HIMEDIA®

Technical Data

Baird-Parker Agar (Agar medium O)

M043B

Intended use

Baird-Parker Agar is recommended for the isolation and enumeration of coagulase positive Staphylococci from food and other materials in accordance with British Pharmacopoeia.

Composition**

Ingredients	Gms / Litre
Tryptone ##	10.000
HM Peptone B#	5.000
Yeast extract	1.000
Glycine	12.000
Sodium pyruvate	10.000
Lithium chloride	5.000
Agar	20.000
pH after sterilization	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Pancreatic digest of casein # Equivalent to Beef extract

Directions

Suspend 63.0 grams in 950 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 and add aseptically 50 ml concentrated Egg Yolk Emulsion (FD045) and 10 ml sterile 1% Potassium Tellurite solution (FD052). Mix well before pouring into sterile Petri plates

Principle And Interpretation

This medium is cited as Agar medium O in British Pharmacopoeia, 2009 (4) recommended for isolation and enumeration of coagulase positive *S. aureus*. This medium was developed by Baird-Parker (2,3) from the Tellurite-glycine formulation of Zebovitz et.al.(11) for isolation of *Staphylococcus aureus* from foods. *Staphylococcus* species are common contaminants in food, dairy, pharmaceutical and cosmetics related products (5). This medium is recommended for sterility checking of materials to detect *Staphylococcus aureus*. Baird Parker medium was reported to be the best medium for selective detection of coagulase positive and entero-toxigenic *Staphylococcus*(9). This medium was found to be less inhibitory to *Staphylococcus aureus* than other media, at the same time being more selective (1,10). Subsequently it was officially adapted by the AOAC and British Pharmacopoeia (4,8).

HM Peptone B, yeast extract and tryptone provide essential nitrogeneous and carbonaceous compounds, long chain amino acids, mineral, vitamin and other growth requirements. Sodium pyruvate protects injured cells and helps recovery. Lithium chloride and potassium tellurite inhibit most of contaminating microflora except *Staphylococcus aureus*. Glycine, pyruvate enhances growth of *Staphylococcus.* With the addition of egg yolk the medium becomes yellow and opaque. Glycine neutralizes aldehyde, while egg yolk neutralizes phenolic compounds, if any, in the test samples. Proteolytic bacteria produce a clear zone around colony in egg yolk containing media also known as Lecithinase reaction. A clear zone and grey-black colonies on this medium are diagnostic for coagulase positive Staphylococci. Upon further incubation, an opaque zone is developed around colonies, which can be due to lipolytic activity. Identity of *Staphylococcus aureus* isolated on Baird-Parker Agar must be confirmed with a coagulase reaction and deoxyribonuclease test. The sterility of product is confirmed by absence of growth of *Staphylococcus aureus* on this medium.

Type of specimen

Food samples; Pharmaceutical samples.

Specimen Collection and Handling

For dietary and pharmaceutical samples, follow appropriate techniques for sample collection & processing as per guidelines (4,5). 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 guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Though the medium is recommended for detection of coagulase positive *Staphylococcus aureus,* other bacteria may grow.
2. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium
3. Each lot of the medium has been tested with the standard strains, slight variation in growth may be observed depending on the source from where the organism has been isolated.

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 2.0% agar gel.

Colour and Clarity of prepared medium

Basal medium: Yellow coloured clear to slightly opalescent gel. After addition of Egg Yolk Emulsion and Tellurite Emulsion: Yellow coloured opaque gel forms in Petri plates.

Reaction

After sterilization, reaction of 6.3% w/v aqueous solution. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

Growth Promotion is carried out in accordance with BP. Cultural response was observed after an incubation at 35-37°C for 18-72 hours. Recovery rate is considered as 100% for bacteria growth on Soybean Casein Digest Agar.

Organism	Inoculum (CFU)	Growth	Observed Lot value (CFU)	Recovery	Colour of colony	Lecithinase
Growth Promoting						
Staphylococcus aureus subsp. *aureus ATCC 6538* (00032*)	50 -100	luxuriant	25 -100	>=50 %	grey-black shiny	Positive, opaque zone around the colony
Additional Microbiological testing						
Staphylococcus aureus subsp. *aureus ATCC* 25923 (00034*)	50 -100	luxuriant	25 -100	>=50 %	grey-black shiny	Positive, opaque zone around the colony
Proteus mirabilis ATCC 25933	50 -100	good - luxuriant	25 -100	>=50 %	brown - black	Negative
Micrococcus luteus ATCC 10240	50 -100	poor - good	15 -40	30 -40 %	shades of brown-black (very small)	Negative
Staphylococcus epidermidis ATCC 12228 (00036*)	50 -100	poor - good	15 -40	30 -40 %	black	Negative
Bacillus subtilis subsp. spizizenii ATCC 6633 (00003*)	50 -100	none - poor	0 -10	0 -10 %	dark brown matt	Negative
Escherichia coli ATCC 8739 (00012*)	50 -100	none- poor	0 -10	0 -10 %	large brown black	Negative

Escherichia coli ATCC 25922 (00034*)	50 -100	none- poor	0 -10	0 -10 %	large brown black	Negative
Escherichia coli NCTC 9002	50 -100	none- poor	0 -10	0 -10 %	large brown black	Negative

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly 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 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 (6,7).

Reference

1. Baer, 1971, J.Assoc. Off. Anal. Chem., 54:732.
2. Baird-Parker,A.C. 1962, J.Appl. Bact.,25: 12.
3. Baird-Parker,A.C. and Davenport,E., 1965,J.Appl.Bact.,28: 390.
4. British Pharmacopoeia, 2009, The Stationery office British Pharmacopoeia.
5. FDA Bacteriological Analytical Manual, 2005, 18th ed., AOAC, Washington, DC.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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.
8. J. Assoc. off. Anal. Chem, 1971, 54:401.
9. Niskanean A and Aalto M, App. Env. Microbiol., 1978, 35:1233
10. Tardio and Baer, 1971, J.Assoc.Off. Anal. Chem., 54:728.
11. Zebovitz, E., Evans J.B. & Niven C.F., (1955), J. Bact; 70:686.

Revision : 04/2020

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.