ARENA BioScien

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Starch Agar

Starch Agar is used for the detection of starch hydrolyzing microorganisms.

REF: BS.1/RH01.100.0100	100 Gram	REF: BS.1/RH01.250.0250	250 Gram
REF: BS.1/RH01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Starch Agar was formulated by Vedder (1) in 1915, for the cultivation of Neisseria . Since then, other media have been developed that are superior to Starch Agar for the isolation of Neisseria species, including enriched GC Medium Base. Starch Agar (M107) is recommended for the detection of starch hydrolyzing microorganisms from foods (2) and clinical samples (3). Although the medium was originally formulated to perform the test for the identification of Bacillus cereus, it can be applied to any kind of microorganism where starch hydrolysis activity is required to be analyzed.

METHOD PRINCIPLE

Peptone, yeast extract and Beef extract provide nitrogenous compounds, carbon, sulphur, trace elements etc. to the microorganisms. Sodium chloride maintains osmotic equilibrium. Flood the surface of 48 hours old culture on Starch Agar with Grams Iodine (S013). Starch hydrolysis is seen as a colourless zone surrounding the colonies. A blue or purple zone indicates that starch is not hydrolyzed. Size of the clear zone is directly proportional to the starch hydrolyzing activity of the strain under study

MEDIA COMPOSITION

Item	Formula in g/L
Peptone	20
Sodium chloride	20
Yeast extract	
Beef extract	
Soluble starch	
Agar	

pH 7.4 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,..).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Handle specimens and inoculated culture bottles as though capable of transmitting infectious agents. All inoculated culture bottles, specimen collection needles, and blood drawing devices should be decontaminated according to country requirement for waste disposal.

  S56: dispose of this material and its container at hazardous or special waste collection point.

  S57: use appropriate container to avoid environmental contamination.

  S61: avoid release in environment.

For further information, refer to the Starch Agar material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

STORAGE AND STABILITY

BioScien Starch Agar
should be stored between 10-30°C in a firmly 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 avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a 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 the stated expiry period.

PROCEDURE

Suspend 30 grams in 1000 ml 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. Mix well and pour into sterile Petri plates.

Deterioration

BioScien Starch Agar
is Cream to yellow homogeneous free flowing powder. Prepared medium is Light yellow coloured clear solution without any precipitate. should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations

SPECIMEN COLLECTION AND PRESERVATION

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (11,12). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10,13). After use, contaminated materials must be sterilized by autoclaving before discarding.

TYPE OF SPECIMEN

Clinical samples
Food and Dairy samples
Environmental samples

EQUIPMENT REQUIRED NOT PROVIDED

Pure isolate

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact the technical support.

PERFORMANCE CHARACTERISTICS

The following organisms are used by us as part of the quality assurance of the product. The total inoculum challenge for each test organism per bottle is 10 to 50 colony forming units (CFU's).

Test Organisms	Growth	Starch hydrolysis
Bacillus subtilis subsp. spizizenii ATCC 6633	Luxuriant	positive reaction ,clearing around the colony
Escherichia coli ATCC 25922	Luxuriant	negative reaction
Staphylococcus aureus subsp. aureus ATCC 25923	Luxuriant	negative reaction
Streptococcus pyogenes ATCC 19615	Luxuriant	negative reaction

REFERENCES

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C. 2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.

3. Harrigan W. and McCance M., 1976, Laboratory Methods in Food and Dairy Microbiology, Academic Press Inc. (London) Ltd.

4.Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition

5. 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.

6. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.,,

7. 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

8. Vedder E. B., 1915, J. Infect. Dis., 16:385.

SYMBOLS IN PRODUCT LABELLING	
IVD For in-vitro diagnostic use	Number of <n> test in the pack
LOT Batch Code/Lot number	Caution
REF Catalogue Number	Do not use if package is damaged
Temperature Limitation	Consult Instruction for use
Expiration Date	
Manufactured by	