

Technical Information

Gerbera Multiplication Medium

With Calcium chloride, Vitamins, Tyrosine, Sucrose, Adenine sulphate and CleriGel

Product Code: PT1002G

Application: Gerbera Multiplication Medium has been developed on the basis of Murashige and Skoog medium for the *in vitro* multiplication of *Gerbera*, family *Asteraceae* (commonly known as daisy family). The formulation is a nutrient blend of inorganic salts, vitamins, carbohydrate, amino acid, plant growth regulator and gelling agent.

Gerbera Multiplication Medium contains all the essential macroelements and microelements. Potassium nitrate and ammonium nitrate provide nitrogen and is responsible for organogenesis. The mixture of cation and anion is responsible for optimum pH of the medium. Potassium dihydrogen phosphate and sodium dihydrogen phosphate serve as sources of phosphate. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc play vital role in plant metabolism. Boron plays a key role in carbohydrate metabolism. Thiamine, inositol, pyridoxine and nicotinic acid act as enzymatic cofactors in the universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Tyrosine serves as a source of amino acid. Growth regulator adenine sulphate helps in shoot proliferation and multiplication.

CleriGe, 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 phosphate monobasic	170.000
Potassium nitrate	1900.000
MICROELEMENTS	
Boric acid	6.200
Cobalt chloride hexahydrate	0.025
Copper sulphate pentahydrate	0.025
EDTA disodium salt dehydrate	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	73.900
Zinc sulphate heptahydrate	8.600
VITAMINS	
myo-Inositol	100.000
Nicotinic acid (free acid)	10.000
Pyridoxine HCl	1.000
Thiamine hydrochloride	30.000

AMINO ACID

L-Tyrosine (free base) 100.000

CARBOHYDRATE

Sucrose 45000.000

GELLING AGENT

CleriGe 3000.000

OTHERS

Adenine sulphate 80.000

Total 52.72 gms/litre

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

52.72 gms/litre soluble in distilled water

Colour and Clarity

Colourless to light yellow solution, clear gel is formed on cooling

Gelling

Firm gel formed at pH: 5.75 ± 0.5

pH at 25°C

5.00-6.00

Plant Tissue Culture Test

The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about 60%±2%, temperature 22°C±2°C 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.
- Add gelling agent and heat the medium to boiling till complete dissolution of gelling agent.
- Sterilize the medium by autoclaving at 15 lbs and 121°C for 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.

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.

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.