Todd Hewitt HiVeg® Broth

MV313

Intended Use:

Recommended for the cultivation of group A haemolytic Streptococci used for serological studies.

Composition**

Ingredients	g / L
HiVeg® special infusion	10.000
HiVeg® peptone	20.000
Dextrose (Glucose)	2.000
Sodium chloride	2.000
Disodium hydrogen phosphate	0.400
Sodium carbonate	2.500
Final pH (at 25°C)	7.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 37.0 grams in 1000 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Mix well and dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Humans are the natural reservoir for group A, ß-haemolytic streptococci. The organisms are transmitted from person to person by the respiratory route and it causes pharyngitis, tonsillitis, sinusitis, otitis media, cervical adenitis, pyoderma, lymphadenitis, bacteremia, osteomyelitis, arthritis and endocarditis. Pharyngitis is the most common infection caused by group A streptococci. In 1985, outbreaks of rheumatic fever have been reported in the Salt Lake City area, California. In these outbreaks, some persons did not recall having had a streptococcal infection. In such cases, and in the diagnosis of non-supurative squeal, serologic studies are helpful for respective documentation of previous group A streptococcal infection. Todd Hewitt Broth, which was initially developed to produce streptococcal haemolysin was further modified by Updyke and Nickle for cultivation of ß-haemolytic streptococci (1,2) for different serological tests. This medium is also recommended for selective isolation of group B streptococci with added gentamicin and nalidixic acid. This medium has been recommended as an alternative type in epidemiologic studies of group A streptococci as well as pathogenic microorganisms. With the addition of 15 g/l agar, the medium can be solidified and used as an excellent substrate for the production of capsules in streptococci.

Todd Hewitt HiVeg® Broth is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks. Todd Hewitt HiVeg® Broth medium is very nutritious due to the presence of HiVeg® peptone and HiVeg® special infusion. Dextrose stimulates haemolysin production. The medium is well buffered by sodium phosphate and sodium carbonate to neutralize the acid produced during dextrose fermentation. This restricts destruction of antigenic streptococcal haemolysin. It is also found that sodium phosphate have a stimulating effect on the pneumococcal growth. Todd Hewitt HiVeg® Broth can be employed as an alternative to serum broth or horse flesh digest broth for the cultivation of streptococci prior to serological typing (3).

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 complete identification.

Performance and Evaluation

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

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Medium amber coloured clear solution without ant precipitate

Reaction

Reaction of 3.7% w/v aqueous solution at 25°C. pH : 7.8±0.2

pH

7.60-8.00

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours

Organism	Inoculum (CFU)	Growth
Neisseria meningitidis ATCC 13090	50-100	good-luxuriant
Streptococcus mitis ATCC 9811	50-100	good-luxuriant
Streptococcus pneumoniae ATCC 6303	50-100	good-luxuriant
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order 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 (4,5).

Reference

1. Todd E. W. and Hewitt L. F., 1932, J. Pathol. Bacteriol., 35:973.
2. Updyke E. L. and Nickle M. I., 1954, Appl. Microbiol., 2:117.
3. Forbes B. A., Sahm D. F. and Weissfeld A. S., 1998, Bailey & Scotts Diagnostic Microbiology, 10th Ed., Mosby, Inc., St. Louis,Mo.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
5. 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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