URIC ACID

Colorimetric/Uricase – PAP Method

IVD CE

PRODUCT CODE
CS018

INTENDED USE
This reagent is intended for in vitro quantitative determination of Uric acid in serum & plasma

CLINICAL SIGNIFICANCE
Uric acid measurements are used in the diagnosis and treatment of numerous renal and metabolic disorders, including renal failure, gout, leukemia, psoriasis, starvation or other wasting conditions, and of patients receiving cytotoxic drugs.

PRINCIPLE
Uric Acid is the end product of purine metabolism. Its quantitation aids in the diagnosis of gout, renal dysfunction, diabetes and other condition, Uricase catalyze the oxidation of uric acid to Allantoin and H_2O_2. In the presence of Peroxidase (POD), H_2O_2 reacts with 4-Aminoantipyrine and 3, 5, Dichloro-2-Hydroxybenzensulphonate (DHBS) to from Quinonemine dye, the concentration of which at 546 nm is directly proportional to the Uric Acid concentration.

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

$$2H_2O_2 + \text{DHBS} + \text{4 -Aminoantipyrine} \xrightarrow{\text{POD}} \text{Quinonemine dye} + 4H_2O$$

REAGENT COMPOSITION

Uric Acid Reagent

Phosphate Buffer (pH7.5)	50 mmol/L
4-Aminoantipyrine	0.3 mmol/L
DHBS	4.0 mmol/L
Uricase	400 U/L
Peroxidase	100 KU/L

Uric Acid Standard

Uric Acid standard concentration	8 mg/dL or 476 µmol/L

REAGENT PREPARATION
Reagent and standard are ready for use.

REAGENT STORAGE AND STABILITY
The reagents are stable, if protected from light, up to the stated expiry date when stored at 2 - 8° C.

SPECIMEN
Fresh serum, heparinized or EDTA plasma may be used

PRECAUTION
To avoid contamination, use clean laboratory wares.
Avoid direct exposure of reagent to light.

ASSAY

Wavelength	546nm
Cuvette	1 cm light path
Temperature	20-25°C or 37°C
Measurement	Against reagent blank

PROCEDURE

Pipette into Cuvettes	Blank	Standard	Sample
Uric acid reagent	1000 µL	1000 µL	1000 µL
Standard	--	20 µL	--
Sample	--	--	20 µL
Mix and incubate for 10 minutes at 20-25°C or 5 minutes at 37°C Measure the absorbance of the sample (As) and the standard (Astd) against the reagent blank immediately.			

CALCULATION

$$\text{Uric acid Conc. (mg/dL)} = \frac{\Delta A \text{ sample}}{\Delta A \text{ standard}} \times 8 \text{ (Std.conc.)}$$

To convert mg/dL to µmol/L multiply by 59.60

LINEARITY
This reagent is linear up to 20 mg/dL or 1192 µmol/L, If the concentration is greater than linearity (20 mg/dL), dilute the sample 1:1 with normal saline (0.9%) and multiply the result by 2.

NORMAL RANGE

Males	3.4 – 7.0 mg/dL	203 - 417 µmol/L
Females	2.4 – 5.7 mg/dL	143 - 340 µmol/L

QUALITY CONTROL
All control sera with Uric acid value estimated by this method can be used.

NOTES
1- Grossly lipaemic or haemolysed samples can cause falsely high uric acid values. Bilirubin or ascorbic acid, at high levels may result in negative interference.

SYMBOL ON LABELS

Symbols	Signify	Symbols	Signify
REF	Catalogue Number	SIZE	Pack Size
	Expiry Date	VOL	Volume
	Storage Condition	LOT	Lot Number
	Instruction for Use	IVD	In Vitro Diagnostics
	Manufacturing Date		Manufacturer
	Number of Tests	2	For Single Use Only
EC REP	EC Representative	CE	European conformity

BIBILOGRAPHY

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2- Kabasakalian,P.et al;clin Chem, 19,522, 1973
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4- Fossati,p.et al; clin chem.26,227,1980.

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