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URIC ACID

CONCENTRATED LIQUID REAGENT

CE

Order information:

Catalogue number	Size
9551C	10 x 65 + 10 x 33 ml
9552C	4 x 65 + 4 x 33 ml

Reagent kit for quantitative in vitro determination of uric acid in serum and plasma.

Summary

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.

Method

Uricase/peroxidase method with ascorbate oxidase at 546 nm

$$\text{Uric acid} + 2H_2O + O_2 \xrightarrow{\text{uricase}} \text{allantoin} + CO_2 + H_2O_2$$

$$2H_2O_2 + \text{4-aminoantipiryne} + \text{ADPS} \xrightarrow{\text{peroxidase}} \text{purple quinone dye} + 4H_2O$$

Reagents

Composition and concentrations

Reagent 1	
Pipes buffer, pH:7,00	50 mmol/l
4-aminoantipiryne	0,95 mmol/l
Peroxidase	≥4500 U/l
Ascorbate-oxidase	≥4800 U/l
Reagent 2	
Ferrocyanide	50 µmol/l
ADPS	3,3 mmol/l
Uricase	≥350 U/l

Storage and stability

The reagent is stable up to the end of the indicated month of expiry without opening, if stored at 2 – 8°C, protected from light and contamination is avoided. Do not freeze!
Onboard stability after opening and the frequeny of calibration is 72 days.

Warnings and precautions

Do not use reagents after the expiry date stated on each reagent container label.

Chemical safety

This product is not classified as dangerous. Safety data sheet is available upon request. The product contains sodium azide. Sodium azide can react with copper and lead plumbing to form explosive metal azides. If disposal into a drain is in compliance with federal, state, and local requirements, flush reagents with a large amount of water to prevent the buildup of azides.

Preparation

The reagent is ready for use.

Sample

Serum, heparin, citrate or EDTA plasma. CSF

Stability in serum:	3-5 days at 4°C
	6 months at -20°C

Urine. Dilute it 1:9 before measurement. Do not refrigerate. Add NaOH to keep urine alkaline.

Expected values and reference range

Serum:	181 – 352 µmol/l
Urine:	1,53 – 4,6 mmol/l/24h
CSF:	5 – 55 µmol/l

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

Assay procedure

Wavelength:	546 nm / 700 nm (primary/secondary)
Optical path:	1 cm
Temperature:	37°C
Measurement:	against reagent blank
Reaction:	endpoint, increasing

	blank	sample or standard
reagent 1	200 µl	200 µl
dist. water (diluent)	400 µl	400 µl
dist. water (blank)	45 µl	-
sample or standard	-	45 µl
Mix and incubate for 1 minute		
reagent 2	100 µl	100 µl
dist. water (diluent)	200 µl	200 µl
Mix and incubate for 5 minutes and read the absorbance against reagent blank.		

Calculation

Uric acid[µmol/l]=ΔA sample/ΔA standard × standard concentration[µmol/l]

Conversion factor

[µmol/l]=[mg/dl]×59,44

Calibration and quality control

S1: Distilled water
S2: Uric acid standard Cat.: 50511 or
Roche C.F.A.S. (Calibrator for automated system) or
Randox Calibration Serum Level I or
Randox Calibration Serum Level II
Calibration is recommended:

- after opening new reagent batch
- after system maitenance or troubleshooting

For internal quality control, two levels controls are recommended (normal and pathological) at least once a day. The measured values must in the range which was given by the control's manufacturer. Each laboratory should establish corrective measures to be taken if values fall outside the limits.

Preformance characteristics

Measuring range

The method is linear in the range 60 – 2250 µmol/l

Interferences

No significant intereference was observed by bilirubin up to 1000 µmol/l bilirubin, triglycerides up to 11 mmol/l, hemoglobin up to 1 g/l and ascorbate up to 1,5 g/l. Significant interference: >10%.

Limit of detection

The limit of detection is 0,234 µmol/l

Precision

Repeatability	mean	SD	CV
n = 20	[µmol/l]	[µmol/l]	[%]
normal sample	351	2,03	0,58
pathological sample	574	4,31	0,75
Reproduceability	**mean**	**SD**	**CV**
n = 10	[µmol/l]	[µmol/l]	[%]
normal sample	349	1,98	0,57
pathological sample	572	4,58	0,8

Method comparison

Comparison with the non-concentrated reagent.
analyser: Advia 2400
number of samples: 151
range: 66 – 1138 µmoll
correlation coefficient: 0,997
regression line equation: y =1,022x – 0,676
(x= normal reagent, y= concentrated reagent)

For in vitro diagnostic use only!

The following symbols can be used on the labels

In vitro diagnostic device


Manufacturer


CE-marking


Temperature limitations


Use by (year/month)

Batch code

Catalogue number


This way up


Biological risk

Literature

Trivedi R.C.,Rebar R.,Berka E., Strong L.: Clin. Chem., 1978, 24:1908
Tietz Clinical Guide To Laboratory Tests, 4th edition, Elsevier, 2006