

## Yeast Lactose Agar

### Intended Use

Yeast Lactose Agar is used for cultivation of soil microorganisms such as *Rhizobium* species.

### Summary

Symbiotic nitrogen fixation is accomplished by bacteria of the genus *Rhizobium* in association with legumes (plants that bear seeds in pods). The bacteria make nitrogen available to the plant, and in turn the bacteria derive nutrients from the tissues of the plant. These bacteria infect the root system of the legumes and further invade the host plant cells via an infection thread. Some of the cells of the plant are thus infected causing cell enlargement and an increased rate of cell division, leading to the formation of abnormal growth (nodules) on the root system. The legume, the bacteria and the nodule together constitute the nitrogen fixing system.

### Principle

Yeast extract serves as a good source of readily available amino acids, including vitamin B complex and accessory growth factors. It also balances the oxidation-reduction potential of medium in the range favourable for *Rhizobia* and serves as hydrogen donor in respiratory process. Lactose is the fermentable carbohydrate source. Magnesium provides cations essential for the growth of *Rhizobia*.

### Formula\*

Ingredients	g/L
Yeast Extract	1.0
Lactose	10.0
Dipotassium Hydrogen Phosphate	0.5
Magnesium Sulphate	0.2
Sodium Chloride	0.1
Agar	15.0
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 26.80 g of the powder in 1000 mL purified / distilled water.
2. Heat to boiling to dissolve the powder completely, dispense as desired.
3. Sterilize by steaming for 30 minutes on two consecutive days.
4. Confirm sterility by leaving it at room temperature (30°C ± 2°C) for 3-4 days.
5. Alternatively, the medium can be sterilized by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.

### Quality Control

**Dehydrated Appearance:** Cream to yellow coloured, homogenous, free flowing powder.

**Prepared Appearance:** Light yellow coloured, clear to slightly opalescent gel forms in petridishes.

**Cultural Response:** Cultural characteristics observed after an incubation of 2-5 days at 20°C -25°C.

**Organism (ATCC)***Rhizobium japonicum* (10234)*Rhizobium meliloti* (9930)**Growth**

Good

Good

**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. Bernaerts M. J. and De Ley J., 1963, Nature, Lond, 197, 406-407.
3. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth. Oxford and IBH Publishing Co.
4. Allen E. K. and Allen O. N., 1950, Bact. Revs., 14:273.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

**Product Presentation:****Cat. No.**

201250080500

**Product Description**

Dehydrated Culture Media

**Pack Size**

500 g

**Disclaimer**

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.

---