

Arabidopsis Seed Germination Medium

With Sucrose and Agar

Product Code: PT156

Product Description :

Arabidopsis Seed Germination Medium has been formulated for the *in vitro* germination of Arabidopsis, family *Brassicaceae*. The formulation is a nutrient blend of inorganic salts, vitamins, carbohydrate, amino acid and gelling agent.

Arabidopsis Seed Germination Medium provides all essential macroelements and microelements in half strength. Potassium nitrate and ammonium nitrate serve as sources of nitrogen and promote effective seedling growth. Potassium dihydrogen phosphate serves as a source of phosphate and enhances the cell elongation which leads to effective development. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc play vital role in plant 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. 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 | |
| Ammonium nitrate | 825.000 |
| Calcium chloride | 166.000 |
| Magnesium sulphate | 90.344 |
| Potassium nitrate | 950.000 |
| Potassium phosphate monobasic | 85.000 |
| MICROELEMENTS | |
| Boric acid | 3.100 |
| Cobalt chloride hexahydrate | 0.013 |
| Copper sulphate pentahydrate | 0.013 |
| EDTA disodium salt dihydrate | 18.650 |
| Ferrous sulphate heptahydrate | 13.900 |
| Manganese sulphate monohydrate | 8.450 |

| | |
|-----------------------------|-------------|
| Molybdic acid (sodium salt) | 0.106 |
| Potassium Iodide | 0.415 |
| Zinc sulphate heptahydrate | 4.300 |
| VITAMINS | |
| myo-Inositol | 50.000 |
| Nicotinic acid (free acid) | 0.250 |
| Pyridoxine HCl | 0.250 |
| Thiamine hydrochloride | 0.050 |
| AMINO ACID | |
| Glycine | 1.000 |
| CARBOHYDRATE | |
| Sucrose | 20000.000 |
| GELLING AGENT | |
| Agar | 7000.000 |
| Total(gms/litre) | 29.2 |

Material required but not provided :

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

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

29.2 gms/litre soluble after boiling in distilled water

Colour and Clarity

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

Gelling

Firm gel formed at pH: 5.75 ± 0.5

pH at 25°C

4.70 - 5.70

Plant Tissue Culture Test

The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about $60\% \pm 2\%$, temperature $22^\circ\text{C} \pm 2^\circ\text{C}$ and photoperiod of about 16:8. The plant species showed active germination 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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