

ENZYMES

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SORACHIM

Fructosyl-amino acid oxidase from Microorganism

FPO-301

SPECIFICATIONS

Product name	Fructosyl- α -L-amino acid:oxygen oxidoreductase
EC	1.5.3.x
Appearance	Yellowish amorphous powder, lyophilized
Molecular weight	approx. 48,000 (SDS-PAGE)
Activity	> 3.0 U/mg solid or more
Contaminants	Catalase: < 1 %
Stability	Stable at - 20 °C for at least 12 months
Michaelis constant	F-VH : 0.5×10^{-3} M
Substrate specificity	0.01 (F-K/F-VH) 1 (F-V/F-VH)
Isoelectric point	6.6
Optimum pH	6.5
Optimum temperature	40 - 45 °C
pH Stability	5.0 - 9.0
Thermal stability	below 55 °C (pH 6.5, 10min)

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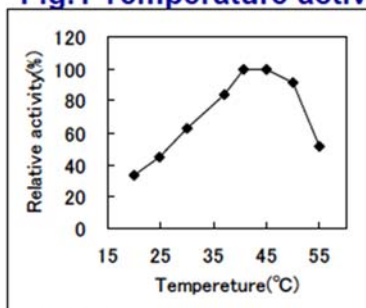
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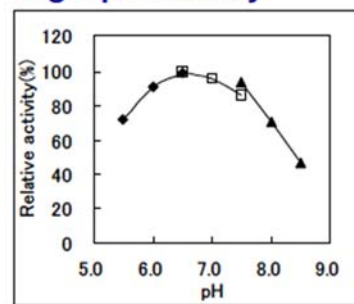
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Fig.1 Temperature activity



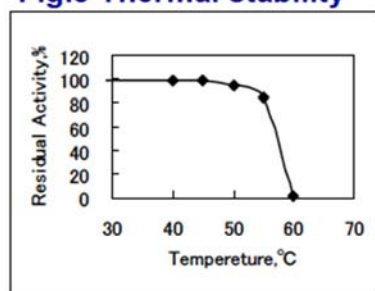
in 50mM MES buffer, pH6.5

Fig.2 pH-Activity



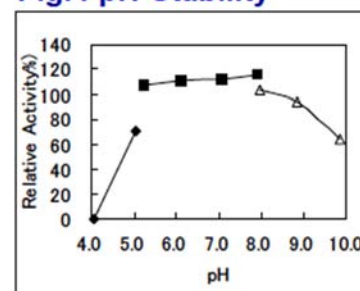
37°C in 50mM buffer solution; pH5.5-6.5, MES; pH6.5-7.5, PIPES; pH7.5-8.5, Tris-HCl

Fig.3 Thermal stability



10min-treatment with 50mM K-Phosphate buffer, pH6.5

Fig.4 pH-Stability



25°C 16hr-treatment with 50mM buffer solution; pH4.0-5.0 Acetate, pH5.0-8.0 K-phosphate, pH8.0-10.0 Borate

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Table 1. Effect of Various Chemicals

[The enzyme dissolved in 50mM K-phosphate buffer, pH6.5 (40U/ml) was incubated with each chemical for 1hr at 25 °C.]

Chemical	Concn.(mM)	Residual activity	Chemical	Concn.(mM)	Residual activity
None	–	100%	MIA	2	98
MgCl ₂	2	99	NaF	2	100
CaCl ₂	2	98	EDTA	5	100
Ba(OAc) ₂	2	98	o-Phenanthroline	2	100
FeCl ₂	2	91	Borate	50	99
CoCl ₂	2	99	IAA	2	96
MnCl ₂	2	98	NEM	2	60
Zn(OAc) ₂	2	100	Hydroxylamine	2	99
NiCl ₂	2	100	Triton X-100	0.10%	100
CuSO ₄	2	96	Brij 35	0.10%	101
AgNO ₃	2	10	Tween20	0.10%	101
			Span20	0.10%	99
			Na-cholate	0.10%	99
			SDS	0.05%	49
			DAC	0.05%	97

MIA, Monoiodoacetate; EDTA, Ethylenediaminetetraacetate; IAA, Iodoacetamide; NEM, N-Ethylmaleimide; SDS, Sodium dodecyl sulfate; DAC, Dimethyl-benzyl-alkyl-ammoniumchloride