

N-ACETYLNEURAMINIC ACID ALDOLASE

REACTION:



PRODUCT DESCRIPTION

Catalog No.:	qs50017
Appearance:	Light yellowish amorphous powder
Source:	Microorganism
Enzyme Commission Number:	EC 4.1.3.3
CAS Number:	9027-60-5
Storage temperature:	-20°C
Specific activity:	≥ 45U/mg protein
Unit definition:	One unit will convert one micromole of N-Acetylneuraminate to N-Acetyl-D-mannosamine per minute at pH 7.5 at 37°C.

PROPERTIES

Molecular weight:	33 kDa (SDS-PAGE)	
Isoelectric point:	6.4	
Michaelis constant:	2.5×10 ⁻³ M(N-Acetylneuraminic acid)	
Optimum pH:	7.5-8.0	{Fig. 1}
Optimum temperature:	50°C	{Fig. 3}
pH Stability:	5.0~9.5(25°C, 25hr)	{Fig. 2}
Thermal stability:	< 65°C (pH 7.5, 10min)	{Fig. 4}
Inhibitors:	Co ²⁺ , Cu ²⁺ , Zn ²⁺ , NEM, Proclin	
Effect of various chemicals:		{Table 1}

Table 1.

Effect of Various Chemicals on NAL

[The enzyme dissolved in 50mM K-phosphate buffer, pH 7.5 (10U/ml) was incubated with each chemical at 37°C for 2hr.]

Chemical	Concn. (mM)	Residual activity
None	-	100%
CaCl ₂	2.0	99%
CoCl ₂	2.0	46%
CuSO ₄	2.0	3%
FeCl ₃	2.0	97%
MgSO ₄	2.0	97%
MnSO ₄	2.0	98%
NiCl ₂	2.0	91%
ZnSO ₄	2.0	41%
BME	2.0	94%

Chemical	Concn. (mM)	Residual activity
NEM	2.0	20%
EDTA	5.0	102%
NaN ₃	20.0	101%
Proclin	0.045%	1%
Boric Acid-Borax	2.0	94%
Na-cholate	0.10%	99%
SDS	0.05%	100%
Triton X-100	0.10%	95%
Tween 20	0.10%	96%

