Nutrient Agar pH 7.0

M561A

Intended Use

Recommended for the cultivation of *Salmonella* species.

Composition**

Ingredients	Gms / Litre
Pepone	5.000
HM extract #	3.000
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Meat extract

Directions

Suspend 23 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, the medium can be enriched with 5 - 10% v/v sterile defibrinated blood. Mix well and Pour into Sterile Petri plates

Principle And Interpretation

Nutrient Agar is a basic culture medium used for maintenance or to check purity of subcultures prior to biochemical or serological tests from water (1) and Dairy (2). Many bacteria have the optimum pH growth range of 6.6 to 7.0. This medium may be used as slants or plates for routine work with non-fastidious organisms. Wetmore and Gochenour (3) maintained cultures of *Malleomyces* and *Pseudomonas* on Nutrient Agar to which glycerol was added. Greenberg and Cooper (4) employed this medium in cultivation of Staphylococci for the preparation of vaccines and antigens. Nutrient Agars have relatively simple formulation which provides the necessary nutrients for the growth of many microorganisms which are not very fastidious. HM extract contains vitamins, organic nitrogen compounds, salts and little carbohydates (5). Peptone provide amino acids and long chain peptides for the organisms.

Type of specimen

Food samplet

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (6).
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 guidleines should be followed while handling specimens. Saftey guidelines may be referred in individual safety data sheets

Limitations :

1. Due to variable nutritional requirements, some strains show poor growth on this medium.

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 to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 2.3% 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 18-24 hours .

Organism	Inoculum (CFU)	Growth	Recovery
Enterococcus faecalis ATCC 29212 (00087*)	50-100	luxuriant	>=70%
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant	>=70%
Escherichia coli ATCC 8739 (00012*)	50-100	luxuriant	>=70%
Salmonella Enteritidis *ATCC 13076* (00030*)	50-100	luxuriant	>=70%
Salmonella Typhi *ATCC 6539*	50-100	luxuriant	>=70%
Salmonella Typhimurium *ATCC 14028* (00031*)	50-100	luxuriant	>=70%
Shigella flexneri ATCC 12022	50-100	luxuriant	>=70%
Staphylococcus aureus subsp. *aureus ATCC 25923* (00034*)	50-100	luxuriant	>=70%
Yersinia enterocolitica ATCC 9610 (00038*)	50-100	luxuriant	>=70%
Yersinia enterocolitica ATCC 23715 (00160*)	50-100	luxuriant	>=70%

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30ÁC in a tightly closed container and the prepared medium at 2-8ÁC. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder 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 (7,8).

Reference

1. Greenberg A. E., Trussell R. R. and Clesceri L. S. (Eds.), 1985, Standard Methods for the Examination of Water and Waste water, 16th ed., APHA, Washington D.C.
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3. Wetmore and Gochenour, 1956, J. Bact., 72:79.
4. Greenberg and Cooper, 1960, Can. Med. Assn. J., 83:143.
5. Pelczar, Chan and Kreig, 1986, Microbiology, 5th ed., McGraw-Hill Book Company,New York.
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. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
8. 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.