



Starch Agar

M107D

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

Composition**

Ingredients	Gms / Litre
Beef extract	3.000
Starch, soluble	10.000
Agar	12.000
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 25 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. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Starch Agar was first developed by Vedder (1) in 1915, as a suitable medium for cultivating *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 (M107D) can be used for the detection of starch hydrolyzing microorganisms from samples such as foods (2) and clinical samples (3).

Beef extract in the medium provides nitrogen, carbon sources, amino acids and vitamins to the growing microorganisms. Starch is a complex carbohydrate source which serves as inducer and substrate for amylase producers. Agar acts as a solidifying agent. Amylase activity can be detected by flooding the surface of 48 hours old culture on Starch Agar with Grams Iodine (S013). Amylase positive organisms show clearing around colony while development of blue to purple zone indicates starch is not hydrolyzed. Size of the clear zone is directly proportional to the starch hydrolyzing activity of the strain under study.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel

Colour and Clarity of Prepared Medium

Yellow clear to slightly opalescent

Reaction

Reaction of 2.5% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH

7.30-7.70

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours. (*- on addition of Iodine solution)

Cultural Response

Organism	Growth	Starch hydrolysis*
<i>Bacillus subtilis</i> ATCC 6633	luxuriant	Positive reaction, clearing around the colony

<i>Streptococcus pyogenes</i> ATCC 19615	luxuriant	Negative reaction , no clearing
<i>Staphylococcus aureus</i> ATCC 25923	luxuriant	Negative reaction ,no clearing
<i>Escherichia coli</i> ATCC 25922	luxuriant	Negative reaction , no clearing

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Vedder E. B., 1915, J. Infect. Dis., 16:385.
2. Harrigan W. and McCance M., 1976, Laboratory Methods in Food and Dairy Microbiology, Academic Press Inc. (London) Ltd.
3. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Tenover F. C., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.,

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