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Uric Acid (UA) Content Assay Kit

BC3325 (60T/60S)

FOR RESEARCH USE ONLY, DO NOT USE IT IN CLINICAL DIAGNOSIS

Product Description

Uricase transforms uric acid into allantoin, with formation of hydrogen peroxide. In presence of peroxidase (POD) it reacts with ethyl-sulphopropyl toluidine (TOOS) and 4-aminophenazone, to produce a colored complex whose color intensity is directly proportional to the uric acid concentration in the sample.

Enzymatic determination of uric acid according to the following reactions.

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

$$2H_2O_2 + 4\text{-Aminoantipyrine} + \text{TOOS} \xrightarrow{\text{Peroxidase}} \text{Quinoneimine} + 4H_2O$$

TOOS: N-Ethyl-N-(2-Hydroxy-3-Sulfopropyl)m-Toluidine

Kit components

Reagent/ Component	Volume	Storage
Working Reagent	2 × 30mL	2-8°C
Standard	1 × 4mL	2-8°C

Open Vial Stability

Once opened, the reagent is stable up to 4 weeks at 2-8°C, if contamination is avoided.

Reagent Deterioration

Turbidity or precipitation in any kit component indicates deterioration and the component must be discarded. Values outside the recommended acceptable range for the Qualicheck Norm & Path control may also be an indication of reagent instability and associated results are invalid. Sample should be retested using a fresh vial of reagent.

Reagent Preparation

Uric Acid Reagent & standard are ready to use.

Precaution

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

Operation Procedures

Sample Preparation

1. **Serum or Plasma**
   Directly use for the assay.

2. **Saliva**
   Collect whole saliva by unstimulated passive drool. Donors may tilt the head forward, allowing the saliva to pool on the floor of the mouth, collect into a polypropylene vial.

   Note: Avoid sample collection within 60 minutes after eating a major meal, drinking green tea, Vitamin C or Vitamin C rich foods or within 12 hours after consuming alcohol. Acidic or high sugar foods can compromise assay performance by lowering sample pH and influencing bacterial growth. To minimize these factors, rinse mouth thoroughly with water 10 minutes before sample is collected.

Interferences

No interference for
Bilirubin up to 10 mg/dL
Haemoglobin up to 1000 mg/dL

Materials Required but Not Provided

Pipettes & Tips, Test Tubes & racks, Timer, Incubator, Analyzer

Unit Conversion

Traditional Unit	SI Unit	Conversion from Traditional to SI
mg / dL	mmol/L	× 0.059

Procedure Notes

Reagent	Blank	Calibrator	Sample/control
Working Reagent	1000µL	1000 µL	1000 µL
Standard	-	25µL	-
Sample	-	-	25µL
Mix & incubate for 5 minutes at 37°C. Read the absorbance of standard and sample against reagent blank. Wavelength of absorbance is 630nm			

Absorbance of Sample: A_T
Absorbance of Standard: A_S

Calculation

Uric Acid Concentration (mg/dL) = $A_T \div A_S \times 8$

Performance

a. Linearity

This reagent is linear up to 25mg/dL.
If the concentration is greater than linearity (25mg/dL) dilute the sample with normal saline and repeat the assay. Multiply the result with dilution factor.

b. Sensitivity

Lower detection Limit is 0.2mg/dL.