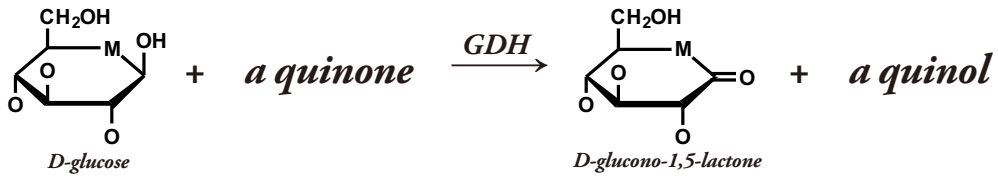
GLUCOSE DEHYDROGENASE
(FAD-DEPENDENT)

REACTION:



PRODUCT DESCRIPTION

Catalog No.:	SDZ500420
Appearance:	Yellow amorphous powder
Source:	Microorganism
Enzyme Commission Number:	EC 1.1.99.10
CAS Number:	37250-84-3
Storage temperature:	-20℃
Specific activity:	≥800U/mg protein
Unit definition:	One unit will oxidate one micromole of glucose per minute at pH 6.5 at 37℃.

PROPERTIES

Molecular weight:	97kD (SDS-PAGE)	
Isoelectric point:	6.0	
Michaelis constant:	6. 0×10^{-2}M (α D−Glucose)	
Optimum pH:	7.0	{Fig. 1}
Optimum temperature:	55℃	{Fig. 3}
pH Stability:	5.0-9.0 (25℃, 20hr)	{Fig. 2}
Thermal stability:	< 40℃ (pH7.0, 30min)	{Fig. 4}
Inhibitors:	Cu^{2+}, Zn^{2+}	
Effect of various chemicals:		{Table 1}

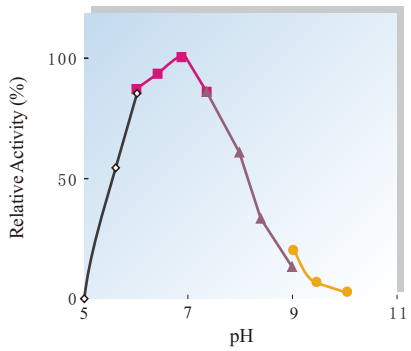
Table 1.

Effect of Various Chemicals on GDH (FAD-dependent)
[The enzyme dissolved in 50mM Tris-HCl buffer with 0.1% BSA, pH7.5 (10U/ml) was incubated with each chemical at 37℃ for 1.5hr.]

Chemical	Concn. (mM)	Residual activity
None	-	100%
$CaCl_2$	2.0	99%
$CoCl_2$	2.0	97%
$CuSO_4$	2.0	77%
$FeCl_3$	2.0	99%
$MgSO_4$	2.0	100%
$MnSO_4$	2.0	105%
$NiCl_2$	2.0	83%
$ZnSO_4$	2.0	55%

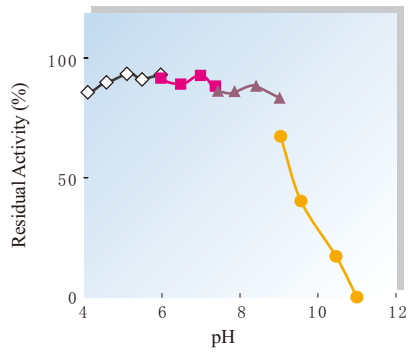
Chemical	Concn. (mM)	Residual activity
BME	2.0	95%
NEM	2.0	89%
EDTA	5.0	92%
NaN_3	20.0	91%
Na-cholate	0.10%	99%
SDS	0. 05%	94%
Triton X-100	0.10%	105%
Tween 20	0.10%	104%
Boric Acid-Borax	2.0	101%

Fig. 1 pH Activity



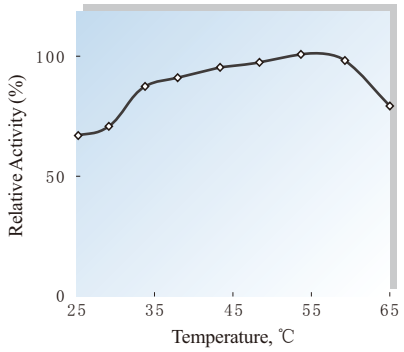
◇: 50mM acetate buffer
■: 50mM phosphate buffer
▲: 50mM Tris-HCl buffer
●: 50mM Glycine-NaOH buffer

Fig. 2 pH Stability



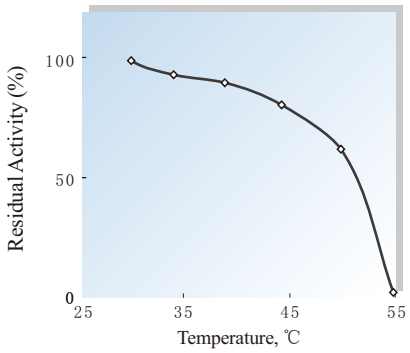
Treatment : 25℃,20hr
◇: 50mM acetate buffer
■: 50mM phosphate buffer
▲: 50mM Tris-HCl buffer
●: 50mM Glycine-NaOH buffer

Fig. 3 Temperature activity



Buffer: 50mM phosphate buffer, pH 7.0

Fig. 4 Thermal stability



Treatment: 50mM phosphate buffer, pH 7.0, 30min