

Arabidopsis Callus Initiation Medium

With Vitamins, Sucrose, 2,4-D and Kinetin
Without Agar

Product Code: PT083

Product Description :

Arabidopsis Callus Initiation Medium has been developed for the *in vitro* callus initiation of Arabidopsis, family *Brassicaceae*. The formulation is a nutrient blend of inorganic salts, vitamins, carbohydrate and plant growth regulators.

Arabidopsis Callus Initiation Medium provides all the essential macroelements and microelements. Potassium nitrate serves as a source of nitrogen and promotes callus induction. Potassium dihydrogen phosphate and sodium dihydrogen phosphate serve as sources of phosphate. Ammonium sulphate helps in cell differentiation. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc play vital role in plant metabolism. Boron plays a key role in carbohydrate metabolism. Thiamine, pyridoxine, nicotinic acid act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. 2,4-D promotes callus formation and proliferation while kinetin helps in differentiation of callus.

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	
Ammonium sulphate	134.000
Calcium chloride	113.230
Magnesium sulphate	122.090
Potassium nitrate	2500.000
MICROELEMENTS	
Boric acid	3.000
Cobalt chloride hexahydrate	0.025
Copper sulphate pentahydrate	0.025
EDTA disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate monohydrate	10.000
Molybdic acid (sodium salt)	0.213

Potassium Iodide	0.750
Sodium phosphate monobasic	130.420
Zinc sulphate heptahydrate	2.000
VITAMINS	
myo-Inositol	100.000
Thiamine hydrochloride	10.000
Nicotinic acid (free acid)	1.000
Pyridoxine HCl	1.000
CARBOHYDRATE	
Sucrose	20000.000
OTHERS	
2,4-Dichlorophenoxyacetic acid	0.500
Kinetin	0.050
Total(gms/litre)	23.2

Material required but not provided :

- Autoclaved distilled water
- 1N NaOH/HCl
- 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.

- 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

23.2 gms/litre soluble in distilled water

Colour and Clarity

Colourless to light yellow, clear solution

pH at 25°C

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 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.

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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Disclaimer :

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