Streptococcus Enrichment HiVeg™ Broth (SE HiVeg™ Broth)

MV465

Intended Use:

Recommended for enrichment of Streptococci (*Enterococcus faecalis*) from various samples.

Composition**

Ingredients	g / L
HiVeg™ hydrolysate	26.000
Yeast extract	6.000
Synthetic detergent No.2	3.000
Sodium chloride	5.000
Sodium citrate	1.000
Esculin	1.000
Ferric ammonium citrate	0.500
Sodium azide	0.250
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 42.8 grams in 1000 ml purified/distilled water. Heat to dissolve the medium completely. Dispense in 9 ml amounts into test tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Cool to 45-50ºC.

Principle And Interpretation

The ability of Enterococci to hydrolyze the esculin was first observed by Rochaix (1). The Enterococci can hydrolyze the esculin but not the other Streptococci can do it. Presumptive identification of group D Streptococci by bile esculin test was reported by Facklam and Moody (2). Later on Bile Esculin medium was modified by Isenberg et al (3) by reducing the bile concentration and by adding sodium azide to the medium.

Streptococcus Enrichment HiVeg™ Broth (SE HiVeg™ Broth) is prepared by completely replacing animal based peptone with vegetable peptones to avoid BSE/TSE risks associate with animal peptones. HiVeg™ hydrolysate and yeast extract provide nitrogenous compounds, carbon, sulphur, trace elements and vitamin B complex, essential for Streptococci. Esculin is hydrolyzed by group D Streptococci (including Enterococci) to esculetin and dextrose. Esculetin reacts with ferric ammonium citrate to form a dark brown-black coloured complex (4). Synthetic detergent No.2 inhibits gram-positive bacteria other than Streptococci. Sodium azide inhibits gram-negative bacteria.

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 (5,6,7). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(8) 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 clinical 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 the expiry period when stored at recommended temperature.

Quality Control

Appearance

Yellow coloured homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution with a bluish tinge.

Reaction

Reaction of 4.28% 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 18 - 48 hours

Organism	Growth	Colour of medium
Escherichia coli ATCC 25922 (00013*)	inhibited	-
Enterococcus faecalis ATCC 29212 (00087*)	good-luxuriant	black
Staphylococcus aureus subsp. *aureus* ATCC 25923 (00034*)	inhibited	

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°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 (9,10).

Reference

1. Rochaix, 1924, C.R. Soc. Biol., 90:771.
2. Facklam and Moody, 1970, Appl. Microbiol., 20:245.
3. Isenberg, Goldberg and Sampson, 1970, Appl. Microbiol., 20:433.
4. MacFaddin J., 1980, Biochemical Tests for Identification of Medical Bacteria, 2nd ed., Williams and Wilkins,Baltimore.
5. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
6. 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.
7. 7Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
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9. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
10. 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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