

For LabSolutions™ LCMS

LC/MS/MS Method Package for Modified Nucleosides



LCMS-8060NX

Complete Analytical Method for the Quantitation of Modified Nucleosides Which is a Candidate Biomarker for COVID-19 Severity

RNAs (ribonucleic acids) are important compounds for protein synthesis, with some RNAs now known to be modified by enzymes.

Such modified RNAs are decomposed in the cytosol, with the original nucleic-acid bases reused and the modified portions secreted and later discharged from the body in urine. In recent years, measuring modified nucleosides has become extremely important in the research of various infectious diseases and other disorders.

The research group of Professor Kazuhito Tomizawa at Kumamoto University performed research indicating that modified nucleosides show a correlation to increase severity of COVID-19 symptoms.* In joint research based on those results, a rapid analytical method for the quantitation of specific modified nucleosides in blood serum and urine was developed.

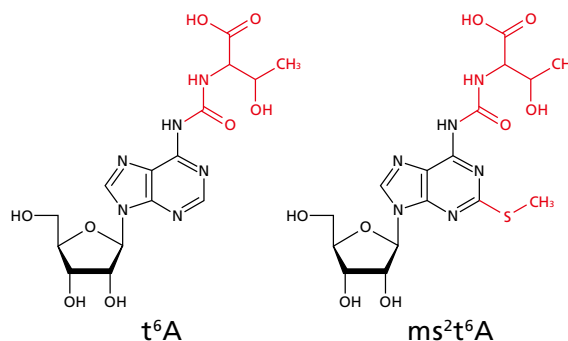
This Method Package provides optimized analytical conditions, including chromatographic separation and MS parameters, for the determination of two types of modified nucleosides and factors for normalization. It also includes examples of sample preparation methods for blood serum and urine samples. Consequently, this product can be used to analyze specific modified nucleosides in urine and blood serum without the need for time-consuming method development.

LC/MS/MS Method Package for Modified Nucleosides

- Sample preparation methods for blood serum and urine
- Analytical conditions for fast and highly robust chromatography (within six minutes)
- Optimized MS/MS parameters
- Methods compatible with LCMS-8000 series and LCMS-8060NX systems



Enables the determination of modified nucleosides from serum and urine in just **six minutes**



Method Package Provides a Total Solution from Sample Preparation to Analysis of Results

Sample preparation

HPLC separation

MS/MS analysis

Data processing

Results

LC/MS/MS Method Package for Modified Nucleosides

Analytical Conditions for Fast and Highly Robust Analysis

This method package includes the information necessary to perform rapid and robust LC/MS/MS chromatographic separation and analysis of two types of modified nucleosides and endogenous factors used to normalize results. Optimized LC conditions achieve high throughput with an analysis time of about six minutes.

Optimized MS/MS Parameters

Optimized parameters for LCMS-8000 series mass spectrometers enable trace analysis of modified nucleosides. If used with the LCMS-8060NX system, IonFocus lenses mitigate system contamination from matrix and prolong maintenance intervals.

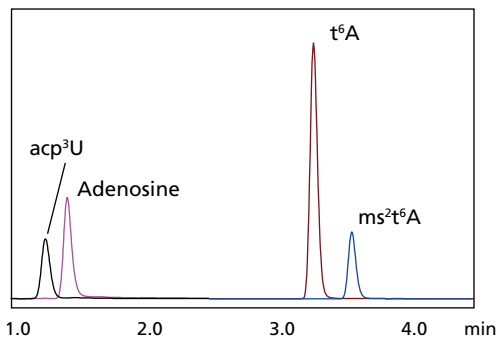
Sample Preparation Protocols for Blood Serum and Urine

The important step of sample preparation is also addressed in this method package. Protocols for both blood and urine samples are described, saving the laboratory considerable method development time.



List of Compounds Registered in LC/MS/MS Method Package for Modified Nucleosides

- ms^2t^6A (2-methylthio-N6-threonylcarbamoyladenine)
- t^6A (N6-threonyl-carbamoyladenine)
- acp^3U (3-(3-amino-3-carboxypropyl)uridine)
- Adenosine



Remarks and Precautions

LabSolutions LCMS Ver. 5.99 SP2 or later is required.

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