White Modified S-3 Medium w/ Vitamins, Amino acids and Sucrose; w/o Agar

PT015

Composition :

Ingredients	milligrams/litre
Potassium nitrate	80.00
Calcium nitrate	208.46
Magnesium sulphate	361.38
Sodium phosphate monobasic	14.35
Potassium chloride	65.00
Sodium sulphate	200.00
Manganese sulphate.H_2O	5.00
Boric acid	1.50
Potassium iodide	0.75
Zinc sulphate.$7H_2O$	2.50
Ferric sulphate	2.50
myo - Inositol	100.00
Thiamine hydrochloride	0.10
Pyridoxine hydrochloride	0.10
Nicotinic acid (Free acid)	0.50
Biotin	0.01
Calcium pantothenate	0.10
Riboflavin	0.10
Choline chloride	10.00
Ascorbic acid	0.10
Cyanocobalamin	0.0015
Hypoxanthine	2.50
Glycine (Free base)	10.00
L - Arginine hydrochloride	7.80
L- Asparagine	20.00
L - Aspartic acid	6.00
L- Cystine	1.50
L- Glutamic acid	14.00
L- Glutamine	50.00
L- Histidine	2.60
DL- Isoleucine	10.40
L- Leucine	15.60
L- Lysine	15.60
DL- Methionine	13.00
L- Phenylalanine	5.00

Please refer disclaimer Overleaf

L- Proline	5.00
L- Threonine	13.00
L- Tryptophan	4.00
L- Tyrosine	40.00
DL- Valine	13.00
Sucrose	20000.00
Chlorophenol red	4.00
TOTAL gm/litre	**21.31**

Directions :

Suspend 21.30 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 :

White Modified S-3 medium is a defined medium, which consists of inorganic salts, vitamins, amino acids and carbohydrate. Potassium nitrate serves as the nitrate source and sodium phosphate monobasic serves as the phosphate source. Sucrose serves as the carbohydrate source. Medium contains wide range of amino acids as organic supplements and chlorophenol red as pH indicator. Medium is devoid of agar; hence this component has to be added to the medium prior to use.

Quality Control :

Appearance	: White to off-white, homogeneous, free flowing powder.
Solubility	: 21.30 gm/litre soluble in distilled water.
Colour and Clarity	: Light yellow to light purple, clear solution.
pH at 25°C	: 5.5 ±0.5 of 2.130% 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. Reinert J. & White P.R., Physiol. Plant., (1956), 9, 177 - 189

Disclaimer :

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