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URIC ACID ADPS

CE

STABLE LIQUID REAGENT

Cat. No.:	46761,46761S	46762,46762S	46763
	120 ml	600 ml	10x30 ml
	(1x80 ml+1x40 ml)	(1x400 ml+1x200 ml)	(10x20 ml+ 10x10 ml)

Reagent kit for determination of uric acid concentration in serum and urine. Enzymatic colorimetric method.

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 cell lysis in the presence of tumors, leukemia, toxemia of pregnancy. Prolonged elevation of the concentration leads to gout.

Principle

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

$$2H_2O_2 + 4Aminoantipyrine + ADPS \xrightarrow{\text{Peroxidase}} purple\ quinone + 4\,H_2O$$

ADPS=N-Ethyl-N-sulfopropyl-n-anisidine

Reference values
Serum: 178-345 µmol/l (3,0-5,7 mg/dl)
Urine: 250-750 mg/24 h
It is recommended that each laboratory should assign its own normal range.

Reagents

1. Reagent (R1)

Pipes buffer, pH: 7.00	50 mmol/l
4-Aminoantipyrine	0.37 mmol/l
Peroxidase	≥ 1500 U/l
Ascorbate oxidase	≥ 1600 U/l

2. Reagent (R2)

Ferrocyanid	50 µmol/l
ADPS	1.1 mmol/l
Uricase	≥ 140 U/l

3. Uric acid standard
Ready for use.For details please check the insert.
Available only in Cat. No.: 46761S and 46762S

Precaution
Discard cloudy reagent. Avoid contamination by using clean laboratory material (pipettes, plastic vials for analyzers,...).
The reagents contain 0.1% sodium azide. To avoid the possible build-up of azide compounds, flush waste-pipes with water after the disposal of undiluted reagent.

Samples
Serum free of haemolysis.
Urine diluted in ratio of 1:10 with distilled water.

PROCEDURE

Preparation and stability of working reagent
• One-reagent procedure
Mix 2 volumes of R1with 1 volume of R2.
Stability : at 20-25°C: 2 weeks
at 2-8°C: 1 month
• Two-reagent procedure
The reagents are ready for use.
If the absorbance of working reagent is higher than 0.1 at 546 nm the reagent can not be used.

Assay conditions

Wavelength:	546 (520-570) nm
Temperature:	37 °C
Cuvette:	1 cm light path
Read against:	reagent blank
Method:	endpoint (increasing)

• **One-reagent procedure**

	blank	standard	sample
working reagent	1 ml	1 ml	1ml
dist. water	50 µl		
standard		50µl	
sample			50µl

Mix and read the absorbance (A) after a 5-minute incubation.

• **Two-reagent procedure**

	blank	standard	sample
R1	1 ml	1 ml	1ml
dist. water	75µl		
standard		75µl	
sample			75µl

Mix, wait 1 minute then add:

R2	500µl	500µl	500µl

Mix and read the absorbance (A) after a 5-minute incubation.

Calibration: (37°C, Uricase/ASOD method)
S1: Distilled water
S2: Uric acid standard Cat. No.: 50511 or
Roche C.F.A.S. (Calibrator for automated system)
Randox Calibration Serum Level I or
Randox Calibration Serum Level II

Calibration frequency
Two-point calibration is recommended:
- after reagent lot change,
- as required following quality control procedures.

Calculation using calibration

$$\frac{A_{sample}}{A_{standard}} x C_{standard} = C_{sample}$$

A = Absorbance, C = Concentration

Quality control
A quality control program is recommended for all clinical laboratories. The analysis of control material in both the normal and abnormal ranges with each assay is recommended for monitoring the performance of the procedure. Each laboratory should establish corrective measures to be taken if values fall outside the limits.

PERFORMANCES DATA

The following data were obtained using the Olympus 600 analyzer (37°C).

Linearity
The test is linear up to 1487.5 µmol/l (25 mg/dl) uric acid concentration.
Sensitivity
It is recommended that each laboratory establishes its own range of sensitivity as this is limited by the sensitivity of the spectrophotometer used. Under manual conditions however, a change of 0.001 Abs is equivalent to 3.60 µmol/l (0,06mg/dl) Uric acid concentration at 546 nm.
Specificity
Bilirubin 545 µmol/l (30mg/dl), lipid 650mg/dl, glucose 55.5mmol/l (1000mg/dl) and ascorbic acid 0.11 mmol/l (30 mg/dl) don't interfere with the assay up to the given levels.
Precision

	Reproducibility		
Sample	Average concentration (µmol/l)	SD	CV%
Sample I	277	1.88	0.68
Sample II.	621	3.00	0.48

	Repeatability		
Sample	Average concentration (µmol/l)	SD	CV%
Sample I	364	2.84	0.79
Sample II.	577	4.36	0.76

Correlation
Comparative studies were done to compare our reagent with our Uric Acid PAP assay on 62 human serum samples.
The results from these studies are detailed below.
Correlation coefficient r =0.9898
Linear regression: y (µmol/l)= 0.959x+34.1
(x= Uric acid PAP reagent, y= Uric acid ADPS reagent).

Note
Do not use reagents after the expiry date stated on each reagent container label. Do not use products, test solutions and reagents described above for any purpose other than described herein.

For *in vitro* diagnostic use only.

The following symbols are used on labels

IVD For in vitro diagnostic use

Use by (last day of the month)

Temperature limitation

LOT Batch Code

REF Code

Bibliography
Trivedi R. C., Rebar L., Berka E., Strong L. Clin. Chem. 1978; 24; 1908