



Bile Esculin Agar, Modified

M972A

Intended use

Recommended for the isolation and presumptive identification of group D Streptococci/ Enterococci from food, pharmaceutical products and clinical samples.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
HM Peptone B #	3.000
Bile \$	20.000
Esculin	1.000
Ferric citrate	0.500
Agar	15.000
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

- Equivalent to Beef extract ; \$- Equivalent to Oxgall

Directions

Suspend 44.5 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Mix and dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubed medium to solidify in slanted position.

Principle And Interpretation

This medium is a modification of Bile esculin agar, M972 that differs in content of bile. The value of bile tolerance together with hydrolysis of esculin as a means of presumptive identification of group D streptococci/ enterococci is widely recognized (1). Bile esculin agar was formulated by Swan (2) for the isolation and identification of Group D Streptococci from food. This medium was also shows differentiation of *Enterobacteriaceae*, *Klebsiella* and *Enterobacter-Serratia* division from other *Enterobacteriaceae* genera on the basis of esculin hydrolysis (3).

Peptone and HM Peptone B provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other essential nutrients. The medium contains 2% bile that inhibits gram-positive bacteria other than group D Streptococci and Enterococci. Enterococci and Group D Streptococci hydrolyzes esculin to esculetin and dextrose, which reacts with ferric citrate producing brownish black precipitate (4). Originally Bile esculin test was used for identification of Enterococci. But it was found that this test is also shared by group D Streptococci (3) and therefore it is recommended that other tests such as salt tolerance be performed while identifying Enterococci (4).

Type of specimen

Clinical samples- faeces, Food and dairy samples.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (2,7,8).

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

Warning and Precautions

In Vitro diagnostic Use. For professional use only. 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 tests must be carried out in conjunction 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

Light yellow to brownish yellow coloured homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel with/without a bluish tinge forms in Petri plates.

Reaction

Reaction of 4.5% w/v aqueous solution at 25°C pH : 7.1±0.2

pH

6.90-7.30

Cultural Response

Cultural characteristics observed after an incubation at 35°C-37°C for 18-24 hours in an increased atmosphere of carbon dioxide.

Organism	Growth	Esculin hydrolysis
<i>Enterococcus faecalis</i> ATCC luxuriant 29212 (00087*)		Positive
<i>Streptococcus pyogenes</i> ATCC 12344	luxuriant	Negative
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	luxuriant	Positive
<i>Proteus mirabilis</i> ATCC 25933	luxuriant	Negative

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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference

1. Facklam R., 1968, Appl. Microbiol
2. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, American Public Health Association, Washington, D.C.
3. Swan A., 1954, J. Clin. Pathol., 7:160
4. Facklam R., 1973, Appl. Microbiol., 26:138.
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.
7. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington
8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

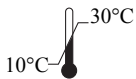
Please refer disclaimer Overleaf.



In vitro diagnostic medical device



CE Marking



Storage temperature



Do not use if package is damaged



HiMedia Laboratories Pvt. Limited,
C-40, Road No.21Y, MIDC, Wagle
Industrial Area, Thane (W)
-400604, MS, India



CE Partner 4U ,Esdoomlaan 13, 3951
DB Maarn The Netherlands,
www.cepartner4u.eu

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.