

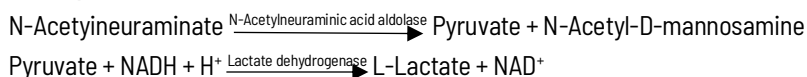
SPECIFICATION SHEET

Product Name: N-Acetylneuraminic Acid Aldolase
Catalog # AA01D1-E311H

Product Description: N-Acetylneuraminic acid aldolase is a diagnostic grade reagent from a microorganism host. This enzyme is useful for enzymatic determination of N-acetylneuraminic acid and sialic acid when coupled with the related enzyme in clinical analysis.

EC 4.1.3.3

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:


The disappearance of NADH is measured at 340 nm by spectrophotometry.

Unit Definition	: One unit causes the oxidation of one micromole of NADH per minute at pH 7.5 and 37°C	
Appearance	: Yellowish amorphous powder, lyophilized	
Activity	: ≥15 U/mg solid	
Contaminants	: Catalase	≤1.0 %
	: NADH oxidase	≤1.0 × 10 ⁻³ %
Stabilizers	: Mannitol, EDTA	
Molecular Weight	: 33.9 kDa	
Isoelectric Point	: 6.22	
Michaelis Constant	: 2.8 × 10 ⁻³ M (N-Acetylneuraminic acid)	
Inhibitors	: Co ²⁺ , Cu ²⁺ , Ag ²⁺ , Hg ²⁺ , NEM, Proclin	
Optimum pH	: 7.5 ~ 8.0	(Figure 1)
Optimum Temperature	: 50°C	(Figure 2)
pH Stability	: pH 4.5 – 10.5 (25°C, 25 hr)	(Figure 3)
Thermal Stability	: Below 80°C (pH 7.5, 30 min)	(Figure 4)
Effect of Various Chemicals	: (Table 1)	

Table 1. Effect of Various Chemicals on N-Acetylneuraminic Acid Aldolase

The enzyme dissolved in 50 mM K-phosphate buffer, pH 7.5 (10 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	98
CaCl ₂	2	93	Hydroxylamine	2	101
MgSO ₄	2	92	EDTA	5	95
ZnSO ₄	2	121	NaF	20	99
NiCl ₂	2	130	NaN ₃	20	97
CoCl ₂	2	64	Proclin-300	0.045% (v/v)	56
MnCl ₂	2	93	SDS	0.05% (w/v)	86
FeCl ₃	2	94	Na-Cholate	0.1% (w/v)	102

Table 1 (Continued)

Chemical	Conc. (mM)	Residual activity (%)
CuSO ₄	2	0
AgNO ₃	2	1
HgSO ₄	2	1
NEM	2	2
IAA	2	87

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

Fig.1. pH-Activity

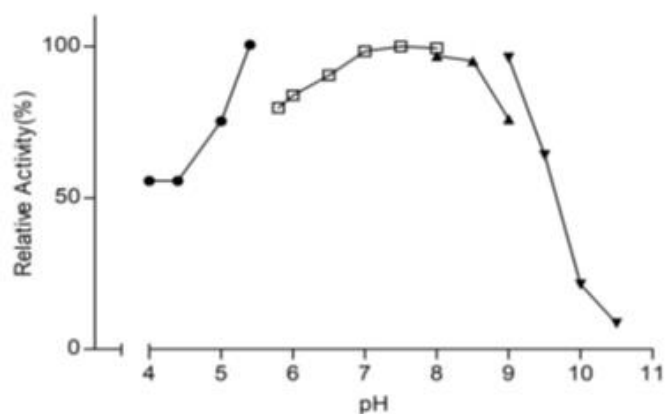


Fig.2. Temperature Activity

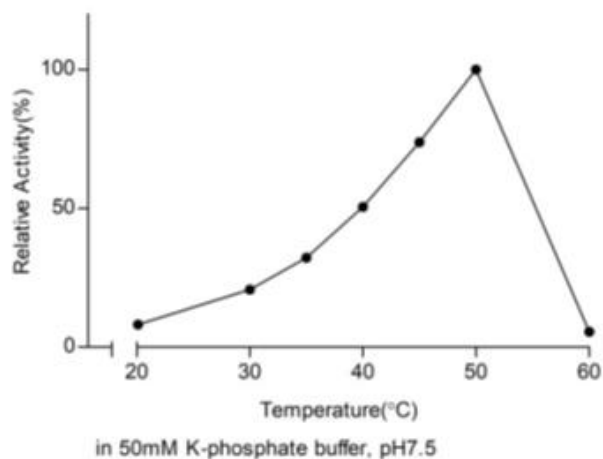


Fig.3. pH Stability

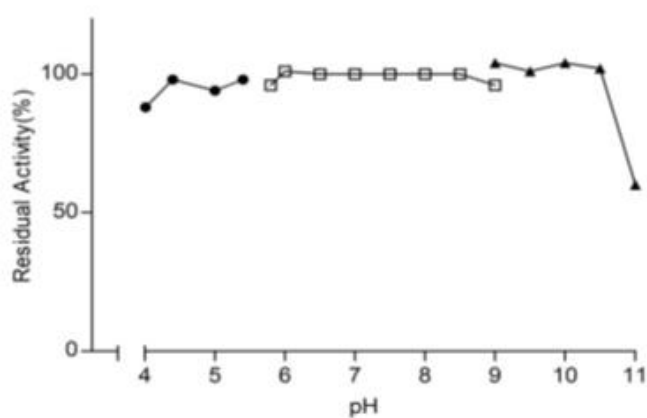


Fig.4. Thermal Stability

