URIC ACID

Enzymatic, Colorimetic,

Diagnostic reagent for determination of Uric acid concentration.

Liquid, 2 Reagents — Store at 2℃ - 8℃
For in Vitro Diagnostic Use — Do not freeze

Cat. No.

A2340	URIC ACID	5X100ML
A2341	URIC ACID	5X50ML
A2342	URIC ACID	5X25ML

TEST PRINCIPLE

Uric acid in sample is oxidized to allantoin in presence of the enzyme uricase and H2O2 is generated. The H2O2 reacts with TOOS and 4-aminoantipyrine in the presence of peroxidase to form a violet dye. The intensity of color formed is proportional to the uric acid concentration and can be measured photometrically between 510 and 560 nm.

REAGENTS COMPOSITION

Composition in the test: phosphate buffer pH 7.0 50 mM, TOOS 0.34 mM, 4-aminoantypyrine 0.3 mM, uricase 450 U/l, POD > 2500 U/l, surfactant.

TEST PARAMETERS

Method:	Colorimetric, Endpoint, Trinder, Increasing Reaction, Enzymatic
Wavelength:	Hg 546 nm (510 - 560nm)
Temperature:	37℃
Sample:	Serum,Plasma,Urine (dilute urine 1:10 with physiological saline) Don't use EDTA.
Linearity:	up to 25 mg/dl

REAGENTS PREPARATION

If reagents are mixed in reduced quantities, mix 9 parts of reagent 1 with 1 part of reagent 2. Stability of working reagent: ≥ 90 days at 2-8℃, away from light sources. Stability of unmixe d reagents: up to expiration date on labels at 2-8℃; Stability si nce fi rst opening of vials of unmixed reagents: ≥ 60 days at 2-8℃.

PRECAUTIONS

Reagent may contain some non-reactive and preservative components. It is suggested to handle carefully it, avoiding contact with skin and swallow.
Perform the test according to the general "Good Laboratory Practice" (GLP) guidelines.

SPECIMEN

Serum, plasma heparinate. Oxalate, citrate and fl uoride could yeld a small decrease of uric acid. Urine. Uric acid is stable 5 days at 4-25℃. Dilute urine sample 1:10 with deionized water .

TEST PROCEDURE

Bring reagent, standard and sample to room temperature or 37℃.
Sample Start

Pipette into test tubes	Reagent Blank Tube	Standard Tube	Sample Tube
Working reagent	1000 µl	1000 µl	1000 µl
Sample	-	-	25 µl
Standard	-	25 µl	-
Mix, incubate at 37℃ for 5 minutes. Read absorbanc es of standard (As) and samples (Ax) against reagent blank.			

CALCULATION

Serum/plasma sample: uric acid mg/dl = Ax/As x 5 (standard value) Random urine sample: uric acid mg/dl = Ax/As x 5 x 10 (standard value and dilution) 24 hours urine sample (uric acid mg/24h): uric acid mg/24h = Ax/As x 5 x 10 x diuresis (dl) (standard value, dilution and diuresis in dl)

UNIT CONVERSION

mg/dl x 59.4 =µmol/L

LINEARITY

the method is linear up to 25 mg/dl.
If the value is exceeded, it is suggested to dilute sample 1+9 with saline and to repeat the test, multiplying the result by 10.
Sensitivity/limit of detection (LOD)
the limit of detection is 0.16 mg/dl.

INTERFERENCES

no interference was observed by the presence of:
hemoglobin ≤ 150 mg/dl
bilirubin ≤ 12 mg/dl
lipids interference is observed

Precision

intra-assay (n=10)	mean (mg/dl)	SD (mg/dl)	CV%
sample 1	4.60	0.04	0.90
sample 2	10.72	0.04	0.40
inter-assay (n=20)	mean (mg/dl)	SD (mg/dl)	CV%
sample 1	4.57	0.04	0.90
sample 2	10.72	0.11	1.00

Methods comparison
a comparison between Archem and a commercially available product gave the following results:
Uric acid T FL Archem = x
Uric acid competitor = y
n = 104
y = 0.976x - 0.026 mg/dl r2 = 0.99

EXPECTED VALUES*

Serum/plasma samples:
Men: 3.5 - 7.2 mg/dl (0.21 - 0.42 mmol/l)
Women: 2.6 - 6.0 mg/dl (0.15 - 0.35 mmol/l)
24h urine: 250 - 750 mg/24h (1.50 - 4.50 mmol/l)
* It is recommended that each laboratory establish its own normal range.

QUALITY CONTROL

All control sera with uric acid values determined by this method can be used. We recommend:
"ARCON N", Assayed Control Serum Normal
Cat.No. A3910
"ARCON P", Assayed Control Serum Abnormal
Cat.No. A3920

CALIBRATION

The assay requires the use of an Uric Standard or an Uric Calibrator. We recommend:
ARCHEM Standard
Cat.No. A2340S (6 mg/dl)
Any commercially available Standard or Calibrator suitable for this method may be used.

AUTOMATION

Special adaptations for automatic analyzers can be made on request.

REFERENCES

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4. Tietz Textbook of Clinical Chemistry, Second Edition, Burtis-Ashwood (1994).
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