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

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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

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