Uric Acid

Liquid Reagent
Colorimetric & Enzymatic method
Store at 2-8 ºC

PRINCIPLE

Uric acid is oxidized by Uricase to Allantoine and Hydrogen peroxide according to the following reactions :

$$\text{Uric acid} + O_2 + 2H_2O \xrightarrow{\text{Uricase}} \text{Allantoine} + CO_2 + H_2O_2$$

$$2H_2O_2 + \text{DHBS} + \text{4-aminoantipyrine} \xrightarrow{\text{Peroxydase}} \text{Red quinone} + H_2O + HCl$$

REFERENCE VALUES

Serum	Men	2.5 - 7.0 mg/dl
	Women	2.4 - 5.7 mg/dl
Urine	-	250 - 750 mg/24h

It is recommended that each laboratory should assign its own normal range.

SAMPLES

Serum, Plasma, Urine diluted 1/10 in distilled water.
Uric acid in serum is stable for 3 -5 days at 2- 8 ºC.
If the urine sample is opalic then incubate at 60ºC for ten minutes. The ascorbic acid in the urine sample interferes with the test, so use diluted sample.

REAGENTS

R_1 :

Phosphate buffer	150 mmol/l
Peroxydase	12000 U/l
4-Aminoantiyrine	1.0 mmol/l
Uricase	150 U/l
DHBS	2.0 mmol/l

R_2 : Standard : 6 mg/dl.

PREPATION OF WORKING REAGENT

The Reagent is ready to use

PROCEDURE

Wavelength	510 nm (500 – 550 nm)
Temperature	25ºC – 30ºC - 37ºC
Cuvette	1 cm light path
Method	Endpoint - increasing

If the absorbance of the working reagent is higher than 0.1 at 492nm the reagent can not be used.

	Blank	Sample	Standard
Standard	-	-	20 µl
Sample	-	20 µl	-
Working reagent	1 ml	1 ml	1 ml

Mix well and incubate 15 minutes at 25ºC or 5 minutes at 37 ºC then read the optical density (O.D) against the blank, the color is stable for 30 min.

CALCULATION

URIC ACID CONCENTRATION =

$$\frac{\text{O.D Sample}}{\text{O.D Standard}} \times \text{Standard concentration}$$

LINEARITY

Up to 25 mg/dl.

SPECIFICATION

Hemoglobine 1.2g/l, Bilirubin 0.5g/l, lipid 7g/l, glucose 10g/l and ascorbic acid 0.02g/l do not interfere with the assay up to the given levels

BIBLIOGRAPHY

-Barham D. Trinder P. Analyst. 97, 142 (1972).
-Fossatti and Prencipe. Clin. Chem. 29,227 (1980).

The following symbols are used on labels

IVD	For in vitro diagnostic use
	Use day (last day of the month)
	Temperature limitation
LOT	Batch code
REF	Code