

SPECIFICATION SHEET

Product Name: Cystathionine-β-lyase
Catalog # CY02D1-E311H

Product Description: Cystathionine-β-lyase is a diagnostic grade reagent from a microorganism host. This enzyme is useful for enzymatic determination of L-homocysteine when coupled with cystathionine β-synthase and lactate dehydrogenase in clinical analysis.

EC 4.4.1.13

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:

L-cystathionine + H₂O $\xrightarrow{\text{Cystathionine-}\beta\text{-lyase}}$ L-homocysteine + NH₃ + Pyruvate

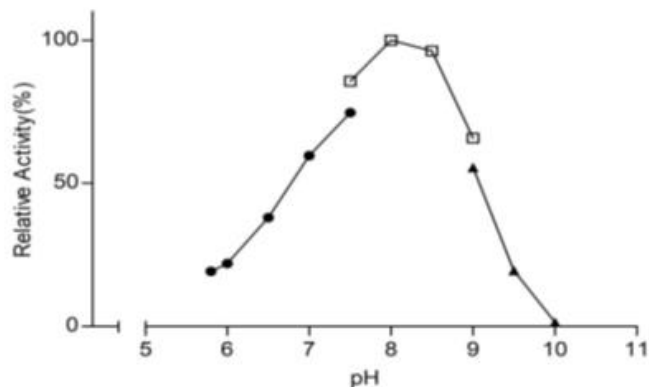
Unit Definition	: One unit hydrolyzes one micromole of cystathionine per minute at pH 8.0 and 37°C.	
Appearance	: Yellowish amorphous powder, lyophilized	
Activity	: ≥30 U/mg solid	
Stabilizers	: Pyridoxal phosphate (PLP)	
Molecular Weight	: 44.5 kDa	
Isoelectric Point	: 6.3	
Michaelis Constant	: 3.74×10^{-4} M (L-Cystathionine)	
Inhibitors	: Metal ions, NEM, SDS	
Optimum pH	: 8.0 ~ 8.5	(Figure 1)
Optimum Temperature	: 37°C	(Figure 2)
pH Stability	: pH 6.5-8.5 (25°C, 20 hr)	(Figure 3)
Thermal Stability	: Below 40°C (pH 7.5, 30 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on Cystathionine-β-lyase

The enzyme dissolved in 50 mM Tris-HCl buffer, pH 8.0 (ca.20 U/mL) was incubated with each chemical at 37°C for 2 hr.

Chemical	Conc. (mM)	Residual activity (%)	Chemical	Conc. (mM)	Residual activity (%)
None	—	100	BME	2	81.4
CaCl ₂	2	100.1	Hydroxylamine	2	7.6
MgSO ₄	2	94	EDTA	5	84
ZnSO ₄	2	0	NaF	20	79.6
NiCl ₂	2	0	NaN ₃	20	80
CoCl ₂	2	11	Proclin-300	0.045% (v/v)	26
MnCl ₂	2	24	SDS	0.05% (w/v)	0
FeCl ₃	2	32	Na-Cholate	0.1% (w/v)	90
CuSO ₄	2	0	Tween-20	0.1% (v/v)	110
AgNO ₃	2	0	Triton X-100	0.1% (v/v)	99
HgSO ₄	2	0	Span-20	0.1% (v/v)	102
NEM	2	0	Brij-35	0.1% (w/v)	106
IAA	2	5			

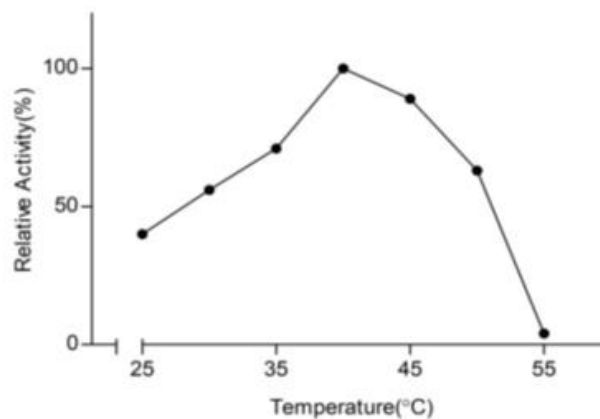
Fig.1. pH-Activity



25°C in the following solution:

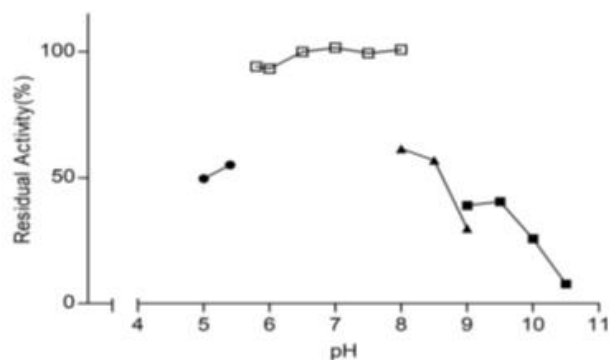
- 50mM K-phosphate buffer
- 50mM Tris-HCl buffer
- ▲ 50mM Glycine-NaOH buffer

Fig.2. Temperature Activity



in 56mM Tris-HCl buffer, pH8.6

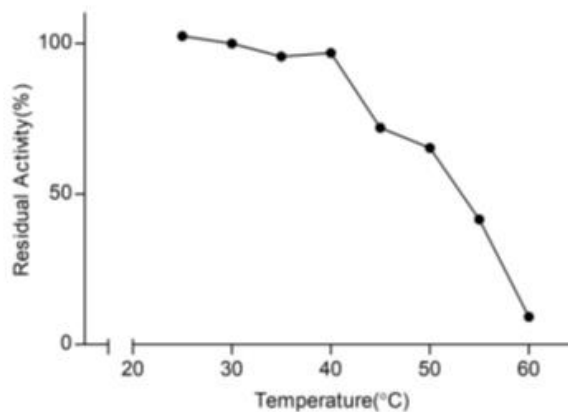
Fig.3. pH Stability



25°C 20hr-treatment with 0.1M buffer solution:

- Acetate buffer
- K-phosphate buffer
- ▲ Tris-HCl buffer
- K₂CO₃-NaHCO₃ buffer

Fig.4. Thermal Stability



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