Antibiotic Assay Medium No. 4 (Yeast Beef Agar)

Intended Use
Antibiotic Assay Medium (No. 4) (Yeast Beef Agar) is used for detection of Penicillin-G in milk sample using *Bacillus stearothermophilus.*

Summary
Antibiotic Assay Medium No. 4 (Yeast Beef Agar) is suitable for plate counts in pharmaceutical and related products, and also for the microbial assay and detection of antibiotics like penicillin in milk. This medium is formulated in accordance to the specifications and procedures listed by the Food and Drug Administration and is identical numerically with name assigned by Grove and Randall.

Principle
Peptic digest of animal tissue, yeast and beef extract provides nutritional requirement for growth of the indicator organisms like *Bacillus stearothermophilus*, *Micrococcus luteus*. This medium is similar to Antibiotic assay medium No. 2 except for the added ingredient dextrose. Dextrose in the medium serves as readily available source of carbon stimulating rich growth of test organisms. Generally, presence of penicillin in milk is detected by cylinder plate method, using *Micrococcus luteus* as test organism, and a paper disk method, using *Bacillus stearothermophilus*. The cylinder plate method is recommended as the standard for quantification of ß-lactam residues.
Freshly prepared plates should be used for antibiotic assays. The use of this medium assures well defined zones of the test organism. All conditions in the microbiological assay must be controlled carefully. The use of standard culture medium in the test is one of the important steps for obtaining good results.

Formula*

Ingredients	**g/L**
Peptic Digest of Animal Tissue (Peptone)	6.0
Beef Extract	1.5
Yeast Extract	3.0
Dextrose	1.0
Agar	15.0
Final pH (at 25°C)	6.6 ± 0.1

*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.

Type of specimen
Food and dairy samples

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. Weigh 26.5 g of the powder and dispense in 1000 mL of purified / distilled water.
2. Heat to boiling to dissolve the powder completely with frequent agitation.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.

Quality Control

Dehydrated Appearance: Light yellow coloured, homogeneous and free flowing powder.
Prepared Appearance: Yellow coloured, clear to slightly opalescent gel forms in petridishes.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is observed after an incubation at 18-24 hours at 30°C-35°C
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 18 hours.

Organism (ATCC)	**Growth**
Bacillus stearothermophilus (7953)	Good
Kocuria rhizophila (9341)	Good

Note: For good growth - Growth obtained on test media should not differ by a factor greater than 2 from calculated value for a standardized inoculum.

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. Tests & Methods of Assay of Antibiotics & Antibiotic containing Drugs, FDA, CFR, 1983 Title 21, Part 436, (D), paragraphs 436, 100-436, 106, p. 242-259, (April 1).
2. Grove and Randall, 1955, Assay Methods of Antibiotics Medical Encyclopedia, Inc. New York.
3. Kramer, J., G.G. Carter, B. Arret, J. Wilner, W.W. Wright, & A. Kirshbaum. 1968. Antibiotic residues in milk, dairy products and animal tissues: methods, reports and protocols. Food and Drug Administration, Washington, DC.
4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	**Product description**	**Pack Size**
201010160500	Dehydrated Culture Media	500 g