URIC ACID TEST KIT

INTENDED USE : This Reagent kit is intended for ***"In Vitro"*** quantitative determination of Uric Acid concentration in serum & Urine. Enzymatic colorimetric Method.

CLINICAL SIGNIFICANCE : In the human body Uric Acid is the end - product of purine metabolism. It is excreted by the kidney. Increases of Uric Acid in the serum plasma or urine can be due to the overproduction of purine containing molecules or to insufficient excretion. The concentration is increased in various renal diseases, with increased call lysis in the presence of tumors, leukemia, toxemia of pregnancy. Prolonged elevation of the concentration leads to gout.

PRINCIPLE : Uricase transforms Uric Acid in the sample inti Allantion, Carbon dioxide (CO2) and Hydrogen Peroxide (H2O2). By the action of Peroxidase (POD) and in the presence of phenol - derivative, DHBS and 4 - Aminoantipyrine, Hydrogenperoxide gives a coloured indicator reaction which can be measured at 520 nm. The increasing in absorbance correlates with (is proportional to) the Uric Acid concentration of the sample.

$$\text{Uric Acid} + 2H_2O + O2 \xrightarrow{\text{Urease}} \text{Allantoin} + CO_2 + H_2O_2$$

$$2H_2O_2 + \text{4 - Aminoantipyrine} + \text{DHBS} \xrightarrow{\text{Peroxidase}} \text{Red quinone} + 4H_2O$$

REAGENT COMPOSITION :
Reagent 1 : Enzyme Reagent
Uric Acid Standard : 6 mg/dl

MATERIALS REQUIRED BUT NOT PROVIDED :
- Clean & Dry Glassware.
- Micropipettes & Tips.
- Colorimeter or Bio-Chemistry Analyzer.

SAMPLES : Serum free of hemolysis. Urine diluted in ratio of 1:10 with distilled water. Multiply the result by 10. If the Urine sample is opalic then incubate at 60°C for ten minutes. The ascorbic acid in the urine sample interferes with the test, so use dilited sample.

STABILITY OF REAGENT : When Stored tightly closed at 2 to 8°C temperature protected from light and contaminations prevanted during their use; reagents is stable up to the expiry date stated on the lable.

WORKING REAGENT : The Reagent is ready for use.

ASSAY PROCEDURE :

	Blank	Standard	Sample
Reagent	1000 µl	1000 µl	1000 µl
Standard	-	20 µl	-
Sample	-	-	20 µl

Mix and read the optical density (A) after a 10 - minute incubation at 37°C.

GENERAL SYSTEM PARAMETERS :

Reaction Type	End Point (Increasing)
Wavelength	510 nm (490 - 550) nm
Light Path	1cm
Reaction Temperature	37°C
Blank / Zero Setting	Reagent
Reagent Volume	1000 µl
Sample Volume	20 µl
Incubation Time	10 Minutes
Standard Concentration	6 mg/dl
Low Normal	2.5 mg/dl
High Normal	7.0 mg/dl
Linearity	20 mg/dl

CALCULATION :

$$\text{Uric Acid Conc. (mg/dl)} = \frac{\text{OD of Sample}}{\text{OD of Standard}} \text{ X Conc. of standard}$$

LINEARITY : Reagent is Linear up to 20 mg/dl. Dilute the sample appropriately and re-assay if Uric Acid concentration exceeds 20 mg/dl. Multiply result with dilution factor.

REFERENCE NORMAL VALUE :
Female : 2.5 - 6.0 mg/dl (25 - 60 mg/l)
Male : 3.4 - 7.0 mg/dl (34 - 70 mg/l)
Urine : 250 - 750 mg/24h

QUALITY CONTROL : For accuracy it is necessary to run known controls with every assay.

SENSITIVITY / LIMIT DETECTION : The Lower Limit of detection is 0.1 mg/dl (5.95 µmol /L).

LIMITATION & PRECAUTIONS :
- Storage conditios as mentioned on the kit to be adhered.
- Do not freeze or expose the reagents to higher temperature as it may affect the performance of the kit.
- Before the assay bring all the reagents to room temperature.
- Avoid contamination of the reagent during assay process.
- Use clean glassware free from dust or debris.
- Do not use the reagent if it is hazy or cloudy.
- No interfere with bilirubin up to 20 mg/dl. Hb up to 50 mg/dl, Ascorbic Acid up to 30 mg/dl and triglycerides up to 2000 mg/dl.

BIBLIOGRAPHY :
Teitz. N. W.; Fundamentals of Clinical Chemistry, Young D. S. Naito, HK. et. al. (1973), 10. 79.

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