

TM 427 – ANTIBIOTIC ASSAY MEDIUM NO. 4 (YEAST MEAT AGAR)

INTENDED USE

For detection of Penicillin-G in milk using *Bacillus stearothermophilus*.

PRODUCT SUMMARY AND EXPLANATION

Antibiotic Assay Medium No. 4 (Yeast MB Agar) is suitable for plate counts in pharmaceutical and related products and 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. This medium is identical numerically with name assigned by Grove and Randall.

Generally, presence of penicillin in milk is detected by the cylinder plate method, using *Micrococcus luteus* as the test organism, and a paper disk method, using *Bacillus stearothermophilus*. The cylinder plate method is recommended as the standard for quantification of β -lactam residues. A description of the cylinder plate method for detecting penicillin in dry powdered milk is given by Kramer et al. The same basic procedure is also recommended in the assay of penicillin in fluid milk. 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 step for obtaining good results.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	6.000
Beef extract	1.500
Yeast extract	3.000
Dextrose (Glucose)	1.000
Agar	15.000

PRINCIPLE

Peptone, 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 additional ingredient dextrose. Dextrose in the medium serves as easily available source of carbon stimulating luxuriant growth of the test organism.

INSTRUCTION FOR USE

- Dissolve 26.5 grams in 1000 ml of purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium	: Yellow coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C)	: 6.6±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Bacillus stearothermophilus</i>	7953	50-100	Good-luxuriant	>=50%	55°C	18-24 Hours
<i>Micrococcus luteus</i>	10240	50-100	Good-luxuriant	>=50%	55°C	18-24 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Grove and Randall, 1955, Assay Methods of Antibiotics Medical Encyclopedia, Inc. New York.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For Lab Use Only
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