Murashige and Skoog Medium with Calcium Chloride and Vitamins without Sucrose and Agar

Intended Use

It is widely used for micro propagation, organ culture, callus culture and suspension culture.

Typical Composition (mg/litre)

Macro Elements: Ammonium nitrate 1650.0; Calcium chloride 332.20; Magnesium sulphate 180.690; Potassium nitrate 1900.0; Potassium phosphate monobasic 170.0

Micro Elements: Boric acid 6.200; Cobalt chloride hexahydrate 0.025; Copper sulphate pentahydrate 0.025; EDTA disodium salt dehydrate 37.300; Ferrous sulphate heptahydrate 27.80; Manganese sulphate monohydrate 16.900; Molybdic acid (sodium salt) 0.213; Potassium Iodide 0.830; Zinc sulphate heptahydrate 8.600

Vitamins: myo-Inositol 100.00; Nicotinic acid (free acid) 0.500; Pyridoxine HCl 0.500; Thiamine hydrochloride 0.100

Amino Acid: Glycine 2.000

Total (gms/litre) 4.4

Mode of Action

Murashige and Skoog Medium (MS) provides all the essential macro elements and microelements. Potassium dihydrogen phosphate serves as a source of phosphate. Microelements like Boron, Manganese, Molybdenum, Copper and Zinc play vital role in plant metabolism. Boron plays a key role in carbohydrate metabolism. Thiamine, nicotinic acid, pyridoxine, inositol 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.

Preparation

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. 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. Adjust the pH of the medium to 5.75 ± 0.5 using 1N NaOH/ HCl.

Storage

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.