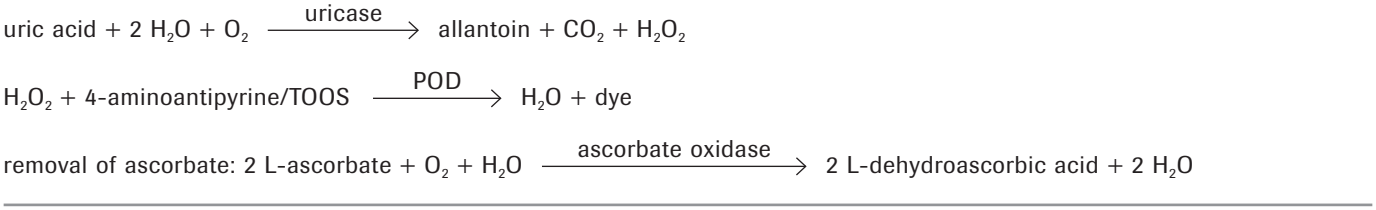
CUSTOMBIOTECH

Uric Acid

Test principle: Enzymatic colorimetric



The oxidation of uric acid provides the basis 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. This method is, however, subject to interference from drugs and reducing substances other than uric acid.
A second approach, described by Praetorius and Poulson, utilizes the enzyme uricase to oxidize uric acid; this method eliminates the interference 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 enzymes to provide a colorimetric assay.
Another method is the colorimetric method developed by Town *et al.* The sample is initially incubated with a reagent mixture containing ascorbate oxidase and a clearing system. In this test system, it is important that any ascorbic acid present in the sample is eliminated in the preliminary reaction; this precludes any ascorbic acid interference with the subsequent POD indicator reaction. Upon addition of the starter reagent, oxidation of uric acid by uricase begins. In the assay described here, the peroxide reacts in the presence of peroxidase (POD), TOOS* and 4-aminoantipyrine to form a quinone-imine dye. The intensity of the red color formed is proportional to the uric acid concentration and is determined photometrically.

The color intensity of the quinone-diimine formed is directly proportional to the uric acid concentration and is determined by measuring the increase in absorbance at 552 nm.

* TOOS = N-ethyl-N-(2-hydroxy-3-sulfopropyl)-3-methylaniline

Proposed reagent composition →

Products are for further processing only.

Proposed reagent composition

approximately 5+1 formulation

Reagent 1

Composition	Concentration	Catalog Number
Buffer (phosphate, pH 7.8)	50 mmol/l	
TOOS	7 mmol/l	11 650 670 103
Fatty alcohol polyglycol ether	4.8 %	
Ascorbate oxidase (AOD)	>5 kU/l	10 199 605 103
Detergent, preservative		

Note: Avoid chloride ions due to assay disruption.

Reagent 2

Composition	Concentration	Catalog Number
Buffer (phosphate, pH 7.8)	100 mmol/l	
Potassium hexacyanoferrate (II)	0.3 mmol/l	
4-Aminoantipyrine	>3.0 mmol/l	10 073 474 001
Uricase	>5 kU/l	10 828 475103
Peroxidase (POD)	>3 kU/l	11 378 783103
Detergent, preservative		

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