

Bases / Media Supplements

Technical Information

Starch Agar

Product Code: DM 1107

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

Composition**		
Ingredients	Gms / Litre	
Peptic digest of animal tissue	5.000	
Sodium chloride	5.000	
Yeast extract	1.500	
Beef extract	1.500	
Starch, soluble	2.000	
Agar	15.000	
Final pH (at 25°C)	7.4±0.2	
**Formula adjusted, standardized to suit performance	parameters	

Principle & Interpretation

Starch Agar was devised by Vedder⁽¹⁾ in 1915, for the cultivation of *Neisseria*. Since then, other media have also been developed that are superior to Starch Agar for the isolation of *Neisseria* species, including enriched GC Medium Base. Starch Agar (DM1107) 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.

Peptic digest of animal tissue, 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 lodine (035015). 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.

Methodology

Suspend 30 grams of powder media in 1000 ml distilled water. Shake well & heat 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.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.0% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH range 7.20-7.60

Cultural Response/Characteristics

DM 1107: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours. (* - on addition of Iodine solution)

Organism	Inoculum(CFU)	Starch hydrolysis*
Bacillus subtilis ATCC 6633	50-100	Positive reaction ,clearing around the colony
Escherichia coli ATCC 25922	50-100	Negative reaction
Staphylococcus aureus ATCC 25923	50-100	Negative reaction
Streptococcus pyogenes ATCC 19615	50-100	Negative reaction





Storage and Shelf Life-

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label. Prepared Media: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

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 Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.,,

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