

# ENZYMES

BY

# SORACHIM

## Protocatechuate 3,4-Dioxygenase from Pseudomonas sp.

### PCO-301

#### SPECIFICATIONS

Product name	Protocatechuate:oxygen 3,4 oxidoreductase (decyclizing)
EC	1.13.11.3
Appearance	Light brown amorphous powder lyophilized
Activity	Grade III, 3.0 U/mg-solid or more (containing approx. 40% stabilizers)
Contaminants	NADPH oxidase $\leq$ 0.1%
Stability	Stable at - 20°C for at least 12 months
Molecular weight	approx. 700,000
Michaelis constant	$1.85 \times 10^{-5}$ M (Protocatechuate)
Structure	Protein with nonheme iron
Inhibitors	Ag <sup>+</sup> , Hg <sup>2+</sup> , PCMB
Optimum pH	9.0
Optimum temperature	60 - 65°C
pH Stability	pH 7.0 - 9.0 (25°C, 72hr)
Thermal stability	below 50°C (pH 6.0, 1hr)

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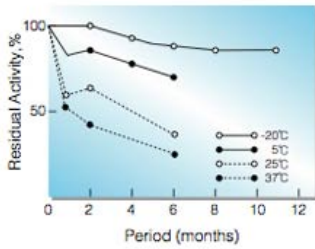


Fig.1. Stability (Powder form)  
(kept under dry conditions)

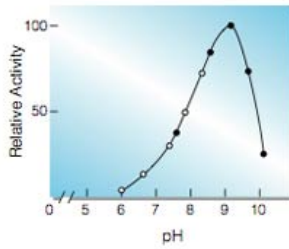


Fig.3. pH-Activity  
[ 37°C in 50mM buffer solution:  
pH6.0-8.0, Tris-acetate; pH7.5-10.5,  
glycine-NaOH ]

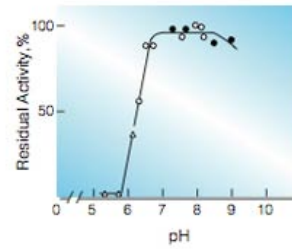


Fig.5. pH-Stability  
[ 25°C, 72hr-treatment with 50mM  
buffer solution: pH3.3-5.5,  
acetate; pH5.5-8.0 K-phosphate;  
pH6.5-9.0, Tris-acetate ]

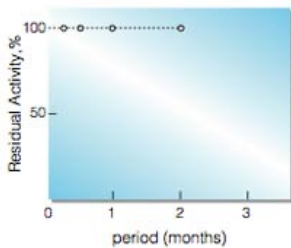


Fig.2. Stability (Liquid form at 25°C)  
[ enzyme concentraton: 35U/ml  
buffer composition: 50mM Tris-HCl buffer, pH7.8  
contg. 0.1% Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub> ]

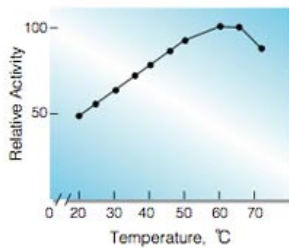


Fig.4. Temperature activity  
[ in 50mM K-phosphate buffer. pH7.5 ]

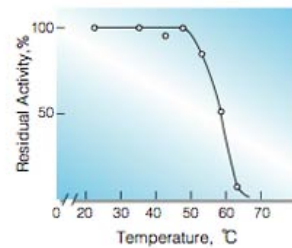


Fig.6. Thermal stability  
[ 1hr-treatment with 50mM K-phosphate  
buffer, pH6.0 ]

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