

# ENZYMES

BY

# SORACHIM

## Pyruvate Oxidase from Microorganism

### PYO-311

#### SPECIFICATIONS

Name	Pyruvate: oxygen 2-oxidoreductase (phosphorylating)
EC	1.2.3.3
Appearance	Yellowish amorphous powder, lyophilized
Activity	Grade III, 1.5 U/mg-solid or more
Contaminants	ATPase : $\leq 5.0 \times 10^{-2} \%$ , GOT & GPT : $\leq 5.0 \times 10^{-2} \%$
Stabilizers	Sugars, FAD
Stability	Stable at - 20°C for at least 12 months
Molecular weight	approx. 260,000
Isoelectric point	4.3
Michaelis constant	$3.4 \times 10^{-4} \text{M}$ (Pyruvate)
Inhibitors	$\text{Fe}^{2+}$ , $\text{Zn}^{2+}$ , $\text{Cu}^{2+}$ , $\text{Ag}^+$ , $\text{Hg}^{2+}$
Optimum pH	5.7
Optimum temperature	65°C
pH Stability	pH 5.7 - 6.5 (25°C, 20hr)
Thermal stability	Below 45°C (pH 6.0, 15min)

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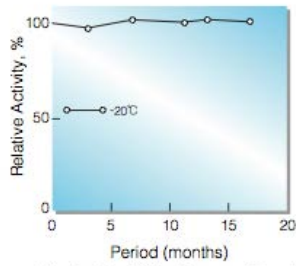
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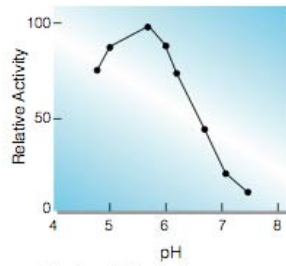
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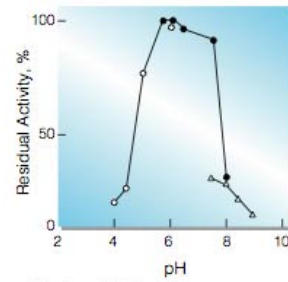
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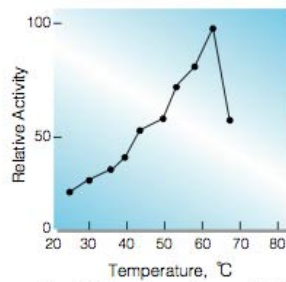
**Fig.1. Stability (Power form)**  
(kept under dry conditions)



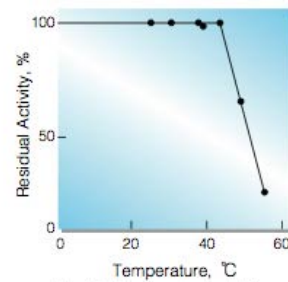
**Fig.2. pH-Activity**  
(37°C in 50mM K-phosphate buffer)



**Fig.4. pH-Stability**  
(25°C, 20hr-treatment with 50mM buffer solution (contg. 10mM MgSO<sub>4</sub>, 10 μM FAD, 0.2mM TPP), pH4.0-6.0, acetate; pH5.7-8.0 K-phosphate; pH7.5-9.0, Tris-HCl)



**Fig.3. Temperature activity**  
(in 50mM K-phosphate buffer, pH5.7)



**Fig.5. Thermal stability**  
(15min-treatment with 50mM K-phosphate buffer (contg. 10mM MgSO<sub>4</sub>, 10 μM FAD, 0.2mM TPP), pH6.0, enzyme concn.: 10U/ml)