



URIC ACID KIT

INTRODUCTION & PRINCIPLE:

Uric Acid is the end-product of Urine metabolism. Nearly half of the total Uric Acid is eliminated and replaced each day by way of urinary excretion and through microbial degradation in the intestinal tract. Increased Uric Acid levels are commonly associated with both nitrogen retention and urea, creatinine and other non-protein constituents. The quantitation of Uric Acid is an aid in the diagnosis of gout, decreased renal function, myeloproliferative disorders and other conditions in which the cause for the hyper Uricemia is not known.

The enzymatic reaction sequence employed in the assay of Uric Acid is as follows:

Uric Acid is transformed by Uricase into Allantoin and Hydrogen peroxide which under the catalytic influence of peroxidase Oxidizes the Chromogen to form a quinoneimine, whose intensity of colour is proportional to the concentration of Uric Acid in the sample.

REAGENTS AND STABILITY:

1. R1 : Uric Acid Reagent : Ready - To - Use
 2. R2 : Uric Acid Reagent : Ready - To - Use
 3. Uric Acid Standard : Ready - To - Use : 5 mg/dl
- Discard the reagent, if Turbidity is observed. A slight pink colour is normal and does not alter the results. Equilibrate reagent at 37⁰ C before addition of sample/standard.

Avoid contamination of the Ready-To-Use Reagents. Always use fresh pipette tips. Keep always the cap tightly closed.

SPECIMEN COLLECTION:

1. Test specimens should be serum and free from hemolysis.
2. Bacterial contamination should be avoided to preserve the loss of Uric Acid.
3. Uric Acid in serum is stable for three days at 2⁰ - 8⁰ C and up to six months when frozen.
4. Urine: Dilute 1:10 with NaOH 0.01N.

INTERFERING SUBSTANCES:

1. Bilirubin and Ascorbic Acid present in the sample can result in falsely depressed Uric Acid levels.
2. Lipemic samples may give falsely elevated Uric Acid levels.
3. Collection tubes containing formaldehyde as a preservative must be avoided.

PROCEDURE:

WAVE LENGTH	: 505 nm
TEMPERATURE	: 37 ⁰ C
CUVETTE	: 10 mm path length
MEASUREMENT	: Against Blank
STANDARD	: 5 mg/dl or 297.5 umol/l (Refer the Vial label)
INCUBATION	: 10 mins.

Pipette into cuvettes	Blank	Macro	Semi-Micro
Reagent R1	100 ul/500 ul	1000 ul	500 ul
Reagent R2	100 ul	100 ul	50 ul
Sample/ Standard	--	50 ul	25 ul

Mix & incubate for 10 minutes and read the absorbance of Sample (A-Sample) and of the Standard (A-Standard) against a reagent blank, within 30 minutes at 505 nm.

CALCULATION:

$$\frac{A \text{ of Sample}}{A \text{ of Standard}} \times \text{Concentration of Standard} = \text{Concentration of Uric Acid (mg/dl)}$$

Samples with values exceeding 25 mg/dl should be diluted 1:1 with saline, reassayed and the result multiplied by two. Lipemic samples will give falsely elevated results and a serum blank must be run. (for serum blank, add 0.025 ml of sample to 1.0 ml of water).

EXPECTED VALUES :

SERUM : WOMEN : 3.40 to 7.00 mg/dl (202 – 416 Umol/l)

MEN : 2.40 to 5.70 mg/dl (142 – 339 Umol/l)

URINE : 2.50 to 7.50 mg/dl
: 250 – 750 mg/24 hours (1.49 - 4.46 mmol/24 hours)

LINEARITY : 25 mg/dl

REFERENCES:

1. Fossati. P., Prencipe.L., Berth.G. "Clin. Chem.", 227 (1980)