

Analysis of Uric Acid in Serum

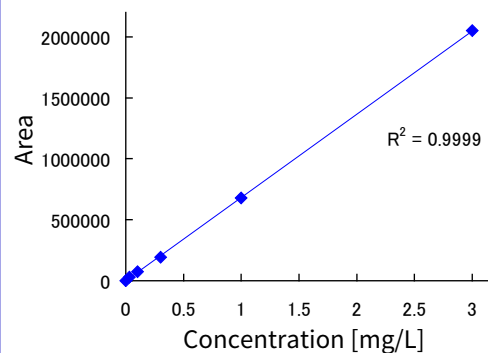
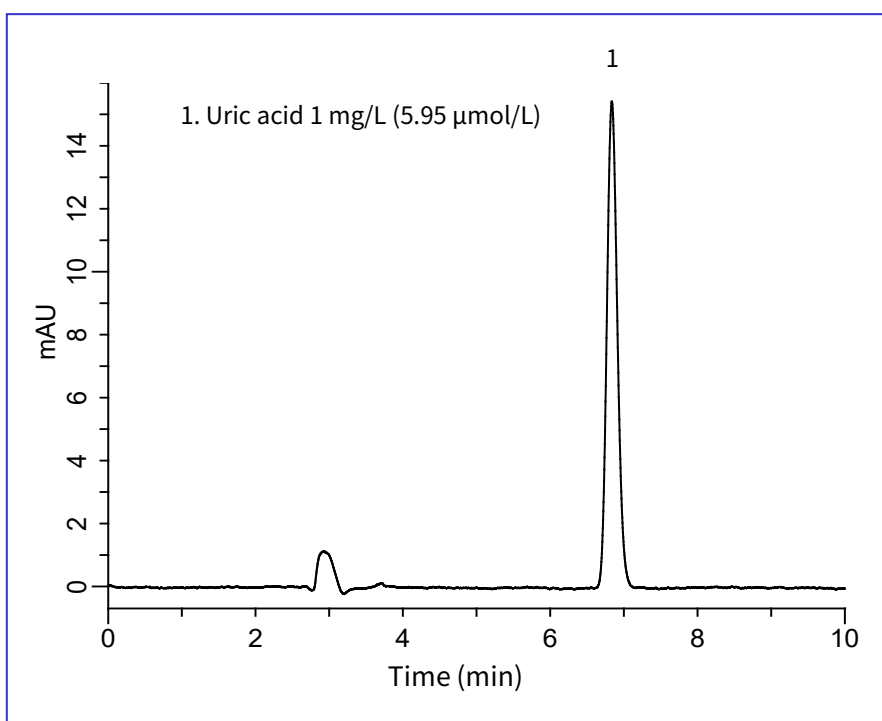
Uric acid is the final metabolite of the purines in the body. However, when uric acid is present in excess in the body, gout, arthritis, and gouty kidney are known to develop. Serum levels of uric acid (or uric acid levels), which are used to diagnose abnormalities in purine metabolism and kidney dysfunction.

The uricase-UV method is a practical reference method for the measurement of uric acid. Although many methods have been proposed, an HPLC method with UV detection provides accurate and sensitive measurement.

This application presents an analytical method using Inertsil ODS-4 analytical column based on the recommended method (Clinical Chemistry 22:300-307, 1993). Analysis of serum samples revealed a well-shaped uric acid peak within 10 minutes.

(C. Aoyama, K. Suzuki)

Example: Measurement of standard



Calibration curve for uric acid

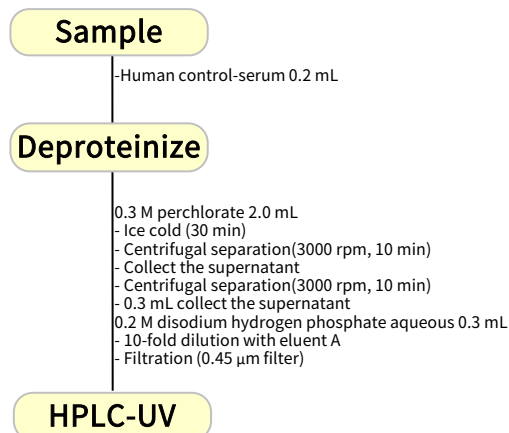
HPLC conditions

Guard column	: Cartridge guard column E Inertsil ODS-4 (5 μm, 10 x 4.0 mm I.D.)
Column	: Inertsil ODS-4 (5 μm, 250 x 4.6 mm I.D.)
Eluent	: A) 74 mM phosphate Buffer (pH 2.2)* B) CH ₃ OH A / B = 98 / 2, v/v
Flow rate	: 1.0 mL/min
Column temperature	: 40 °C
Detector	: UV 284 nm
Injection volume	: 50 μL

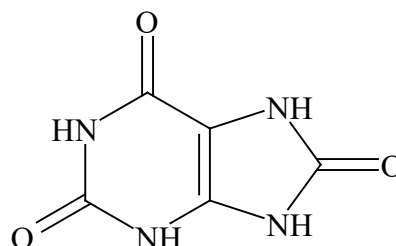
* 74 mM phosphate buffer (pH 2.2):
0.2 M disodium hydrogen phosphate (aqueous)
70 mL
and 0.5 M phosphoric acid (aqueous) 120 mL was
mixed with Ultrapure water and made up to a total
volume of 1 L.

Example of sample measurement

Example of pretreatment



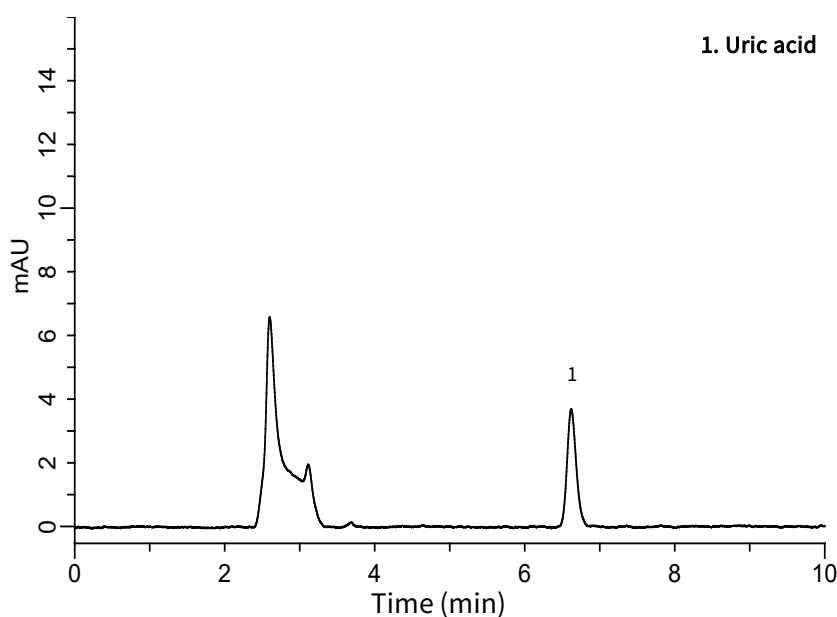
Structural Formula



Uric acid

Structures are created using Chemistry 4-D Draw which is provided by ChemInnovation Software, Inc.

Measurement of uric acid in human control serum



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