

Uricase

Catalogue No. URIC-70-1701 and 70-1701-01
 E.C. Number 1.7.3.3

ORIGIN

Bacillus fastidiosus

SPECIFICATIONS

Appearance White/off white free flowing powder
 Powder activity >10 U/mg powder at 37°C
 Specific activity >15 U/mg protein at 37°C
 Contaminants:
 o Catalase <1%
 o Cholesterol Oxidase <0.005%
 o Glucose Oxidase <0.005%
 Stability Stable for 1 year stored at -20°C

ASSAY PRINCIPLE

Uricase catalyses the following reaction:



APPLICATION

Uricase can be used (in test strips or other clinical chemistry formats) to determine the level of uric acid in blood for clinical diagnosis.

UNIT DEFINITION

One unit of activity is defined as the amount of enzyme that will catalyse the oxidation of 1.0 micromole of uric acid per minute at 37°C under the standard assay method conditions (available on request).

TABLE 1 Temperature factors for unit conversion	
Assay Temp	Factor Relative to 37°C Result
25°C	0.23
30°C	0.48
37°C	1.00
45°C	1.16

Note: Temperature can influence the level of available oxygen in the reaction mixture.

CHARACTERISTICS

Uricase is a highly purified product and is formulated with BSA as stabiliser. Its main characteristics are as follows:

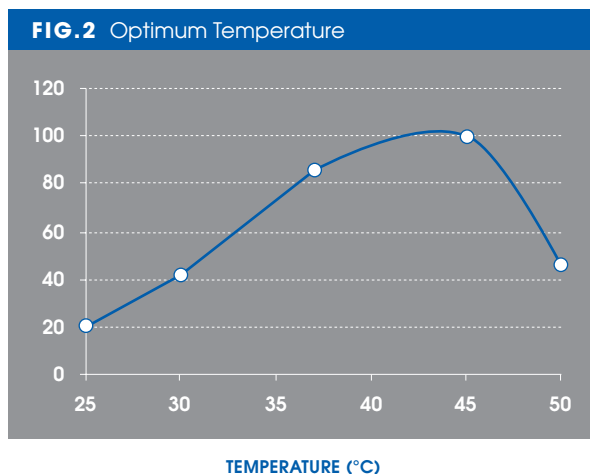
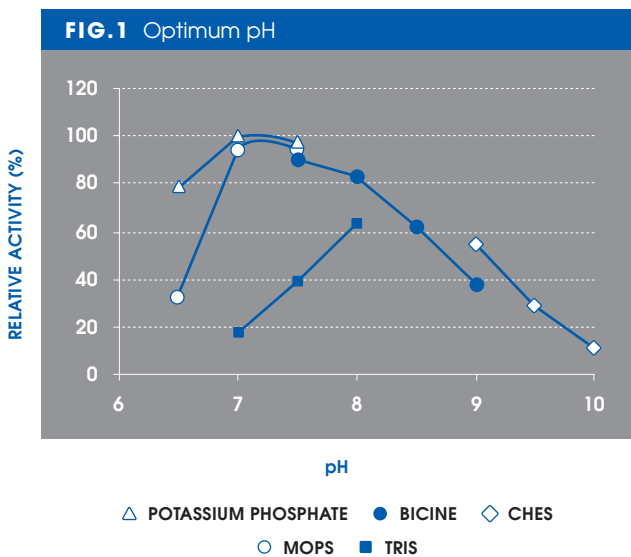
- Molecular Weight (by SDS Page) 38kD
- K_m value (calculated using Eadie-Hofstee) 2×10^{-4} M (Uric Acid)
- Optimum pH (Fig. 1) pH 7.0 (phosphate buffer)
- Optimum temperature (Fig. 2) 45°C
- Stable pH range (Fig. 3) pH 5.5 to 10.0 (25°C for 20 hours)
- Thermal stability (Fig. 4) 60 min at 50°C and below
- Lyophilised stability Up to 50°C (pH 7.0 for 15 mins)

Substrate Specificity

Substrate specificity was tested in-house by replacing uric acid with alternative substrates in the assay i.e. at 2.3 mM concentration.

TABLE 1 Substrate specificity

Substrate	% of Uric Acid Activity
Uric acid	100
8-Azaxanthine	0
Oxonic acid	0



Note: Uric acid is particularly insoluble under acidic conditions and so determination of uricase activity below a pH of 6.5 was not deemed practicable.

