

Tryptose Blood Agar Base w/ Yeast Extract, HiVeg™

MV450

Intended Use:

Recommended with or without added blood for culturing fastidious microorganisms.

Composition**

Ingredients	g / L
HiVeg™ hydrolysate No. 1	10.000
HiVeg™ extract	3.000
Yeast extract	1.000
Sodium chloride	5.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 34.0 grams in 950 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. For preparing Blood Agar cool the autoclaved medium to 45-50°C and aseptically add 5% v/v sterile defibrinated blood. Mix thoroughly, avoiding air bubbles and pour into sterile Petri plates.

Principle And Interpretation

Tryptose Blood Agar Base w/Yeast Extract, HiVeg™ is a tryptose based medium that can be used for the cultivation of fastidious organisms (1,2), on supplementation with blood. This medium is devoid of dextrose and therefore useful in determining the haemolytic reactions.

Tryptose Blood Agar Base w/ Yeast Extract, HiVeg™ provides additional nutrients (yeast extract) to the fastidious organisms. Tryptose Blood Agar Base w/ Yeast Extract, HiVeg™ can be used as a general-purpose medium without supplementation of blood. This medium can be used to determine the haemolytic reactions of fastidious organisms. The four different types of haemolysis observed are as follows:

- α -haemolysis: partial lysis of the erythrocytes surrounding a colony, causing a gray green or brownish discoloration in the media.
- β -haemolysis: complete lysis of the red blood cells surrounding a colony, causing a clearing of blood from the medium.
- γ - haemolysis: no haemolysis and consequently, no colour change of the medium surrounding a colony. Organisms showing no haemolysis are generally termed non-hemolytic rather than gamma haemolytic.
- α -prime or wide zone alpha: a small zone of intact erythrocytes immediately adjacent to the colony, with a zone of complete red cell haemolysis surrounding the zone of intact erythrocytes. This type of haemolysis may be confused with beta haemolysis (3).

Tryptose Blood Agar Base w/ Yeast Extract, HiVeg™ is prepared by completely replacing animal based peptone with vegetable peptones to avoid BSE/TSE risks associate with animal peptones. HiVeg™ hydrolysate No. 1, HiVeg™ extract and yeast extract provide nitrogenous and carbonaceous compounds, sulphur, vitamin B complex and trace elements essential for bacterial metabolism. Blood provides additional nutrients and serves as a base to study haemolytic reactions. This medium not only keeps the blood cells in a good state but also help in forming distinct haemolysis. Tryptose Blood Agar Base w/ Yeast Extract, HiVeg™ favours the good growth of *Neisseria meningitides* and *Streptococcus pneumoniae*. However, it can be used with or without blood supplementation.

Type of specimen

Isolated Microorganism

Specimen Collection and Handling:

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

Limitations :

1. Perform biochemical test for further identification (4).

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

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Basal medium : Yellow coloured clear to slightly opalescent gel forms in Petri plates. After addition of 5% v/v sterile defibrinated blood : Cherry red coloured opaque gel forms in Petri plates.

Reaction

Reaction of 3.4% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed with added 5% v/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth w/o blood	Recovery w/o blood	Growth w/ blood	Recovery w/ blood	Haemolysis
<i>Neisseria meningitidis</i> ATCC 13090	50-100	luxuriant	≥70%	luxuriant	≥70%	none
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	50-100	luxuriant	≥70%	luxuriant	≥70%	beta
<i>Staphylococcus epidermidis</i> ATCC 12228 (00036*)	50-100	luxuriant	≥70%	luxuriant	≥70%	gamma
<i>Streptococcus pneumoniae</i> ATCC 6303	50-100	luxuriant	≥70%	luxuriant	≥70%	alpha
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	luxuriant	≥70%	luxuriant	≥70%	beta

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°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 (5,6).

Reference

1. Casman E. P., 1942, J. Bacteriol., 43:33.
2. Casman E. P., 1947, Am. J. Clin. Pathol., 17: 281.
3. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C. Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4 th Ed., J. B. Lippincott Company.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. 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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Disclaimer :

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