Schenk & Hildebrandt Medium w/ Vitamins and Sucrose; w/o Agar

PT116

Composition :

Ingredients	milligrams/litre
Potassium nitrate	2500.00
Ammonium phosphate monobasic	300.00
Calcium chloride.$2H_2O$	200.00
Magnesium sulphate	195.34
Manganese sulphate.H_2O	10.00
Boric acid	5.00
Potassium iodide	1.00
Molybdic acid (sodium salt).$2H_2O$	0.10
Zinc sulphate.$7H_2O$	1.00
Copper sulphate.$5H_2O$	0.20
Cobalt chloride.$6H_2O$	0.10
Ferrous sulphate.$7H_2O$	15.00
EDTA disodium salt.$2H_2O$	20.00
myo - Inositol	1000.00
Thiamine hydrochloride	5.00
Pyridoxine hydrochloride	0.50
Nicotinic acid (Free acid)	5.00
Sucrose	20000.00
TOTAL gm/litre	**24.26**

Directions :

Suspend 24.20 grams of dehydrated medium# in 600ml of distilled water and rinse media vial with small quantity of distilled water to remove traces of powder. Apply constant gentle stirring to the solution till the powder dissolves completely. Add desired heat stable supplements prior to autoclaving. Adjust the medium to the desired pH using 1N HCl/NaOH. Make up the final volume to 1000ml with distilled water. Sterilize the medium by autoclaving at 15 lbs or 121ºC for 15 minutes. Cool the autoclaved medium to 45ºC before adding the filter sterilized heat labile supplements. Dispense the desired amount of medium aseptically in sterile culture vessels.

Weight after vacuum drying to remove all water

Principle and Interpretation :

Schenk & Hildebrandt medium has been specially formulated for plant cell, tissue and organ cultures. Potassium nitrate serves as the nitrate source. Sucrose serves as a carbohydrate source. Medium does not contain agar; hence this component has to be added to the medium before use.

Quality Control :

Appearance	: White to off-white, homogeneous, free flowing powder.
Solubility	: 24.20 gm/litre soluble in distilled water.
Colour and Clarity	: Colourless to light yellow, clear solution.
pH at 25°C	: 4.2±0.5 of 2.420% w/v dehydrated medium.

Cultural Response :

Cultural condition :

- Incubation period : 5 weeks
- Relative humidity : 60% ± 2%
- Temperature : 22°C ± 2°C
- Photoperiod (D:N) in hours : 16:8

Cell Line	Type of Culture	Results
Musa species	Shoot culture	No structural deformity observed No necrotic tissues, Actively growing shoots, No toxicity to shoots
Daucus species	Callus culture	No necrotic tissues, Actively growing callus, No toxicity to callus

[The medium is prepared as per direction. The growth promoting activity of this plant tissue culture medium is evaluated using two plant species viz. *Musa* species and *Daucus* species through three passages. Plant growth hormones (e.g. 2,4-D, NAA, Kinetin and 6-BAP) are added in suitable combinations and concentrations.]

Storage and shelf life :

Dehydrated plant tissue culture media powder is extremely hygroscopic and should be protected from atmospheric moisture. If possible, the entire content of each bottle should be used immediately after opening or else the unused portion should be stored in a desiccator and refrigerated at 2-8°C. Use before the expiry date.

Reference :

1. Schenk R.U. & Hildebrandt A.C., Can. J. Bot., (1972), 50, 199 - 204