PRODUCT INFORMATION

Banana Micropropagation Medium

With Vitamins
Without NH_4NO_3, Sucrose and Agar

Product Code: PT076

Product Description :

Banana Micropropagation Medium has been developed for the *in vitro* propagation of *Musa* species, family *Musaceae*. The formulation is a nutrient blend of inorganic salts, amino acid and vitamins.

Banana Micropropagation 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 is responsible for maintaining pH of the medium. Potassium dihydrogen phosphate serves as a source of phosphate. Microelements like Boron, Manganese, Molybdenum, Iron, Copper, Cobalt and Zinc enhance metabolism in plants. Thiamine, inositol, pyridoxine and nicotinic acid act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Glycine serves as a source of amino acid.

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/L
MACROELEMENTS	
Calcium chloride	166.450
Magnesium sulphate	120.400
Potassium nitrate	2020.000
Potassium phosphate monobasic	44.000
MICROELEMENTS	
Boric acid	1.240
Cobalt chloride hexahydrate	0.240
Copper sulphate pentahydrate	0.250
EDTA disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate monohydrate	8.400
Molybdic acid (sodium salt)	0.130
Potassium Iodide	0.830
Zinc sulphate heptahydrate	0.720
VITAMINS	
myo-Inositol	100.000
Nicotinic acid (free acid)	0.500
Pyridoxine HCl	0.500
Thiamine hydrochloride	0.100
AMINO ACID	
Glycine	2.000
Total(gms/litre)	2.5

Material required but not provided :

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl
- Sucrose (PCT0607)
- Gelling agents like Agar (PCT0901) or CleriGel™ (PCT0903)

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.

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 the 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.

Quality Control:

Appearance
White to off-white, homogenous, free flowing powder

Solubility
2.5 gms/litre soluble in distilled water

Colour and Clarity
Colourless to light yellow, clear solution

pH at 25ºC
3.50 - 4.50

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.

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.

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