TB HiVeg® Broth Base

MV100

Intended Use:

Recommended for cultivation of *Mycobacterium tuberculosis*

Composition**

Ingredients	g / L
HiVeg® peptone No. 3	4.000
Yeast extract	2.000
Disodium hydrogen phosphate	2.500
Monopotassium phosphate	1.000
Sodium citrate	1.500
Magnesium sulphate	0.600
Polysorbate 80 (Tween 80)	0.500
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 12.1 grams in 1000 ml purified /distilled water, which if desired contains 5 ml glycerol (tested to be non-inhibitory to typical cultures). Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-55°C and enrich with dextrose to a final concentration of 0.5% and either bovine albumin fraction-V or serum as desired.

Principle And Interpretation

TB Broth media are based on the medium formulated by Dubos and Davis (1) and are used as liquid media for the cultivation of *Mycobacterium tuberculosis*. This medium provides dispersed growth of tubercle bacilli which is free of excessive clumps and so it can be used to prepare a uniform suspension of Mycobacteria. The medium can be used without additives and supplements; however, sterile dextrose and sterile serum can be added for the enrichment. Glycerol addition helps in the cultivation of *Mycobacterium tuberculosis* though some bovine strains are inhibited by it. TB HiVeg® Broth Base is same as TB Broth Base except that the animal based peptones are completely replaced with vegetable peptones to avoid the BSE/TSE risks associated with animal peptones.

HiVeg® peptone No. 3 and yeast extract provide nitrogenous and carbonaceous nutrients, long chain amino acids and peptides, vitamin B complex and other essential nutrients. The medium is well buffered by phosphates. The salts present in the medium supply ions required for the mycobacterial metabolism. Sodium citrate inhibits gram-positive organisms and coliforms. Polysorbate 80, an oleic acid ester provides essential fatty acids for the replication of Mycobacteria.

Type of specimen

Clinical samples

Specimen Collection and Handling:

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within theexpiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Yellow coloured clear solution without any precipitate.

Reaction

Reaction of 1.21% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 2-4 weeks.

Organism	Inoculum (CFU)	Growth
Mycobacterium kansasii ATCC 12478	50-100	luxuriant
Mycobacterium smegmatis ATCC 14468	50-100	luxuriant
M. tuberculosis H37RV (25618)	50-100	luxuriant

Storage and Shelf Life

Store between 10-30°C in a tightly 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 inorder to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in 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.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. Dubos and Davis, 1946, J. Exp. Med., 83:409.
2. Isenberg, (Ed.), 1992, Clinical Microbiology Procedures Handbook, Vol. I, ASM, Washington, D. C.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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