



Nucleosides, Nucleotides & Nucleic Acids >

Volume 25, 2006 - Issue 9-11

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Liquid Chromatographic/Mass Spectrometric Procedure for Measurement of NAD Catabolites in Human and Rat Plasma and Urine

E. M. Slominska, P. Adamski, M. Lipinski, J. Swierczynski & R. T. Smolenski

Pages 1245-1249 | Published online: 22 Nov 2006

Cite this article <https://doi.org/10.1080/15257770600894725>



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Abstract

Monitoring level of the metabolites of the coenzyme NAD such as nicotinamide and its oxidized and methylated derivatives is important due to therapeutic applications of these compounds and monitoring of oxidative stress. We evaluated feasibility of using HPLC with electrospray ion-trap mass detection for single run separation and quantitation of all the NAD metabolites. We achieved good separation and retention of all the metabolites of interest using reversed-phase with ion-pairing. Single ion monitoring or tandem MS were used for detection and quantitation of the specific compounds with good linearity. The method was able to detect all the physiological

metabolites in plasma samples of rats and humans or in urine. However, full validation is necessary before this method could be routinely applied.

Keywords:

Nicotinamide

N-Methylnicotinamide

Poly(ADP-ribose) polymerase (PARP)

Liquid chromatography/mass spectrometry

Acknowledgments

This study has been supported by the Ministry of Science and Information Society Technologies of Poland (3 PO5B 118 25 and PBZ-KBN-101/T09/2003/17).

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