

3 α -HYDROXYSTEROID DEHYDROGENASE

3 α -Hydroxysteroid:NAD(P)⁺ oxidoreductase

REACTION:



PRODUCT DESCRIPTION

Catalog No.:	qs50011
Appearance:	White amorphous powder
Source:	Microorganism
Enzyme Commission Number:	EC 1.1.1.50
CAS Number:	9028-56-2
Storage temperature:	-20°C
Specific activity:	≥ 90U/mg protein
Unit definition:	One unit will oxidate one micromole of androsterone per min at pH 8.25 at 25°C.

PROPERTIES

Molecular weight:	28 kDa (SDS-PAGE)	
Isoelectric point:	6.4	
Michaelis constant:	3.0 × 10 ⁻⁵ M(androsterone) 6.0 × 10 ⁻⁶ M(NAD ⁺)	
Optimum pH:	10.5	{Fig. 1}
Optimum temperature:	60°C	{Fig. 3}
pH Stability:	4.5~10.5(30°C,20hr)	{Fig. 2}
Thermal stability:	< 50°C (pH 7.2, 20min)	{Fig. 4}
Inhibitors:	Cu ²⁺ , Fe ³⁺ , Zn ²⁺ , NEM, Proclin, SDS	
Effect of various chemicals:		{Table 1}

Table 1.

Effect of Various Chemicals on HSD

[The enzyme dissolved in 50mM Tris-HCl 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	97%
CoCl ₂	2.0	93%
CuSO ₄	2.0	0%
FeCl ₃	2.0	44%
MgSO ₄	2.0	96%
MnSO ₄	2.0	92%
NiCl ₂	2.0	94%
ZnSO ₄	2.0	25%

Chemical	Concn. (mM)	Residual activity
BME	2.0	94%
NEM	2.0	0%
EDTA	5.0	99%
Proclin	0.045%	0%
NaN ₃	20.0	99%
Na-cholate	0.10%	100%
SDS	0.05%	0%
Triton X-100	0.10%	102%
Tween 20	0.10%	106%

Fig. 1 pH Activity

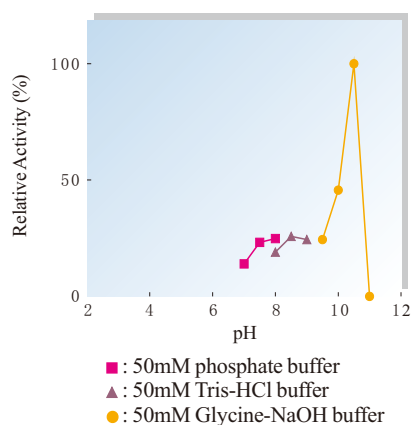


Fig. 3 Temperature activity

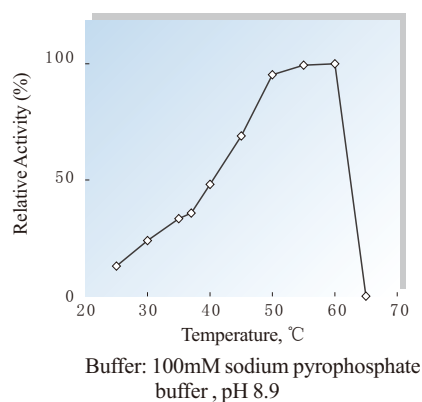


Fig. 2 pH Stability

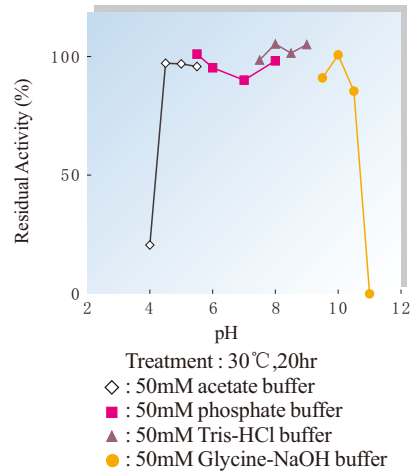


Fig. 4 Thermal stability

