
Plant Nutrient Solution – Iron Stock Solution (400×)

Cat. No.: I1526086 | Pack size: 10 mL, 100 mL, 500 mL | Storage: Store at 2-8°C

Overview

Plant tissue culture technology, also known as aseptic plant culture or in vitro culture technology, is based on the theory of plant cell totipotency. It uses isolated plant organs (such as roots, stems, leaves, flowers, shoot tips, fruits, etc.), tissues (such as cambium, epidermis, cortical cells, pith cells, endosperm, etc.), cells (megaspores, microspores, somatic cells, etc.) and protoplasts. Under suitable artificial culture medium and environmental conditions, these explants can be induced to produce callus, adventitious buds and adventitious roots, and eventually develop into intact plantlets. Before medium preparation, to facilitate operation, simplify procedures, ensure accurate dosing, and reduce time consumption and weighing errors of chemical components in each preparation, macronutrients, micronutrients, iron salts, organic substances and plant hormones required for the medium are separately prepared as concentrated stock solutions with multiple times the working concentration. Predetermined volumes of each stock solution are pipetted directly during medium preparation.

Plant Nutrient Solution – Iron Stock Solution (400×) is mainly composed of ferrous sulfate, EDTA or EDTA ferric sodium salt. It can be used to prepare common plant nutrient solutions including Hoagland's Solution for plant tissue culture and plant growth rate determination. Dilute to 1× working concentration and supplement other components before use; every 100 mL of this stock solution can be used to prepare 40 L of nutrient solution. This reagent is limited to scientific research only and is not intended for clinical diagnosis or other applications.

Materials to Be Prepared:

1. Distilled water or deionized water, dilute acid, dilute alkali, macronutrient stock solution, micronutrient stock solution, organic additives, plant hormones.
2. pH meter, magnetic stirrer, beakers.

Operating Procedures (For Reference Only):

1. Take a 1 L beaker, add 800 mL deionized water and 2.5 mL Iron Salt Stock Solution (400×). Under continuous stirring, sequentially add macronutrient stock solution, micronutrient stock solution, organics and hormones. Adjust pH to 5.5–5.9 with dilute acid or dilute alkali, then top up the volume to 1 L to obtain the final nutrient solution. Valid for 1 month when stored at 4°C.
2. For half-strength (1/2 strength) medium, reduce the dosage of this reagent by half.

Precautions:

1. Select an appropriate medium according to different explants and plant species; the optimal formula is preferably determined by experiments.
2. The optimal pH range for nutrient solution is 5.0–6.5. For strict sterility requirement, autoclave at 121°C for 15–20 minutes.
3. Use the reagent as soon as possible after opening to avoid adverse impacts on subsequent experiments.
4. For your safety and health, wear a lab coat and disposable gloves during operation.
5. This product is for research use only. Any other application is strictly prohibited.

Specifications

Item	Information
Specifications & Purity	BioReagent, 400×
Stability And Storage	Store at 2-8°C long term (12 months).
Storage	Store at 2-8°C
Shipped In	Wet ice. This product requires cold chain shipping. Ground and other economy services are not available.

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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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