Product Specification

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Technical Information

Knudson C Orchid Medium
(Morel Modification)
With Sucrose And Without Vitamins, Agar

Product Code: PT1066

Application: Knudson C Orchid Medium with morel modification consists of the macroelements and microelements as described by Knudson (1946) and Morel (1965). The medium was originally developed for the *in vitro* germination of *Cymbidium* orchid seeds but can also be used for other orchid species.

It is a low salt formulation of the inorganic salts and carbohydrate. Ammonium sulphate and calcium nitrate serve as sources of nitrogen and stimulate seed germination and differentiation. Microelements like Manganese, Molybdenum, Copper, Iron and Zinc enhance metabolism and help in the germination. Boron plays a key role in carbohydrate metabolism.

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	500.000
Calcium nitrate	347.430
Magnesium sulphate	122.090
Potassium phosphate monobasic	250.000
MICROELEMENTS	
Boric acid	0.050
Copper sulphate pentahydrate	0.060
Ferrous sulphate heptahydrate	25.000
Manganese sulphate monohydrate	5.680
Molybdenum trioxide	0.020
Zinc sulphate heptahydrate	0.330
CARBOHYDRATE	
Sucrose	20000.000
Total(gms/litre)	21.3

Material required but not provided

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl
- Vitamins (VP1028)
- Gelling agents like Agar (PCT1901) or CleriGel (PCT1903)

Quality Control

Appearance
White to off-white, homogenous, free flowing powder
Solubility
21.3 gms/litre soluble in distilled water
Colour and Clarity
Colourless to light yellow, clear to slight opalascent solution (Due to inherent property of the media composition, haze may develop after sterilization, which does not affect the performance parameters)

pH at 25ºC

4.20 - 5.20

Plant Tissue Culture Test

The growth promoting properties of medium is assessed by 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.
- 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°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.

Disclaimer

- User must ensure suitability of the product(s) in their application prior to use.
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