Pyruvate decarboxylase (PDC) extraction reagent

Cat. No.: P1518228 | Pack size: 500 mL | Storage: Store at 2-8°C, Protected from light; store PMSF at -20°C

Overview

Pyruvate decarboxylase (PDC), also known as α-carboxylase, is a carboxylase acting on α-keto acids. Pyruvate decarboxylase (PDC) and alcohol dehydrogenase (ADH) are key enzymes in the ethanol fermentation pathway. Both are up-regulated under hypoxic conditions. PDC activity is generally lower than ADH activity, making it the rate-limiting enzyme for ethanol synthesis. The accumulation of metabolites from the anaerobic respiration pathway is toxic to cells, affecting mitochondrial structure and the activities of enzymes involved in the tricarboxylic acid cycle.

Pyruvate Decarboxylase (PDC) Extraction Reagent is mainly used for lysing plant tissues and extracting pyruvate decarboxylase from samples. This reagent is for research use only and is not suitable for clinical diagnosis or other applications.

Components

P1518228	Component	500 mL	Storage
P1518228A	Pyruvate Decarboxylase Extraction Reagent	500 mL	2-8°C. Store in the dark.
P1518228B	PMSF	1 mL	-20°C. Store in the dark.

Materials Provided by User

1. Distilled water.

2. Centrifuge tubes or test tubes, homogenizer or mortar, refrigerated centrifuge.

Protocol (For Reference Only)

1. Collect plant tissue, clean thoroughly, and mince.

2. Prepare working solution of Pyruvate Decarboxylase Extraction Reagent.

Take Pyruvate Decarboxylase Extraction Reagent and PMSF to room temperature. Mix at a ratio of Pyruvate Decarboxylase Extraction Reagent: PMSF=499: 1. Use immediately after preparation; prolonged storage reduces the inhibitory efficiency of PMSF.

3. Mix minced plant tissue with pre-cooled working solution at a ratio of plant tissue: working solution=1 g: 4 mL. Homogenize or grind thoroughly in an ice bath.

4. Centrifuge at 12000 × g, 4 °C for 20 min. The supernatant is the crude pyruvate decarboxylase extract. Store at 4 °C for PDC detection or other analyses.

Calculation

Crude Enzyme Extract Yield (mL/g)=Supernatant Volume (mL)/Sample Weight (g) × 100%

Precautions

1. Use fresh experimental materials whenever possible. If not used immediately, store at −20 to −80 °C.

2. Test samples must not contain phosphatase inhibitors; avoid repeated freeze-thaw cycles.

3. If sample readings exceed the upper limit of the standard curve, dilute the sample with PDC extraction working solution and re-assay.

4. Use the reagent promptly after opening to avoid compromising experimental performance.

5. For your safety and health, wear a lab coat and disposable gloves during operation.

Specifications

Property	Value
Synonyms	Pyruvate Decarboxylase Extraction Reagent | PDC Extraction Reagent
Specifications & Purity	BioReagent,Suitable for plant cell and tissue extracts
Stability And Storage	Each component has a shelf life of 1 year under corresponding storage conditions.
Storage Conditions	Store at 2-8°C,Protected from light,Store at -20°C
Shipped In	Ice chest + Ice pads. This product requires cold chain shipping. Ground and other economy services are not available.

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Limitations & Disclaimer

- For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.
- This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to verified businesses, institutions, and qualified professionals for research and development purposes.
- Where any kit component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for handling, storage, and disposal information.
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