



Yeast Mannitol Agar w/ Congo Red

M721

Yeast Mannitol Agar w/ Congo Red is used for cultivation of *Rhizobium* species.

Composition**

| Ingredients | Gms / Litre |
|-----------------------|-------------|
| Yeast extract | 1.000 |
| Mannitol | 10.000 |
| Dipotassium phosphate | 0.500 |
| Magnesium sulphate | 0.200 |
| Sodium chloride | 0.100 |
| Congo red | 0.025 |
| Agar | 20.000 |
| Final pH (at 25°C) | 6.8±0.2 |

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 31.82 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Rhizobium can fix atmospheric nitrogen only in root nodules of legumes and that too when it is in the bacteroid stage of its life cycle. It possesses the entire complement of genes for nitrogen fixation, which are normally latent and become active only under special conditions. *Rhizobium* makes nitrogen available to the plant and in turn, the bacteria derive nutrients from the tissues of the plants (1). Yeast Mannitol Agar with Congo Red is used for the cultivation of *Rhizobium* species and for studying root nodulation (2).

Yeast extract serves as a good source of readily available amino acids, vitamin B complex and accessory growth factors for Rhizobia. It also poises the oxidation-reduction potential of medium in the range favourable for Rhizobia and serves as hydrogen donor in respiratory process (3). Mannitol is the fermentable sugar alcohol source. Magnesium provides cations essential for the growth of Rhizobia. Congo red inhibits penicillin-susceptible strains. Colonies of Rhizobia stand out as white, translucent, glistening and elevated, with entire margins (2).

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% Agar gel.

Colour and Clarity of prepared medium

Orange coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 3.18% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

M721: Cultural characteristics observed after an incubation at 25-30°C for upto 2-5 days.

| Organism | Growth | Colour of colony |
|---------------------------------------|-----------|------------------|
| <i>Rhizobium japonicum</i> ATCC 10324 | luxuriant | pink |

Rhizobium meliloti ATCC luxuriant pink
9930

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8° C. Use before expiry period on the label.

Reference

1. Pelczar M. J. Jr., Reid R. D, Chan E. C. S., 1977, Microbiology, Tata McGraw-Hill Publishing company Ltd, New Delhi.
2. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co.
3. Allen E. K. and Allen O. N., 1950, Bact. Revs., 14:273.

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