Technical Information

Baird Parker MiVeg Agar Base

Product Code : VM1043

Application:- Baird Parker MiVeg Agar Base is recommended for the isolation and enumeration of coagulase positive *Staphylococci* from food and other materials.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	10.0
MiVeg extract	5.0
Yeast extract	1.0
Glycine	12.0
Sodium pyruvate	10.0
Lithium chloride	5.0
Agar	20.0
Final pH (at 25°C)	7.0±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MiVeg Baird Parker Agar Base is prepared by usingvegetable peptones in place of animal origin peptones thereby making the medium free from BSE/TSE risks. This medium is modification of medium developed by Baird- Parker (1,2) from the tellurite - glycine formulation of Zebovitz et al (3) for isolation of *Staphylococcus aureus* from foods. Sodium pyruvate protects injured cells and helps recovery. Most of contaminating microflora are inhibited by Lithium chloride and Potassium Tellurite except *Staphylococcus aureus*. Glycine, pyruvate enhances growth of *Staphylococcus*. After the addition of egg yolk the medium becomes light yellow, opaque. A clear zone around colony is observed due to proteolytic bactera in egg yolk containing media. 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. This medium, like the conventional medium is found to be less inhibitory to *Staphylococcus aureus* than other media, at the same time being more selective (4, 5).

However, identity of *Staphylococcus aureus* isolated on Baird-Parker MiVeg Agar must be confirmed with a coagulase reaction. To detect coagulase activity add Fibrinogen Plasma Trypsin Inhibitor Supplement (MS2195) dissolved in 10 ml sterile distilled water added to 90 ml sterile molten medium kept at 45-50°C (6). Mix well and pour into plates. On this medium coagulase positive *Staphylococcal* 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.

Methodology

Suspend 63 grams of powder media in 950 ml distilled water. Mix throughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add 50 ml concentrated Egg Yolk Emulsion (MS2045) and 3 ml sterile 3.5% Potassium Tellurite solution (MS2047) or 50 ml Egg Yolk Tellurite Emulsion (MS2046) for identification of coagulase positive *Staphylococci*. Alternatively one vial of MS2195 (Fibrinogen Plasma Trypsin Inhibitor Supplement) may be added per 90 ml of medium. For more selectivity of the medium one vial of MS2069 (BP sulpha supplement) per 1000 ml may be added. Mix well before pouring.

Warning : Lithium Chloride is harmful. Avoid bodily contact and inhalation of vapours. On contact with skin wash with plenty of water immediately.

Quality Control

Physical Appearance

Light yellow coloured may have slightly greenish tinge homogeneous, free flowing powder.

Gelling

Firm, comparable with 2.0% Agar gel.

Colour and Clarity of prepared medium

Basal medium yields light amber coloured, clear to slightly opalescent gel. With addition of Egg Yolk Tellurite Emulsion (MS2046) yellow coloured, opaque gel forms in petri plates.

Reaction

Reaction of 6.3% w/v aqueous solution of basal medium is pH 7.0 ± 0.2 at 25°C.

pH range

6.8-7.2

Cultural Response/Characteristics

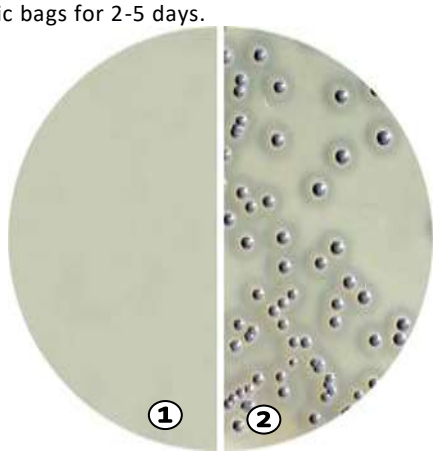
Cultural characteristics observed after an incubation at 35-37°C for 24-48hours with added Egg Yolk Tellurite Emulsion (MS2046)

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony	Lecithinase
Bacillus subtilis (6633)	10^2-10^3	none-poor	<10%	dark brown matt	-
Escherichia coli (25922	10^2-10^3	none-poor	<10%	large brown black	-
Micrococcus luteus(10240)	10^2-10^3	poor-good	<30%	very small*	-
Proteus mirabilis (25933)	10^2-10^3	good-luxuriant	<50%	brown-black	-
Staphylococcus aureus(25923)	10^2-10^3	good-luxuriant	<50%	grey-black shiny	+
Staphylococcus epidermidis (12228)	10^2-10^3	poor-good	<30%	Black	-

Key : + = Positive clear zone around the colony.
- = negative No zone
* in shades of brown black

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: 2-8^0 in sealable plastic bags for 2-5 days.



VM1043 Baird Parker MiVeg Agar Base

1. Control
2. *Staphylococcus aureus*

Further Reading

1. Baird-Parker, A.C. 1962, J. Appl. Bact., 25:12.
2. Baird-Parker, A.C. and Davenport, E., 1965, J. Appl. Bact., 28:390.
3. Zebovitz, E., Evans J.B. & Niven C.F., (1955), J. Bact; 70:686.
4. Tardio and Baer,1971, J. Assoc. Off. Anal. Chem., 54:72.
5. Baer, 1971, J. Assoc. Off. Anal. Chem., 54:732.
6. Beckers N. J. et al, 1984, Canad. J. of Microbiol, 30:470.

Disclaimer :

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