



Technology Offer

Fast and accurate determination of L-arginine and its methylated metabolites in biological fluids by HPLC-tandem mass spectrometry

Nitric oxide (NO) is synthesized in endothelial cells from the substrate arginine (ARG) by the enzyme endothelial nitric oxide synthase (eNOS). The production rate of NO is a key factor for endothelial and cardiovascular functions. eNOS is inhibited by the endogenous arginine metabolite asymmetric dimethylarginine (ADMA). Consequently, an increased concentration level of ADMA and especially an increased ADMA/ARG ratio leads to deficiency in endothelial NO production and a subsequent loss in endothelial functionality.

This is the case in many diseases such as renal insufficiency or diabetes mellitus. In this context, the determination of ARG and ADMA to identify cardiovascular risks becomes more and more important.

Here we present a fast and accurate method to quantify ARG and ADMA together with its structurally related compound symmetric dimethylarginine (SDMA), utilizing isotope dilution two stage mass spectrometry.

Advantages

- Method is rugged
No matrix effect on arginine and ADMA due to the use of isotopic labeled internal standards
- Method is selective
No interference from endogenous substances
No cross-talk between ADMA and SDMA or between the internal standards and the analytes
- Method is fast
Only minimal sample preparation efforts
Fast chromatography
- Method is cheap
No usage of expensive solid phase extraction
Long service life of analytical column
- Method is flexible
Procedures can be easily adjusted for analysis of urine or cell culture supernatants

Commercialization

We are seeking to establish collaboration and licensing this exciting technology.

relationships to develop

Patent

Patent granted in DE, EP and US.

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