

Nitrate Reductase (NR) Extraction Reagent

Cat. No.: N1518233 | Pack size: 500 mL | Storage: Store at 2-8°C, Protected from light, Store at -20°C

Product Information

Item	Description
Synonyms	Nitrate Reductase Extraction Reagent NR 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.

Product Description

Nitrate Reductase (NR) is an oxidoreductase. It can be classified into assimilatory reductase involved in nitrate assimilation and dissimilatory (respiratory) nitrate reductase that catalyzes nitrate respiration with nitrate as the final electron acceptor for vital oxidation. Nitrate Reductase is a key enzyme for nitrogen assimilation in plant nitrogen metabolism. This enzyme is related to the absorption and utilization of nitrogen fertilizer by crops and affects crop yield and quality. Therefore, the activity of Nitrate Reductase can be used as a physiological and biochemical index for nutritional diagnosis, farmland fertilization, or crop breeding.

Nitrate Reductase (NR) Extraction Reagent is mainly used for lysing plant tissues and extracting Nitrate Reductase from samples. This reagent is for research use only and is not suitable for clinical diagnosis or other applications.

Contents & Storage

N1518233	Component	500 mL	Storage
N1518233A	Nitrate Reductase Extraction Reagent	500 mL	2-8. Store in the dark.
N1518233B	PMSF	1 mL	-20. Store in the dark.

Materials Provided by User

1. Distilled water.
2. Centrifuge tubes or test tubes.
3. Homogenizer or mortar.
4. Refrigerated centrifuge.

Protocol (For Reference Only)

1. Take 0.5 g of plant tissue, clean thoroughly, mince, and place in a -20°C refrigerator for 30 min.
2. Prepare Nitrate Reductase Extraction Working Solution:
Take Nitrate Reductase Extraction Reagent and PMSF to room temperature. Mix at a ratio of Nitrate Reductase Extraction Reagent: PMSF=499:1 to obtain Nitrate Reductase Extraction Working Solution (NR Lysis Buffer). Use immediately after preparation; prolonged storage reduces the inhibitory efficiency of PMSF.
3. Mix minced plant tissue with pre-cooled NR Lysis Buffer at a ratio of plant tissue: NR Lysis Buffer=0.5 g: 4 mL. Homogenize or grind thoroughly in an ice bath.
4. Centrifuge at 4000 × g, 4°C for 15-20 min. The supernatant is the crude Nitrate Reductase extract. Store at 4°C for NR 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. Nitrate Reductase is prone to inactivation. Perform extraction and assay rapidly, preferably at 4°C.

3. For plant samples, sampling is recommended on sunny days, with nitrate fertilizer applied one day in advance, and sampling position should be consistent.
4. Test samples must not contain phosphatase inhibitors; avoid repeated freeze-thaw cycles.
5. If sample readings exceed the upper limit of the standard curve, dilute the sample with Pyruvate Decarboxylase Extraction Working Solution and re-assay.
6. Use the reagent promptly after opening to avoid compromising experimental performance.
7. For your safety and health, wear a lab coat and disposable gloves during operation.

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office for your region; for general inquiries, the North American office is the corporate primary.

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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.
- ☐ Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the kit for their specific application.
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