Baird Parker Agar Base (FPT)

M1736

Intended Use

Recommended for the isolation and enumeration of coagulase positive Staphylococci from food and other materials using FPT Inhibitor Supplement (FD195)

Composition*

Ingredients	Gms / Litre
Tryptone	10.000
HM extract #	5.000
Yeast extract	1.000
Glycine	12.000
Sodium Pyruvate	10.000
Lithium Chloride	5.000
Agar	20.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Meat extract

Directions

Suspend 6.3 grams in 90 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 aseptically add rehydrated content of 1 vial of FPT Inhibitor Supplement (FD195). Mix well and pour into sterile Petri plates.

Principle And Interpretation

This medium is a modification of Baird-Parker Medium (M043) and is recommended for the selective isolation, enumeration and confirmation of *Staphylococcus aureus* from food and other specimens (1). This medium retains the Baird-Parker Agar Base, which has been specifically formulated to resuscitate injured cells (2). This medium differs from Baird-Parker Medium in that the egg yolk emulsion has been replaced by fibrinogen, rabbit plasma and trypsin inhibitor. The fibrinogen was added to enhance the coagulase reaction in the medium. The addition of rabbit plasma was found to be more specific for the coagulase activity when compared to other sources of plasma (3). Trypsin inhibitor was added to prevent fibrinolysis. Some strains of *Staphylococcus aureus* are sensitive to potassium tellurite when used at 0.01% w/v in Baird Parker Agar (M043). This modification of Baird Parker agar base gives comparable growth and selectivity to that achieved on Baird-Parker agar base (M043 and FD045, FD046, FD047). The reduction in potassium tellurite concentration in Baird Parker agar base results in *Staphylococcus aureus* strains forming white, grey or black colonies, which are surrounded by an opaque halo of precipitation, i.e. the coagulase reaction. 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*. Upon further incubation, an opaque zone is developed around colonies which can be due to lipolytic activity. On this medium Staphylococcal coagulase positive colonies are white to grey-black surrounded by an opaque zone of coagulase activity within 24-40 hours incubation at 35°C. Reduction in tellurite is necessary because of absence of egg yolk emulsion. This results in translucent agar and white to grey coloured colonies of Staphylococci. For quantitative results select 20 - 200 colonies. Count *Staphylococcus aureus* like colonies and test them for coagulase reaction. Report *Staphylococcus aureus* per gram of food.

Type of specimen

Food samples

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (4). 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. *Staphylococcus* species other than coagulase positive *Staphylococcus aureus* also grow on this media.
2. Further biochemical and serological tests are necessary for confirmation.
3. Individual organisms differ in their growth requirement and may show variable growth patterns on the 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 2.0% agar gel.

Colour and Clarity

Basal medium : Amber coloured clear to slightly opalescent gel. After addition of Fibrinogen plasma trypsin inhibitor supplement (FD195): Amber coloured opalescent gel forms in Petri plates

Reaction

Reaction of 6.3% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

Cultural characteristics observed with added FPT Inhibitor Supplement (FD195), after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	Lecithinase
Bacillus subtilis subsp. *spizizenii* ATCC 6633 (00003*)	50-100	none - poor	<=10%	dark brown matt	negative
Micrococcus luteus ATCC 10240	50-100	fair-good	30-40%	shades of brown-black (very small)	negative
Proteus mirabilis ATCC 25933	50-100	good - luxuriant	>=50%	brown - black	negative
Staphylococcus aureus subsp. *aureus* ATCC 25923 (00034*)	50-100	good - luxuriant	>=50%	grey-black shiny	positive,opaque zone around the colony
Staphylococcus epidermidis ATCC 12228 (00036*)	50-100	fair-good	30-40%	black	negative
Escherichia coli ATCC 25922 (00013*)	>=10^4	inhibited	0%		

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 (5,6).

Reference

1.Baird-Parker, A.C. and Davenport, E., 1965, J. Appl. Bact., 28:390.
2.Zebovitz, E., Evans J.B. & Niven C.F., (1955), J. Bact., 70: 686.
3.Baird-Parker, A.C. 1962, J .Appl. Bact, 25: 12-19
4.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.
5.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6.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.

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