

URICASE

from Microorganism

Urate: oxygen oxidoreductase (EC 1.7.3.3)



PREPARATION and SPECIFICATION

Appearance	: White amorphous powder, lyophilized	
Activity	: 40U/mg-solid or more	
Contaminants	: Catalase	≤1.0×10%
Stabilizers	: Borate, EDTA, nonionic detergents	

PROPERTIES

Stability	: Product shipped on dry ice, but long-term storage should be at -20°C.	
Molecular weight	: 34 kDa (SDS-PAGE)	
Isoelectric point	: 8.4	
Michaelis constant	: 5.4×10 ⁻⁵ M (Uric acid)	
Inhibitors	: Fe ³⁺ , Cu ²⁺ , Hg ²⁺ , Ag ⁺ , NEM, SDS, ProClin-300	
Optimum pH	: 8.5	(Fig.1)
Optimum temperature	: 50°C	(Fig.2)
pH stability	: pH 6.0~10.5 (25°C, 20hr)	(Fig.3)
Thermal stability	: below 60°C (pH 8.5, 10 min)	(Fig.4)
Effect of various chemicals	: (Table 1)	

UNIT DEFINITION

One unit causes the oxidation of one micromole of uric acid per minute at pH 8.5 at 25°C.

APPLICATIONS

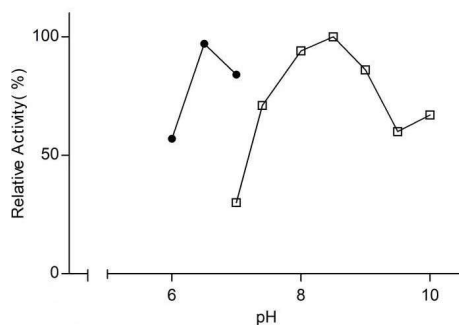
This enzyme is useful for enzymatic determination of uric acid in clinical analysis.

Manufactured in an ISO 9001 certified facility: Suzhou SignalChem Biotechnologies Corp.

Table 1. Effect of Various Chemicals on Uricase

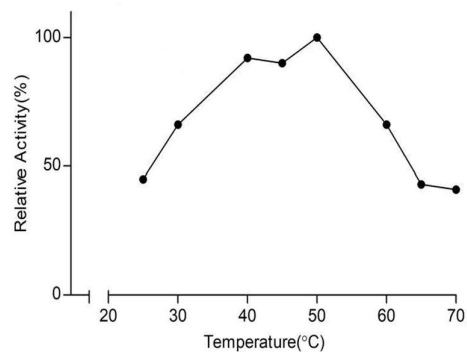
The enzyme was dissolved in 20mM borate buffer, pH8.5 containing 0.001% Triton X-100 and 1.0mM EDTA and incubated with each chemical at 25°C for 1hr.

Chemical	Concn.(mM)	Residual activity(%)	Chemical	Concn.(mM)	Residual activity(%)
None	—	100	BME	2	94
CaCl ₂	2	99	Hydroxylamine	2	91
MgSO ₄	2	110	EDTA	5	94
ZnSO ₄	2	99	NaF	20	93
NiCl ₂	2	103	NaN ₃	20	96
CoCl ₂	2	93	Borate	50	109
MnCl ₂	2	108	Proclin-300	0.045% (v/v)	61
FeCl ₃	2	57	SDS	0.05%	42
CuSO ₄	2	0	Na-Cholate	0.1%	103
AgNO ₃	2	2	Tween-20	0.1% (v/v)	101
HgSO ₄	2	0	Triton X-100	0.1% (v/v)	110
NEM	2	14	Span-20	0.1% (v/v)	103
IAA	2	104	Brij-35	0.1%	98

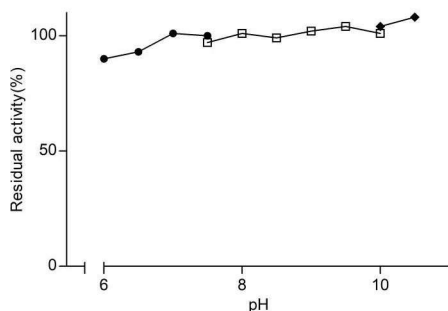
Fig.1. pH Activity


25°C in the following buffer solution:

- 50mM K-phosphate buffer
- 20mM Borate buffer

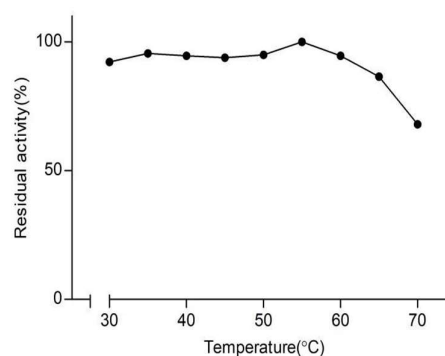
Fig.2. Temperature Activity


in 20mM Borate buffer, pH 8.5

Fig.3. pH Stability


25°C, 20hr-treatment with following buffer solution:

- 100mM K-phosphate buffer
- 20mM Borate buffer
- ◆ 100mM Glycine-NaOH

Fig.4. Thermal Stability


15min- treatment with 20mM Borate buffer, pH8.5