

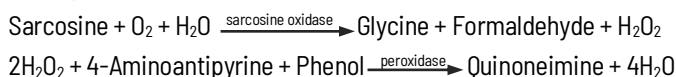
SPECIFICATION SHEET

Product Name: Sarcosine Oxidase
Catalog # SX01D1-E311H

Product Description: This enzyme is a diagnostic grade reagent from a microorganism host. It is useful for enzymatic determination of creatinine, creatine and sarcosine when coupled with creatinine amidohydrolase and creatine amidinohydrolase in clinical analysis.

EC 1.5.3.1

Storage and Stability: Product can be stored at 2~8°C for transportation process up to ten days but long-term storage should be at -20°C.

Principle:


Unit Definition	: One unit causes the formation of one micromole of hydrogen peroxide (half a micromole of quinoneimine dye) per minute at pH 8.0 and 37°C.	
Appearance	: Yellow amorphous powder, lyophilized	
Activity	: ≥10 U/mg solid	
Molecular Weight	: 44.0 kDa	
Contaminants	: Catalase	≤1.0 %
Stabilizers	: Sucrose	
Isoelectric Point	: 5.61	
Michaelis Constant	: 6.938×10^{-3} M (sarcosine)	
Inhibitors	: Cu^{2+} , Ag^+ , Hg^{2+} , NEM	
Optimum pH	: 7.5	(Figure 1)
Optimum Temperature	: 55 ~ 60°C	(Figure 2)
pH Stability	: pH 6.5–9.5 (25°C, 24 hr)	(Figure 3)
Thermal Stability	: Below 55°C (pH 7.5, 30 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on Sarcosine Oxidase

The enzyme dissolved in 50 mM K-phosphate buffer, pH 7.5 (10 U/mL) was incubated with each chemical at 30°C for 30 minutes.

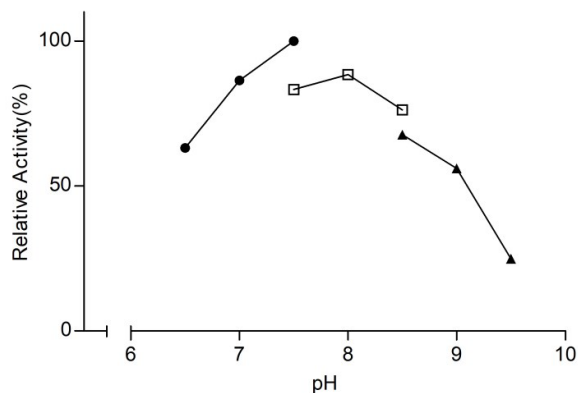
Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
None	—	100	BME	2	95
CaCl_2	2	95	Hydroxylamine	2	95
MgSO_4	2	91	EDTA	5	96
ZnSO_4	2	92	NaF	20	93
NiCl_2	2	77	NaN_3	20	75
CoCl_2	2	87	Proclin-300	0.045% (v/v)	85
MnCl_2	2	95	SDS	0.05% (w/v)	81
FeCl_3	2	95	Na-Cholate	0.1% (w/v)	95
CuSO_4	2	15	Tween-20	0.1% (v/v)	95

Table 1(Continued)

Chemical	Conc. (mM)	Residual activity (%)
AgNO ₃	2	3.3
HgSO ₄	2	2.4
NEM	2	68
IAA	2	97

Chemical	Conc. (mM)	Residual activity (%)
Triton X-100	0.1% (v/v)	106
Span-20	0.1% (v/v)	102
Brij-35	0.1% (w/v)	101

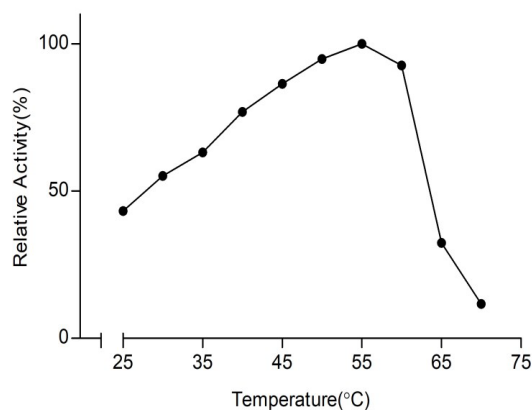
Fig.1. pH-Activity



37°C in the following solution:

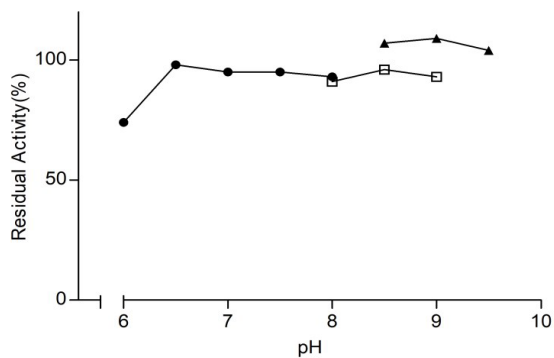
- 0.1M K-phosphate buffer
- 0.1M Tris-HCl buffer
- ▲ 0.1M Glycine-NaOH buffer

Fig.2. Temperature Activity



in 0.1M Tris-HCl buffer, pH8.0

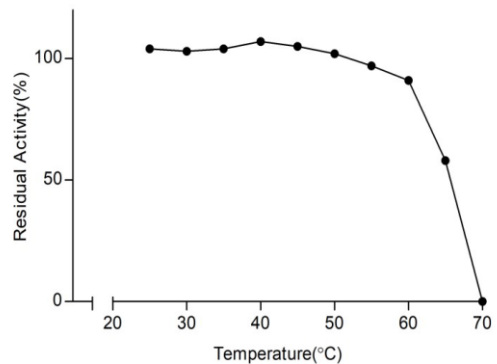
Fig.3. pH Stability



25°C 24hr-treatment with 0.1M buffer solution:

- K-phosphate buffer
- Tris-HCl buffer
- ▲ Glycine-NaOH buffer

Fig.4. Thermal Stability



30min-treatment with 50mM K-phosphate buffer, pH7.5