Biomaghreb

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CE

URIC ACID

Enzymatic Colorimetric test (Uricase- PAP)

Reagent for the quantitative determination
of uric acid in human plasma and urine

IN VITRO DIAGNOSTIC USE

IVD

REF	**15013**	**3 x 125 ml** (375 T)	**R1:** 3 x 125 ml	**R2:** 3 lyophilisates	**R3:** 1 x 6 ml
REF	**15020**	**4 x 30 ml** (120 T)	**R1:** 4 x 30 ml	**R2:**4 lyophilisates	**R3:** 1 x 4 ml
REF	**15037**	**2 x 30 ml** (60 T)	**R1:** 2 x 30 ml	**R2:**2 lyophilisates	**R3:** 1 x 4 ml
REF	**15044**	**5 x 120 ml** (600 T)	**R1:** 5 x 120 ml	**R2:** 5 lyophilisates	**R3:** 2 x 6 ml

CLINICAL SIGNIFICANCE

Uric acid is a waste product produced by the body. It is the end product of the metabolism of nucleic acids and purines. Hyperuricemia can be caused by excessive production of uric acid or by a decrease in its elimination by the kidneys. The doctor prescribes a blood and/or urine uric acid test to detect gout, kidney failure or in case of pregnancy. For example, high levels of uric acid in the blood can be the result of a diet rich in purine.
Hereditary predispositions are found in some patients but are often associated with overeating, alcohol abuse, diabetes and hypertriglyceridemia. On the other hand, hypourecemia (less common than hyperurcemia) may be related to renal or hepatic pathology or to a diet low in purines.

PRINCIPLE

Uric acid is dosed according to the following reactions:

$$\text{uric acid} + 2H_2O + O_2 \xrightarrow{\text{Uricase}} \text{Allantoïne} + CO_2 + H_2O_2$$

$$2H_2O_2 + \text{Amino - 4-antipyrine} + \text{Dichloro 2- 4phenolsulfonate} \xrightarrow{\text{Peroxidase}} \text{Quinone rose} + 4H_2O$$

REAGENT COMPOSITION

Reagent 1 Buffer	Buffer phosphate ; pH 7.4 Dichloro 2-4 Phenolsulfonate	50 mmol/l 4 mmol/l
Reagent 2 Enzymes	Uricase Peroxidase Amino-4-Antipyrine	70 UI/l 660 UI/l 1 mmol/l
Reagent 3 Standard	Standard uric acid	6 mg/dl 60 mg/l 357 µmol/l

SAFETY CAUTIONS

Biomaghreb reagents are intended for use by qualified personnel for in vitro use (do not pipette by mouth).

- Refer to the current SDS available on request or at www.biomaghreb.com;
- Verify the integrity of the reagents before use; and
- Disposal of waste: comply with the legislation in force.

For safety reasons, treat any specimen or reagent of biological origin as potentially infectious.
Respect the legislation in force

REAGENT PREPARATION

Dissolve the lyophilisate R2 with the contents of a Buffer R1 vial. Shake gently until completely dissolved before using the reagent (approximately 5 minutes)

SAMPLE PREPARATION

Serum, plasma heparinized non-hemolyzed.
Urine diluted 1/10 in distilled water.
If the urine sample is turbid, warm up to about 60°C for 10 minutes to dissolve the uric acid.

PRESERVATION AND STABILITY

- Before opening: Until the expiry date indicated on the label of the box at 2-8°C;
- After opening (Working Solution) :
  7 days at 20 -25°C
  3 weeks at 2-8°C

ADDITIONAL EQUIPMENT

- Basic equipment of the medical analysis laboratory ;
- Spectrophotometer or Clinical Biochemistry Analyzer.

LIMITS

Elevated levels of bilirubin and/or ascorbic acid may interfere negatively with the uric acid assay.

QUALITY CONTROL

External quality control program.
It is recommended to control in the following cases:

- At least one test per series.
- Change of reagent bottle.
- After maintenance work on the analyzer.

If a control value is outside the confidence limits, repeat the procedure using the same control.
Use normal and pathological control sera.

CALIBRATION

The standard of the kit (Reagent 3) or any calibrator connected to a method or reference material.
The frequency of calibration depends on analyzer performance and reagent storage conditions.
Recalibration is recommended in the following cases:

1. Changing the reagent lot ;
2. After maintenance work on the analyzer; and
3. Control values are outside the confidence limits.

LINEARITY

The method is linear up to 250 mg/l (25 mg/dl = 1487,5 µmol/l).
If the uric acid concentration is higher than 250 mg/l, repeat the test on a sample diluted 1/2 with 9 g/l NaCl solution.
Multiply the result by 2.

PROCEDURE

Wavelength: 510 nm (490-550) ;
Temperature : 20 - 25°C ;
Tank : 1 cm thick ;
Adjust the spectrophotometer zero on the reagent blank for standard and samples

	Blank	Standard	Sample
Standard	- -	20 µl	- -
Sample	- -	- -	20 µl
Working solution	1 ml	1 ml	1 ml
Mix, read absorbances after incubation for 5 minutes at 37°C or 10 minutes at 20 - 25°C. Staining is stable 30 minutes.			

CALCULATION

• Serum or plasma :

$$\text{Uric acid} = \frac{\text{DO. Sample}}{\text{DO. Standard}} \times n \qquad n = \text{Standard value}$$

n =6 mg/dl ;
n =60 mg/l ;
n =357 µmol/l.

• Urine : Multiply the result by 10.

REFERENCE VALUES

Serum or plasma	Women	2.5 - 6.0 mg/dl 25 - 60 mg/l 148 - 357 µmol/l
	Men	3.4 - 7.0 mg/dl 34 - 70 mg/l 200 - 416 µmol/l
Urine		250 - 750 mg/24 h

REFERENCES

Barham et Trinder, Analyst 97, 142 (1972) ;
Fossati et Principe, Clin. Chem. 28, 227 (1980).

Manufacturer | Use by | In Vitro Diagnostic | Temperature Limitation | Catalogue number | See insert | Store away from light | Sufficient for < n > essais | Batch number