

# LiquiMAX Uric Acid- SLR

## (AOX/ADPS 5 minutes End Point)

### URICASE - PAP TRINDER'S METHOD

#### ORDERING INFORMATION

Ref. No.	Pack Size	Presentation
AVURI1 - 25	25 ml	Mono Reagent
AVURI1 - 50	2 x 25 ml	
AVURI1 - 100	4 x 25 ml	
AVURI1 - 250	5 x 50 ml	
AVURI1 - 500	10 x 50 ml	

#### INTENDED USE:

LiquiMAX Uric Acid is an in-vitro diagnostic kit is use for the quantitative determination of uric acid in human serum, plasma and urine.

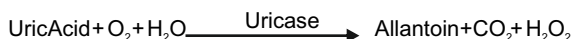
#### PRODUCT FEATURES

1. Liquid Stable, Ready to use Mono Reagent
2. No Ascorbic Acid interference up to 100 mg/dl
3. Superior ADPS Chromogen
4. 5 Minutes End Point Reaction
5. Lipid Clearing Factor (LCF)
6. Aqueous Uric Acid standard provided (Standard Conc: 8 mg/dl)
7. Linearity: 30 mg/dl
8. Measuring Wavelength 546 nm (540 – 578 nm)
9. Serum/ Heparinized Plasma/Diluted Urine are the specimens

#### CLINICAL SIGNIFICANCE :

Uric acid is the final product of purine metabolism in the human organism. Uric acid measurements are used in the diagnosis and treatment of numerous renal and metabolic disorders, including renal failure, gout, leukaemia, psoriasis, starvation or other wasting conditions, and of patients receiving cytotoxic drugs. The oxidation of uric acid provides for two approaches to the quantitative determination of this purine metabolite. One approach is the reduction of phosphotungstic acid in an alkaline solution to tungsten blue, which is measured photometrically. The method is, however, subject to interferences from drugs and reducing substances other than uric acid. A second approach, described by Praetorius and Poulson, utilizes the enzyme uricase to oxidise uric acid; this method eliminates the interferences intrinsic to chemical oxidation. Uricase can be employed in methods that involve the UV measurement of the consumption of uric acid or in combination with other enzyme to provide a colorimetric method. The assay described here is a slight modification of the colorimetric method. The modifications were described by Siedel. In this reaction, the peroxide reacts in the presence of peroxidase, ADPS and aminoantipyrine to form a Blue purple quinoneimine dye. The intensity of the Blue purple color is proportional to the uric acid concentration and is determined photometrically.

#### PRINCIPLE



#### STORAGE AND STABILITY

All the reagents should be stored at 2-8°C and are stable till the expiry date mentioned on the labels.

#### KIT COMPONENTS

1. Uric Acid Reagent
2. Uric Acid Standard : Concentration as stated on the label

#### COMPOSITION

Ferrocyanide 0.03 mmol/L  
 Phosphate Buffer (pH 7.0) 100 mmol/L  
 EHSPT 0.72 mmol/L  
 Amino -4-antipyrine 0.37 mmol/L

Peroxidase >12000 U/L  
 Uricase > 150 U/L  
 Sodium Azide < 0.1%

#### REAGENT RECONSTITUTION & STABILITY

The Uric Acid Reagent is ready to use and stable up to expiry mention on the label & contamination is avoided.

#### MATERIAL REQUIRED BUT NOT PROVIDED

Laboratory Instrumentation, Spectrophotometer UV/VIS with thermostatic cuvette holder or clinical chemistry analyzer: semi auto, calibrated micropipettes, glass or high quality polystyrene cuvettes, test tube/rack, heating bath controls, saline.

#### REAGENT DETERIORATION

A slight Blue purple color (up to 0.15 abs units) at 546 nms does not affect performance of the reagent.

#### WARNING & PRECAUTIONS

- Reagent may contain some non reactive and preservative components. It is recommended to handle carefully, avoiding contact with skin and ingestion.
- Specimen should be considered infectious and handled appropriately.
- Contamination by soap or glycerol will affect this assay.
- Perform the test according to the general " Good Laboratory Practice" GLP

#### SPECIMEN COLLECTION AND STORAGE

Unhemolysed Serum / Heparinised plasma / Urine. Urine should be diluted 1:10 with distilled water before use.

#### SYSTEM PARAMETERS:

Reaction type	:	END POINT
Wave length	:	546 nm (540 - 578)
Flow cell Temp.	:	37°C
Sample volume	:	25µl
Reagent volume	:	1000µl
Standard concentration	:	8
Units	:	mg/dl
Blanking with	:	Reagent
Low normal	:	2.4
High normal	:	7.0
Linearity	:	30

#### TEST PROCEDURE:

Pipette into test tubes labeled Blank (B), Standard (S) and Test (T) as follows:

Reagent	Blank (B)	Standard (S)	Test (T)
Uric Acid Reagent	1000µl	1000µl	1000µl
Uric Acid Standard (Conc : 8 mg/dl)	-	25 µl	-
Specimen	-	-	25 µl

Mix and incubate for 5 minutes at 37°C or 10 minutes at R.T.  
 Mix and read absorbance of Standard (S) and Test (T) against Reagent Blank (B) at 546 nm (540-578 nm).

