

Eugonic HiVeg™ Broth

MV429

Intended Use:

Recommended for the cultivation of fastidious microorganisms like *Haemophilus*, *Neisseria*, *Pasteurella*, *Brucella* and *Lactobacillus* species.

Composition**

Ingredients	g / L
HiVeg™ hydrolysate	15.000
Soya peptone	5.000
Dextrose (Glucose)	5.000
Sodium chloride	4.000
Sodium sulphite	0.200
L-Cystine	0.200
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 29.4 grams in 1000 ml purified / distilled water. Heat if necessary with frequent stirring to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 40-45°C and add 5 -10% v/v sterile defibrinated blood if desired. The blood may be chocolate by heating.

Principle And Interpretation

Eugonic Broth was developed by Pelczar and Vera (1) for cultivation of fastidious organisms like *Brucella*. This medium can also be used to grow Mycobacteria and various pathogenic fungi including *Nocardia*, *Histoplasma* and *Blastomyces*, when enriched with blood. Niven used this media for detection of spoilage of meats (2). Eugonic Broth was developed to obtain eugonic (luxuriant) growth of fastidious microorganisms like *Brucella* which are otherwise difficult to cultivate (3). The unenriched medium supports rapid growth of lactobacilli associated with cured meat products, dairy products and other foods. APHA recommends Eugonic Broth, which is also used in germinating anaerobic spores pasteurized at 104°C (4,5). Organisms like *Bordetella* and *Neisseria* proliferate in Eugonic HiVeg™ Broth because large amount of sulfur and carbon sources have been added in the formulation. Therefore Eugonic HiVeg™ Broth is recommended for the direct isolation of *Bordetella pertussis* and *Neisseria meningitides* from the test materials such as throat mucus, blood, cerebrospinal fluid, pleural fluid and other specimens.

For the isolation of *Bacillus pumilus*, Eugonic HiVeg™ Broth can be supplemented with 0.1% starch, prior to sterilization (3) Eugonic HiVeg™ Broth is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks. HiVeg™ hydrolysate and Soya peptone provide the nitrogen, vitamins and amino acids, which supports the growth of fastidious microbial species. The high concentration of dextrose is the energy source for rapid growth of bacteria. L-Cystine and sodium sulphite are added to stimulate growth. Sodium chloride maintains the osmotic balance of the media. The high carbohydrate content along with high sulfur (cystine) content improves growth with chromogenicity (4).

Type of specimen

Food samples

Specimen Collection and Handling

For food 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. Certain fastidious organisms may not grow due to nutritional variation.
2. Further biochemical tests must be carried out for confirmation.

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

Yellow coloured, clear solution in tubes

Reaction

Reaction of 2.94% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed with added 5-10%v/v sterile defibrinated blood after an incubation at 35-37°C for 48 hours (fungal cultures incubated at 25-30°C).

Organism	Inoculum (CFU)	Growth
<i>Bacillus pumilus</i> ATCC 14884	50-100	good (with 0.1% starch)
<i>Brucella abortus</i> ATCC 4315	50-100	good (under 3-5% CO ₂)
<i>Candida albicans</i> ATCC 26790	50-100	good
<i>Lactobacillus fermentum</i> ATCC 9338	50-100	good
<i>Neisseria meningitidis</i> ATCC 13090	50-100	good
<i>Streptococcus pneumoniae</i> ATCC 6303	50-100	luxuriant(under 3-5% CO ₂)
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	luxuriant(under 3-5% CO ₂)

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 (2,3).

Reference

1. Pelczar and Vera J., 1949, Milk Plant Monthly 38:30.
2. Niven C. F., Castellani A. G., and Allanson V., 1949, J. Bacteriol., 58:633.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams & Wilkins, Baltimore, Md.
4. Frank H. A., 1955, J. Bacteriol., 70:269.
5. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

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.

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