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Yeast Mannitol Broth

used for cultivation, isolation and enumeration of soil microorganisms like Rhizobium species

REF: BS.1/YB01.100.0100	100 Gram	REF: BS.1/YB01.250.0250	250 Gram
REF: BS.1/YB01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Beijerinck was first to isolate and cultivate an aerobic gram negative rod-shaped microorganism from the nodules of legume. He named it Bacillus radicicola , which was subsequently placed under the genus Rhizobium . Bacteria belonging to the genus Rhizobium live freely in soil and in the root region of both leguminous and non-leguminous plants. However they can enter into symbiosis only with leguminous plants by infecting their roots and forming nodules on them. Rhizobium present in these root nodules fixes atmospheric nitrogen i.e. gaseous nitrogen from air to organic nitrogen compounds, which is absorbed by plants. Thus role of Rhizobium is noteworthy for their major contributions to soil fertility. Yeast Mannitol Agar is used for the cultivation of symbiotic nitrogen fixing organisms viz. Rhizobium species (1)

METHOD 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 oxidation - reduction potential of medium in the range favorable for Rhizobia and serves as hydrogen donor in respiratory process (2). Mannitol is the fermentable sugar alcohol source. Calcium and magnesium provide cations essential for the growth of Rhizobia.

MEDIA COMPOSITION

Item	Formula in g/L
Yeast extract	1
Mannitol	10
Dipotassium phosphate	0.5
Magnesium sulphate	0.2
Sodium chloride	0.1
Calcium carbonate	1

pH 6.8 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,..).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Handle specimens and inoculated culture bottles as though capable of transmitting infectious agents. All inoculated culture bottles, specimen collection needles, and blood drawing devices should be decontaminated according to country requirement for waste disposal.

  S56: dispose of this material and its container at hazardous or special waste collection point.

  S57: use appropriate container to avoid environmental contamination.

  S61: avoid release in environment.

For further information, refer to the Yeast Mannitol Broth material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

STORAGE AND STABILITY

BioScien. Yeast Mannitol Broth should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

PROCEDURE

Suspend 12.8 grams in 1000 ml distilled water.
Heat just to boiling. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.
Mix well and dispense into sterile test tubes.

Deterioration

BioScien Yeast Mannitol Broth is White to cream homogeneous free flowing powder. Prepared medium is Whitish buff coloured opalescent solution in tubes. should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations

SPECIMEN COLLECTION AND PRESERVATION

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (11,12). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10,13). After use, contaminated materials must be sterilized by autoclaving before discarding.

TYPE OF SPECIMEN

Clinical samples
Food and Dairy samples
Environmental samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes
- Incubator
- Autoclave

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact the technical support.

PERFORMANCE CHARACTERISTICS

The following organisms are used by us as part of the quality assurance of the product. The total inoculum challenge for each test organism per bottle is 10 to 50 colony forming units (CFU's).

Test Organisms	Growth
Rhizobium leguminosarum ATCC 10004	Luxuriant
Rhizobium meliloti ATCC 9930	Luxuriant

REFERENCES

1. Subba Rao N.S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBG Publishing Company..
2. Allen. E.K. and Allen. O.N., 1950, Bacteriol. Rev., 14:273.

SYMBOLS IN PRODUCT LABELLING	
IVD For in-vitro diagnostic use	Number of <n> test in the pack
LOT Batch Code/Lot number	Caution
REF Catalogue Number	Do not use if package is damaged
Temperature Limitation	Consult Instruction for use
Expiration Date	
Manufactured by	