
CDH

Product Specification

cdhfinechemical.com

# Technical Information

## Banana Multiplication Medium
## With Vitamins, Sucrose, Casein hydrolysate, IAA and CleriGel™

## Product Code: PT1077G

**Application:** Banana Multiplication Medium has been developed for the *in vitro* multiplication of *Musa* species, family *Musaceae*. It is based on the Murashige and Skoog medium composition with certain alterations aiding towards suitability for *Musa* species. The formulationis a nutrient blend of inorganic salts, vitamins, carbohydrate, growth regulator and gelling agent.

Banana Multiplication Medium provides all the essential macroelements and microelements. Potassium nitrate and ammonium nitrate serve as sources of nitrate and helps in organogenesis. This mixture of cation and anion isresponsible for maintaining pH of the media. Potassium dihydrogen phosphate serves as a source of phosphate.Microelements like Boron, Manganese, Molybdenum, Iron, Copper, and Zinc enhance metabolism in the plants. Thiamine and Inositol act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Casein hydrolysate is ideal for effective tissue proliferation as it serves as a source of amino acid. IAA helps to promote rooting.

CleriGel™, a gellan gum is used as an alternative to agar.It offers several advantages over conventional agar as it sets a clear gel which assists easy observation of cultures and their possible contamination. Unlike agar, gel strength of CleriGel™ is unaffected over a wide range of pH and contains no contaminants like phenolic compounds that can be toxic to plant tissues. It solidifies uniformly and rapidly.

The product is plant tissue culture tested but it is the sole responsibility of the user to ensure the suitability of the medium for individual species.

## Composition**

| Ingredients | mg/Litre |
|---|---|
| **MACROELEMENTS** | |
| Ammonium nitrate | 1650.000 |
| Calcium chloride | 332.200 |
| Magnesium sulphate | 180.690 |
| Potassium nitrate | 1900.00 |
| Potassium phosphate monobasic | 170.00 |
| **MICROELEMENTS** | |
| Boric acid | 6.200 |
| Cobalt chloride hexahydrate | 0.025 |
| Copper sulphate pentahydrate | 0.025 |
| EDTA disodium salt dihydrate | 37.300 |
| Ferrous sulphate heptahydrate | 27.800 |
| Manganese sulphate monohydrate | 16.900 |
| Molybdic acid (sodium salt) | 0.213 |
| Potassium Iodide | 0.830 |
| Sodium phosphate monobasic | 221.710 |
| Zinc sulphate heptahydrate | 8.600 |
| **VITAMINS** | |
| myo-Inositol | 100.000 |
| Thiamine hydrochloride | 0.400 |
| **CARBOHYDRATE** | |
| Sucrose | 30000.000 |
| **GELLING AGENT** | |
| CleriGel™ | 3000.000 |
| **OTHERS** | |
| Caesin hydrolysate | 10.000 |
| Indole-3-acetic acid | 1.000 |
| **Total** | **37.7 gms/litre** |

Central Drug House (P) Ltd. | Corp. Office : 7/28, Vardaan House, Darya Ganj, New Delhi - 110002 (INDIA), Phone : +91-11-49404040 (100 Lines)
Mfg Unit : Plot No. D-2/CH/9, Dahej-2, GIDC, Dist. Bharuch - 392130 (Gujarat), E-mail : sales@cdhfinechemical.com


CDH

Product Specification

cdhfinechemical.com

## Material required but not provided

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl

## Quality Control

**Appearance**
White to off-white, homogenous, free flowing powder
**Solubility**
37.7 gms/litre soluble after boiling in distilled water
**Colour and Clarity**
Colourless to light yellow solution, clear gel is formedon cooling
**Gelling**
Firm gel formed at pH: 5.75 ± 0.5
**pH at 25ºC**
4.00 – 5.00
**Plant Tissue Culture Test**
The growth promoting properties of medium is assessedby providing plant cultures with relative humidity of about 60%±2%, temperature 22ºC±2ºC and photoperiod of about 16:8. The plant species showed actively growing callus and shoots with no structural, necrotic and toxic deformity.

## Directions

- Reconstitute medium by adding required quantity of powder in two-third of total volume with constant, gentle stirring till the medium gets completely dissolved.
- Add heat stable supplements prior to autoclaving.
- Make up the final volume with distilled water.
- Adjust the pH of the medium to 5.75 ± 0.5 using 1N NaOH/HCl.
- Heat the medium to boiling till complete dissolution of gelling agent.
- Sterilize the medium by autoclaving at 15 lbs and 121°Cfor 15 min.
- Cool the autoclaved medium to about 45°C before adding heat labile supplements.
- Aseptically dispense the desired amount of medium under a laminar airflow unit in sterile culture vessels

## Storage and Shelf Life

- The plant tissue culture medium powder is extremely hygroscopic and must be stored at 2-8°C in air tight containers.
- Preferably, entire content of each package should be used immediately after opening.
- Use before the expiry date.

## Precautions

- Ensure appropriate pH of the medium before addition of gelling agent as acidic pH will lead to decreased gelation resulting in semi solid flowing gel while alkaline pH will lead to formation of hardened gel.
- Use of Distilled water/Tissue culture grade water is recommended for media preparation as tap water or lower grade water may lead to salt precipitation and improper gelation.
- Avoid preparation of concentrated solutions, as it will lead to precipitation of salts.


Product Specification

cdhfinechemical.com

## Disclaimer

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.
- Do not use the products if it fails to meet specifications for identity and performance parameters.