

Nutrient HiVeg[®] Agar 1.5%

MV087

Intended use

Recommended as a general purpose nutrient medium for cultivation of fastidious microorganisms after appropriate enrichment. It can be enriched with blood, ascitic fluid or other enriching fluids.

Composition**

Ingredients	g / L
HiVeg [®] Peptone	5.000
HiVeg [®] extract	3.000
Sodium chloride	8.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 31.0 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. If desired, it can be appropriately enriched with sterile blood or ascitic fluid or serum. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Nutrient Agar 1.5% is the modification of Nutrient Agar recommended by APHA for cultivation and maintenance of non-fastidious microorganisms (1). This medium is prepared by completely replacing animal based peptones with vegetable peptones to avoid BSE/TSE risks associated with animal peptones. This medium is used as a general- purpose medium. Recently ISO Committee (2) has also recommended it with slight modification for sub cultivation of *E.coli* and coliforms from water samples. Nutrient HiVeg[®] Agar 1.5% is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks. HiVeg[®] Peptone and HiVeg[®] extract serves as a source of nitrogen and carbon source, long chain amino acids and other essential nutrients. It may be used for blood culturing work after the addition of sterile 5-10% v/v defibrinated blood. Sodium chloride makes the medium isotonic preventing hemolysis of red blood corpuscles.

Type of specimen

Food and dairy samples; Water samples

Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,3,4). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(5) 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. This medium is general purpose medium and may not support the growth of fastidious organisms.

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

Yellow coloured clear gel forms in Petri plates. With the addition of blood Cherry red coloured opaque gel forms in Petri plates.

Reaction

Reaction of 3.1% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	luxuriant	≥70%
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	luxuriant	≥70%
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	50-100	luxuriant	≥70%

Key : *Corresponding WDCM numbers.

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 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 (6,7).

Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Water quality : Enumeration of *E.coli* and total coliforms, Part 1. International Organization for Standardization (ISO), 2014, Draft ISO/DIS 9308-1.
3. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
5. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC: APHA Press; 2023.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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.

Revision : 03/2025

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