Product Specification

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Technical Information

Heller Medium
w/ Macroelements and Microelements; w/o Vitamins, Sucrose and Agar

Product Code: PT1036

Composition**

Ingredients	mg/Litre
Calcium chloride.$2H_2O$	75.000
Magnesium sulphate	122.09
Sodium phosphate monobasic	108.68
Potassium chloride	750.00
Sodium nitrate	600.00
Manganese sulphate.H_2O	0.076
Boric acid	1.00
Potassium iodide	0.01
Zinc sulphate.$7H_2O$	1.00
Copper sulphate.$5H_2O$	0.03
Aluminium chloride.$6H_2O$	0.05
Nickel chloride.$6H_2O$	0.03
Ferric chloride.$6H_2O$	1.00
TOTAL	**1.66 gm/litre**

Principle And Interpretation

Heller medium has been specially formulated for plant cell, tissue and organ cultures. Sodium nitrate serves as the source of nitrate. Medium does not contain vitamins, sucrose and agar; hence these components have to be added to the medium before use.

Directions

Suspend 1.66 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

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Quality Control

Appearance : White to off-white, homogeneous, free flowing powder.
Solubility : 1.64 gm/litre soluble in distilled water.
Colour and Clarity : Colourless to light yellow, clear solution.
pH at 25°C : 4.8 ±0.5 of 0.164% w/v dehydrated powder.

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	Types 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 macroelements 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.

Further Reading

1. Heller R., Ann. Sci. Nat. Bot. et Biol. Veg. 11th Ser., (1953), 14, 1 - 223

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Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
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