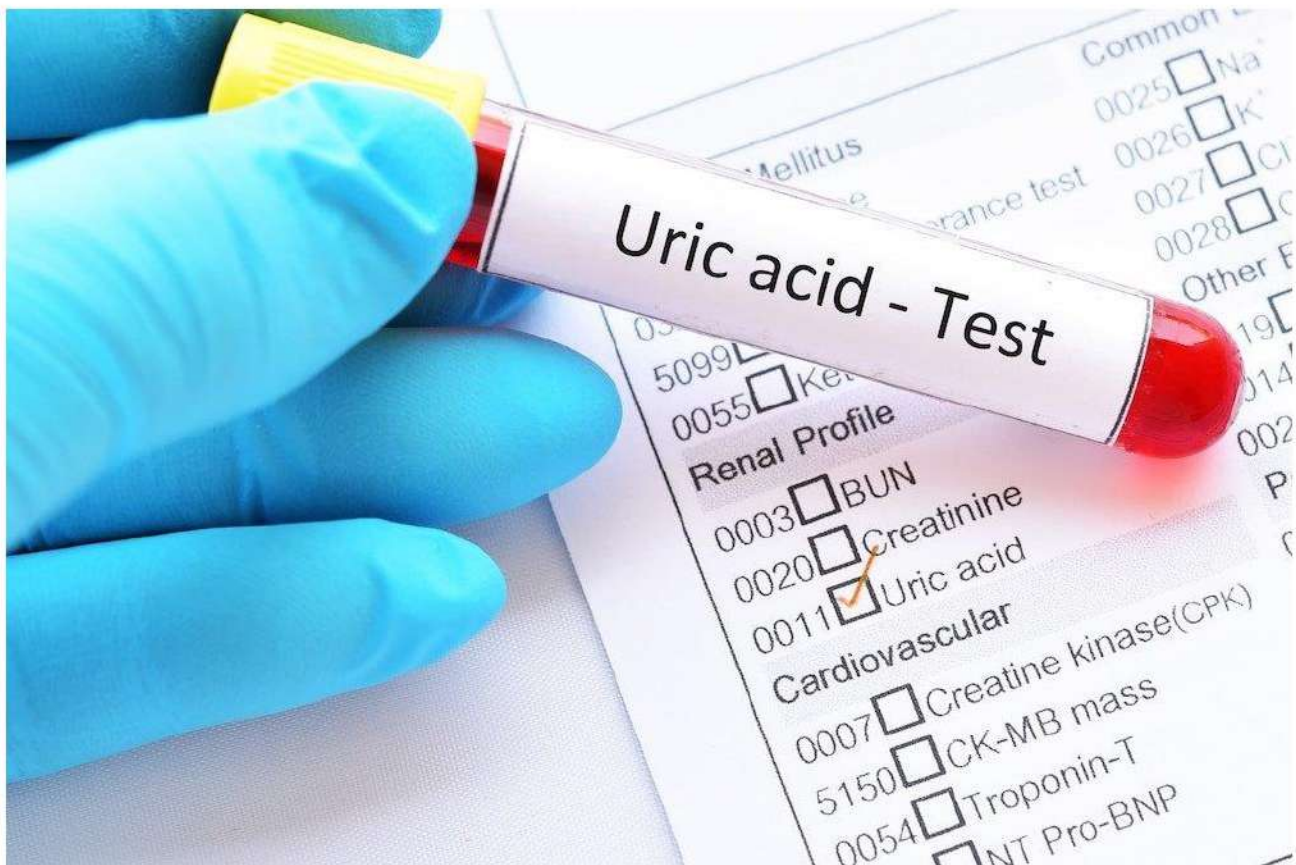
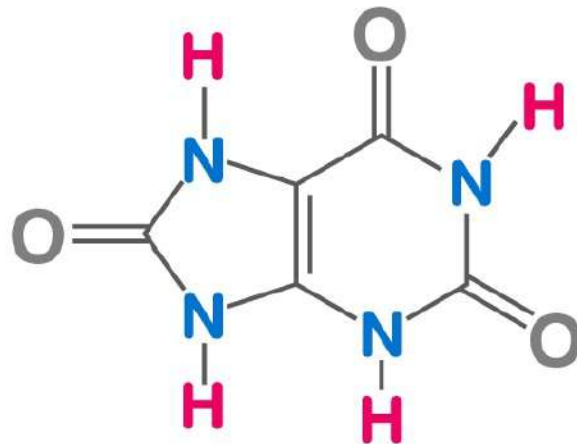




Estimation of Serum Uric Acid



(lab. 4) Clinical Biochemistry

Uric acid is the waste product of purine metabolism in humans, and it has exogenous source (red meat, liver, stimulants in coffee and tea) and endogenous source (nucleic acid catabolism). Liver is the main site of uric acid formation. Plasma uric acid is filtered by the glomeruli and about 90 % is reabsorbed by the tubules.

Clinical Significance

Determination of S. Uric acid is most helpful in the diagnosis of gout, where sodium urate is deposited in solid form in and around the joints.

Hyperuricemia:

Increased level of serum uric acid is found in

1. Acute and chronic nephritis
2. Urinary obstruction
3. High purine diet
4. Diabetic ketoacidosis
5. Malignant tumors.

Hypouricemia:

1. Proximal renal damage.
2. Xanthine oxidase deficiency.
3. Salicylate and cinchophen therapy.

The normal range of blood uric acid is 3.5-7.2 mg/dl.

(lab. 4) Clinical Biochemistry

Principle:

Uric acid is oxidized by uricase enzyme to allantoin and hydrogen peroxide, the peroxide will oxidize 2,4 Dichlorophenol sulfonate by the action of peroxidase enzyme to give colored complex.

Procedure:

1. Pipette into labeled tubes:

	Test	Blank	Standard
Working reagent	1 ml	1 ml	1 ml
Sample	20 μ l	---	---
Standard	----	---	20 μ l

2. Mix and incubate for 10 minutes at room temperature or 5 min. at 37 C.
3. Read the absorbance at 520 nm against the reagent blank.

$$\text{Serum uric Acid conc.} = \frac{A_{\text{serum}}}{A_{\text{standard}}} \times \text{Std. concentration (6 mg/dl)}.$$