
Neutral Red Stain Solution (1/3000)

Cat. No.: N1511060 | Pack size: 100 mL | Storage: Room temperature

Overview

Neutral Red is a weakly basic pH indicator with a color change range of pH 6.4 to 8.0 (turning from red to yellow). Its molecular formula is $C_{15}H_{16}N_4 \cdot HCl$ and molecular weight is 288.78. In a neutral or slightly alkaline environment, living plant cells can absorb a large amount of Neutral Red and secrete it into vacuoles. Since vacuoles generally show an acidic reaction, the Neutral Red entering the vacuoles dissociates a large number of cations and presents a cherry red color. Under such circumstances, the protoplast and cell wall are generally not stained. Due to the denaturation and coagulation of protoplast in dead cells, the cell sap cannot be maintained in the vacuoles, so no vacuole staining occurs after Neutral Red staining. On the contrary, the cations of Neutral Red combine with the protoplast and cell nucleus with a certain negative charge, thus staining the protoplast and cell nucleus.

Aladdin Neutral Red Staining Solution (1/3000) is a commonly used staining solution for tissue or cell staining that stains cell nuclei red, and is often used for the red counterstaining of cell nuclei in tissue or cell staining. This reagent is for research use only and not intended for clinical diagnosis or any other applications. Composed of Neutral Red, water, etc.

Materials to Be Prepared by the User

4% paraformaldehyde, distilled water or PBS, graded ethanol series.

Operating Procedures (For Reference Only)

1. Fix cell smears with 4% paraformaldehyde for more than 10 minutes.
2. Neutral Red staining: Stain with Neutral Red Stain (1/3000) for 2–5 minutes.
3. Rinse thoroughly with distilled water, PBS or other suitable solutions.
4. Perform observation and photography.

Precautions

1. It is recommended to conduct a pre-experiment with 1–2 samples when using this reagent for the first time.

2. The staining time of Neutral Red Staining Solution can be adjusted according to staining results and requirements.
3. Please use the reagent as soon as possible after opening to avoid affecting subsequent experimental results.
4. For your safety and health, wear a lab coat and disposable gloves during operation.

Specifications

Attribute	Value
Synonyms	Neutral Red
Specifications & Purity	BioReagent, Biological Stain, for microscopy
Stability And Storage	Store at room temperature long term (12 months).
Storage	Room temperature
Shipped In	Normal
Grade	Biological Stain, BioReagent, for Microscopy
Names and Identifiers	–
Molecular Weight	288.78
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.

NORTH AMERICAN SALES, SUPPORT & GENERAL INQUIRIES Aladdin Scientific Corporation 14078 Meridian Parkway, Riverside, CA 92518, USA Phone: 1-833-552-7181 Sales: sales@aladdinsci.com Customer Service: custserv@aladdinsci.com	EU SALES, LOGISTICS & LOCALIZED SUPPORT Aladdin Biochem Deutschland GmbH Westring 2, 33142 Büren, Germany Phone: +02951 9383958 Support: support.eu@aladdinsci.com
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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.
- ☐ Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the product for their specific application.
- ☐ Aladdin product labels, SDS, COA, and approved specifications take precedence over this document. If product formulation, label, SDS, storage conditions, pack size, or quality specifications change, this document should be reviewed and reissued.