



Antibiotic HiVeg Assay Medium No. 4 (Yeast Beef HiVeg Agar)

MV140

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

Composition**

Ingredients	Gms / Litre
HiVeg extract	1.500
HiVeg peptone	6.000
Yeast extract	3.000
Dextrose	1.000
Agar	15.000
Final pH (at 25°C)	6.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 26.5 grams in 1000 ml of purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Antibiotic HiVeg Assay Medium No. 4 (Yeast Beef HiVeg Agar) is prepared by incorporating vegetable peptones in place of animal peptones, making the medium BSE-TSE risks free. This can be used for the same purpose of Antibiotic Assay Medium No. 4 (Yeast Beef Agar), which is recommended 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 (1). This medium is identical with that of Grove and Randall (2).

HiVeg peptone, yeast extract and HiVeg extracts provides nutritional requirement for growth of the indicator organisms like *Bacillus stearothermophilus*, *Micrococcus luteus*. Dextrose in the medium serves as easily available source of carbon stimulating luxuriant growth of the test organisms. Generally presence of penicillin in milk is detected by the cylinder plate method, using *Micrococcus luteus* as the test organism, and a by paper disk method, using *Bacillus stearothermophilus* as the test organism. 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. (3). 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 steps for obtaining good results.

Note: For Antibiotic Assay Methods and Selection of Antibiotic HiVeg Assay Medias Refer Section Antibiotic HiVeg Assay Media.

Quality Control

Appearance

Cream to yellow Colour of Powder Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 2.65% w/v aqueous solution at 25°C. pH : 6.6±0.2

pH

6.40-6.80

Cultural Response

Cultural characteristics observed after an incubation at 55°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery
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Cultural Response

<i>Bacillus stearotherophilus</i> ATCC 7953	50-100	good-luxuriant	>=50%
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<i>Micrococcus luteus</i> ATCC 10240	50-100	good-luxuriant	>=50%
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Storage and Shelf Life

Store below 30°C in tightly closed container and use freshly prepared medium . Use before expiry date on the label

Reference

1. Tests and Methods of Assay of Antibiotics and Antibiotic containing Drugs, FDA, CFR, 1983 Title 21, Part 436, Subpart D, Washington, D.C.: U.S. Government Printing Office, 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, and A. Kirshbaum. 1968. Antibiotic residues in milk, dairy products and animal tissues: methods, reports and protocols. Food and Drug Administration, Washington, DC.

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