**(Note : In case the user does not have 25 µl micro pipette he is advised to work with 20 µl as specimen/standard volume)**

#### CALCULATIONS:

$$\text{Serum Uric Acid in mg/dl} = \frac{\text{Abs. of T}}{\text{Abs. of S}} \times 8$$

$$\text{Urine Uric Acid in mg/dl} = \frac{\text{Abs. of T}}{\text{Abs. of S}} \times 8 \times 10 \text{ (Urine Dilution Factor)}$$

## EXPECTED VALUES

Serum Uric Acid		
Women	:	2.4–5.7 mg/dl
Men	:	3.4–7.0 mg/dl
Urine Uric Acid	:	250–750 mg/24 hours urine

It is recommended that laboratories should establish their own normal range.

## QUALITY CONTROL & CALIBRATION

To ensure adequate quality control, the use of commercial reference control serum is recommended with each assay batch. Use of Quality Control material checks both, the instrument and the reagent functions.

## PERFORMANCE CHARACTERISTICS

### 1. Linearity

Linearity : 30 mg/dl

### 2. Sensitivity/ Limit of Detection (LOD)

The lower limit of detection is 0.2 mg/dl

### 3. Interferences

No significant interference was observed from Bilirubin up to 25 mg/dl (Both conjugated and unconjugated Bilirubin) Hemoglobin up to 50 Mg/dl, Lipemia as Triglycerides up to 2000 mg/dl, Ascorbic acid up to 100 mg/dl.

### 4. Precision:

Reproducibility was determined using human samples and controls.

#### Intra-Assay

(N = 20)	Mean (mg/dl)	SD (mg/dl)	CV%
Sample1	4.23	0.03	0.74
Sample2	5.96	0.04	0.65
Sample3	11.49	0.06	0.48

#### Inter-Assay

(N = 20)	Mean (mg/dl)	SD (mg/dl)	CV%
Sample1	4.70	0.04	0.92
Sample2	6.44	0.08	1.27
Sample3	11.03	0.13	1.20

### 5. Method Comparison:

A comparison of the LiquiMAX Uric Acid - SLR (AOX/ADPS ) (y) with a commercially obtainable assay (x) gave with 44 samples the following result:  $y = 0.897x - 1.149$ ;  $r = 0.9685$

## LIMITATIONS

Measuring range: 0.2-30 mg/dl. Determine samples having higher concentrations manually dilute with 0.9% NaCl or distilled/deionized water (e.g. 1 + 1). Multiply the result by the appropriate dilution factor (e.g. 2).

## WASTE DISPOSAL

Reagents must be disposed off in accordance with local regulations.














## NOTES

1. Reagent must be stored at 2-8°C till expiry.
2. If a larger volume of reagent is required for the absorbance reading, requisite volumes can be taken in multiples keeping the same ratio of reagent to specimen/standard.
3. Programmes for specific auto analyzers are available on request.
4. The rate of increase in the reagent blank absorbance can be reduced by ensuring the storage of reagent (highly photosensitive) at 2-8°C.
5. As with all the diagnostics procedures, the physician should evaluate data obtained by the use of this kit in light of other clinical information.

## REFERENCES

1. Bablock Wet al A General Regression Procedure for Method Transformation. J Clin Chem ClinBiochem 1988;26:783-790
2. Colombo J-P (ed) Klinisch - chemische Urindiagnostik. Rotkreuz: Labolive-Verlagsgesellschaft 1994:180
3. DiGiorgio J; Henry RJ, et al eds. Clinical Chemistry: Principles and Technics. 2nd ed. New York NY: Harper and Row; 1974:532.
4. Elking SM, Kabat HF. Am Soc Hosp Pharm. 1969;25:485.
5. Glick MR. Ryder KW. Jackson SA. Graphical Comparisons of Interferences in Clinical Chemistry Instrumentation, Clin Chem 1986;32:470-474
6. Greiling H, Gressner AM, eds. Lehrbuch der Klinischen Chemie und Pathobiochemie, 3re ed. Stuttgart/New York: Schattauer Verlag; 1995.

## Symbols Used on Pack

 REF	Catalogue Number		Warning/Caution
 LOT	Batch No.		In vitro diagnostic device
	Manufacturing Date		Storage Limit
	Expiry Date		Consult instruction for use
	Manufacturer		Keep away from sunlight
	Keep Dry		Do not use if package is damaged
	Contains sufficient no. of test		



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