
Neutral Red Hydrochloride Solution (4%)

Cat. No.: N1510329 | Pack size: 10 mL | Storage: Store at 2-8 °C, Protected from light

Overview

Acid α -Naphthyl Acetate Esterase (ANAE) Staining, also known as non-specific esterase staining, is based on the principle that under acidic conditions, acid esterase in cells hydrolyzes α -naphthyl acetate to produce α -naphthol. The α -naphthol then couples with hexazotized pararosaniline to form an insoluble red precipitate, localized in the cytoplasm.

Neutral Red Hydrochloride Solution (4%) is prepared from hydrochloric acid and new fuchsin, among other components. When mixed in equal proportions with a 4% nitrite solution, it produces hexazotized pararosaniline (a diazonium salt), which can be used for Acid α -Naphthyl Acetate Esterase (ANAE) staining. This reagent is intended for scientific research only and is not suitable for clinical diagnosis or other purposes.

Reagents, consumables and Equipments not provided

Microscope, glass slides, wet box, 4% nitrite solution, and other necessary supporting reagents for the experiment.

Operating Procedure (for reference only)

1. Fix blood, bone marrow, or cell smears, or frozen sections with formaldehyde-acetone buffer for 30–60 seconds. Rinse with water for 5 minutes.
2. Prepare the relevant staining incubation solution and proceed according to the operational workflow. Alternatively, refer to the Acid α -Naphthyl Acetate Esterase Staining Solution (ANAE method) for guidance.

Staining Results

Positive areas appear dark red or brown.

Precautions

1. Blood or bone marrow cell smears should be fresh and of appropriate thickness. Staining is generally recommended within 2 days to avoid affecting enzyme activity.

2. Hydrochloric acid pararosaniline solution contains hydrochloric acid and is somewhat corrosive. Handle with care.
3. Hydrochloric acid pararosaniline solution and nitrite solution should be mixed in equal proportions immediately before use. Wait for 1 minute before proceeding with further steps. Note that mixing these solutions produces irritating gases.
4. For safety and health, wear a lab coat and disposable gloves during operation.
5. After opening the reagent, use it as soon as possible to prevent affecting subsequent experimental results.

Specifications

Attribute	Value
Synonyms	Neutral Red Hydrochloride Solution (4% w/v) Neutral Red HCl Solution (4%)
Specifications & Purity	BioReagent, Biological Stain, 4%
Stability And Storage	Store at 2-8 °C long term (12 months). Store in the dark.
Storage	Store at 2-8 °C, Protected from light
Shipped In	Wet ice This product requires cold chain shipping. Ground and other economy services are not available.
Application	Cell Staining

Quality Control

QC Item	Method	Acceptable Range
Documentation review	Lot-specific COA and product label review	Catalog number, lot number, pack size, storage condition, and release status are consistent with approved records.
Appearance / integrity	Visual inspection on receipt	Container is intact; reagent appearance conforms to lot-specific specifications.
Functional suitability	Application-specific internal QC or reference procedure	Performance meets the approved lot-specific acceptance criteria.

Troubleshooting

Issue	Possible Causes	Corrective Action
Weak or no expected signal / staining / reaction	• Reagent not equilibrated or stored correctly • Insufficient incubation or reaction time • Sample condition outside recommended range	• Verify storage conditions and expiration status • Optimize incubation/reaction time using a positive control • Use fresh or appropriately prepared samples
High background or nonspecific result	• Over-staining or excessive reaction time • Incomplete washing, differentiation, or cleanup • Sample matrix interference	• Shorten staining/reaction time or dilute reagent if applicable • Increase washing/differentiation stringency • Include blank and negative controls
Inconsistent replicate results	• Uneven sample preparation or mixing • Pipetting variability • Temperature or timing variation	• Standardize sample preparation and mixing • Use calibrated pipettes and consistent timing • Run controls with each batch

Recommended Applications

Cell Staining.

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 product 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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