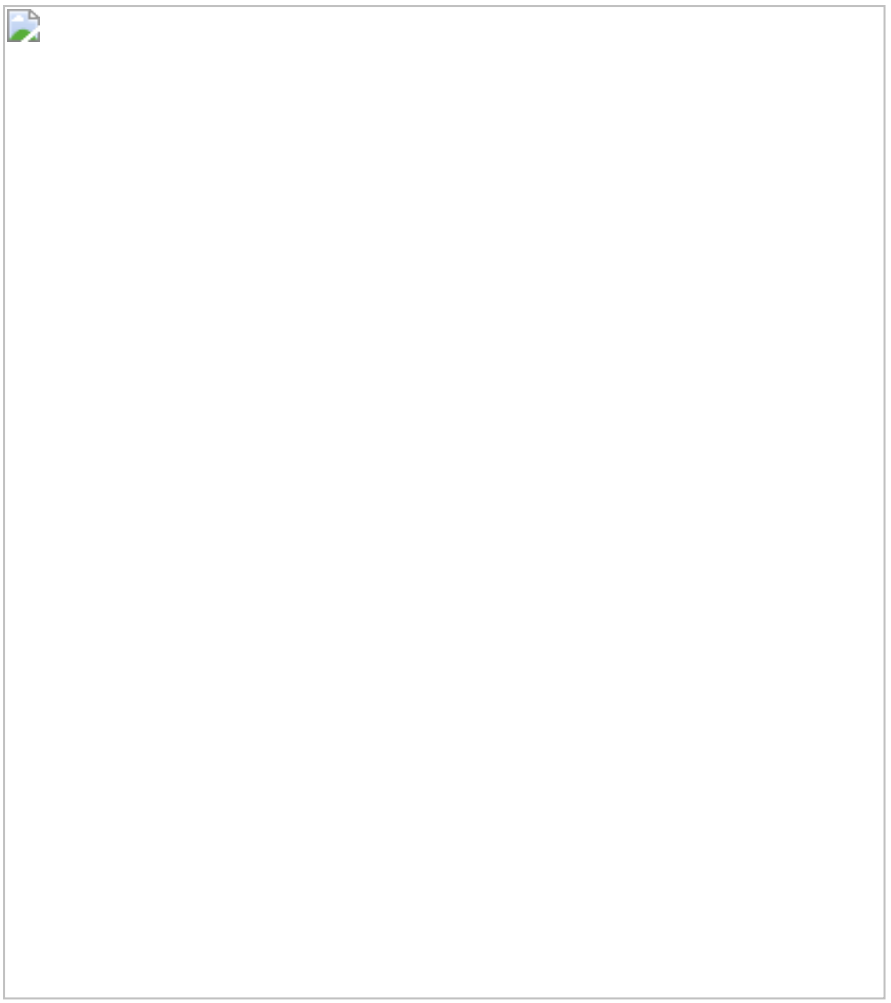
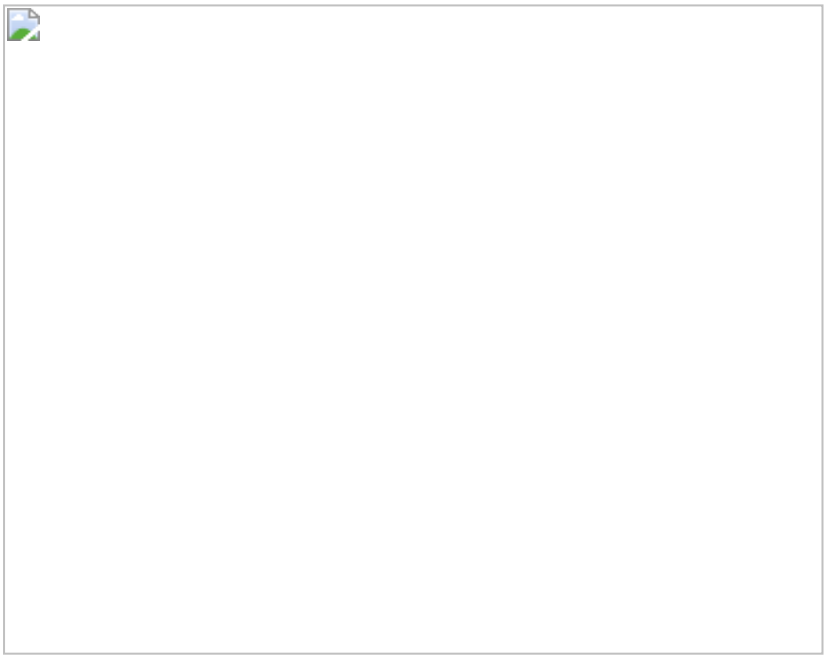
# ADMA and SDMA Separation analyzed with ELSD- AppNote

## 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: $50^0$C, 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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