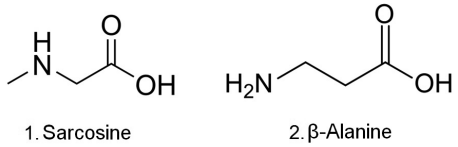
APPLICATION NOTES

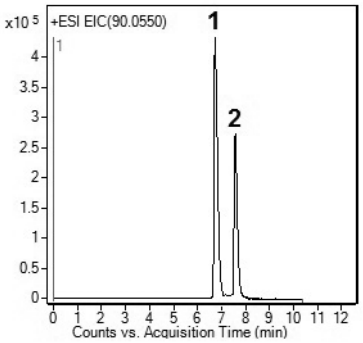
Cogent™ Diamond-Hydride

HPLC
ANP

Sarcosine

Separation of potential urine biomarker from isobaric ß-alanine





Notes:
When reversed phase columns were evaluated for their ability to separate sarcosine from beta-alanine, both compounds eluted at the solvent front and were not separated. To achieve separation, a very intensive sample preparation has to be employed (e.g. derivatization) when using RP methods.

Method Conditions

Column: Cogent Diamond Hydride™ 4µm, 100Å.
Catalog No.: 70000-15P-2
Dimensions: 2.1 x 150 mm
Solvents: A: 50% isopropyl alcohol/ 50% DI water/ 0.1% acetic acid
B: 97% acetonitrile/3% DI water/ 0.1% acetic acid

Gradient:

time (min.)	%B	time (min.)	%B
0	75	5	65
3	75	10	20
4	65	12	75

Post Tme: 5 min
Injection Vol.: 1 microL
Flow Rate: 0.6 mL/min
Temperature: 50 °C
Sample: 10 mg/L ea. of sarcosine and beta-alanine in 50:50 A:B.
Detection: ESI – POS - Agilent 6210 MSD TOF mass spectrometer

Discussion

This developed LC-MS method can separate sarcosine from beta-alanine in serum and urine samples without using labor-intensive sample derivatization. Since sarcosine is considered a potential biomarker for prostate cancer risk and aggressiveness, it is essential to resolve and accurately quantify this compound in the presence of isobaric (same m/z) beta-alanine. This objective is achieved using a Cogent Diamond Hydride™ column and a simple gradient method presented in this application note. The developed method is sensitive, specific, quantitative, and reproducible (%RSD = 0.1). It can be used in large scale studies with numerous samples (high throughput of the method due to simple sample preparation).

For more information visit www.MTC-USA.com

Cat. No.	Description
70000-15P-2	Cogent Diamond Hydride™ HPLC Column, 100A, 4µm, 2.1mm x 150mm

MICRO SOLV™
www.MTC-USA.com • 1-732-578-1777