

rPCO

recombinant Protocatechuate 3,4-dioxygenase EC 1.13.11.3

from *Bacteria*

Reaction Equation

Protocatechuate + O₂ → 3-Carboxy-muconate

Specification

Specific Activity

U/mg protein > 3 units

Contaminants

NADPH oxidase < 0.01%

Alkaline phosphatase < 0.002%

Properties

pH stability : pH 5.5 - 9.5 (11 °C, 3 week)
 Thermal stability : ≤ 55 °C (pH 7.5, 15 min)
 Optimum pH : 9.0
 Optimum temp. : 65 °C
 Km value : 2.8 × 10⁻⁵ mol/L (Protocatechuate)
 Molecular weight : 28 kDa α subunit,
 24 kDa β subunit (SDS-PAGE)

Assay Procedure

I Spectrophotometric Method

Wavelength : 290 nm, Light path length : 1 cm

Final volume : 3.02 mL, Temperature : 37 °C

Pipette the following reagents into a cuvette

3.00 mL	Tris-acetate buffer (50 mmol/L, pH 7.2) containing Protocatechuate (0.4 mmol/L)
0.02 mL	rPCO (1.2 - 1.6 U/mL)

II Calculation

$$\frac{\Delta A/\text{min} \cdot V \cdot D}{3.8 \cdot d \cdot v} = \text{U/mL}$$

Δ A/min = The change in absorbance at 290 nm/minute

V = Total volume of reaction mixture (3.02 mL)

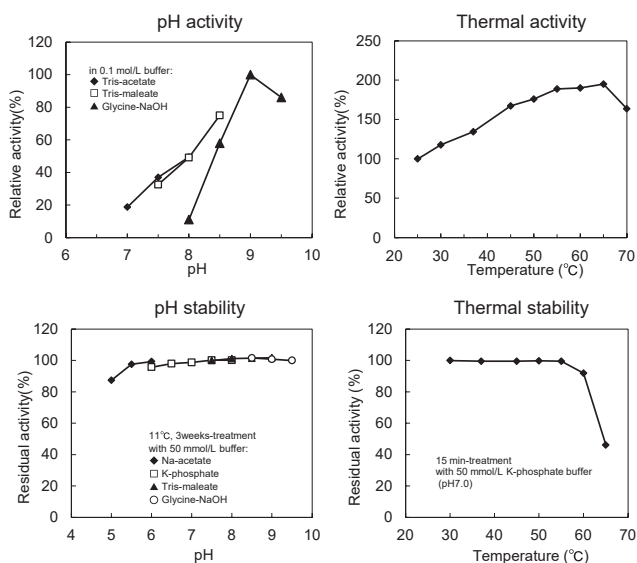
D = Enzyme dilution factor

3.8 = mmol/L extinction coefficient of Protocatechuate
 (L · mmol⁻¹ · cm⁻¹)

d = Light path length (1 cm)

v = Volume of enzyme sample (0.02 mL)

Reference Data



Preparation and Storage

Solution

Store at 1 - 10 °C (do not freeze)

Cat. No./Package

Cat. No. Package
 46852904 Bulk

