Yeast Mannitol Agar with Congo Red

Intended Use
Yeast Mannitol Agar with Congo Red is used for cultivation of soil microorganisms like *Rhizobium* species.

Summary
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. Yeast Mannitol Agar with Congo Red is used for the cultivation of *Rhizobium* species and for studying root nodulation.

Principle
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. Mannitol is the fermentable sugar alcohol source. Magnesium provides cations essential for the growth of Rhizobia. Congo red inhibits penicillin-susceptible strains.

Formula*

Ingredients	g/L
Yeast Extract	1.0
Mannitol	10.0
Dipotassium Phosphate	0.5
Magnesium Sulphate	0.2
Sodium Chloride	0.1
Congo Red	0.025
Agar	20.0
Final pH (at 25°C)	6.8 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 31.82 g of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
3. Heat with frequent agitation to dissolve the powder completely. DO NOT OVERHEAT.
4. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.

Quality Control
Dehydrated Appearance: Orange coloured, homogenous, free flowing powder.
Prepared Appearance: Orangish red coloured, slightly opalescent gel forms in petridishes.
Cultural Response: Cultural characteristics observed after an incubation at 20°C-25°C for 5 days.

Organism (ATCC)	Growth
Rhizobium leguminosarum (10004)	Good
Rhizobium meliloti (9930)	Good

Interpretation of Results
Colonies of Rhizobia stand out as white, translucent, glistening and elevated, with entire margins.

Performance and Evaluation
Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty
This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

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.
4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat. No.	Product Description	Pack Size
201250100500	Dehydrated Culture Media	500 g