Tellurite Glycine Agar Base

M448

Tellurite Glycine Agar Base is used for quantitative detection of coagulase-positive staphylococci from foods and other sources like skin, mucous membranes, faeces, air and soil.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Yeast extract	5.000
Mannitol	5.000
Dipotassium phosphate	5.000
Lithium chloride	5.000
Glycine	10.000
Agar	16.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 56 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. Cool to 45-50°C and to each 100 ml of base add 2 ml of 1% Potassium Tellurite Solution (FD052). Mix well before pouring into sterile Petri plates.

Caution : Lithium chloride is harmful. Avoid bodily contact and inhalation of vapours. On contact with skin, wash with plenty of water immediately.

Principle And Interpretation

Bacteria in the genus *Staphylococcus* are pathogens of man and other mammals. Traditionally they were divided into two groups on the basis of their ability to clot blood plasma (the coagulase reaction). Coagulase-positive strains of *Staphylococcus aureus* form the most pathogenic staphylococci. The presence of staphylococci in a lesion might first be suspected after examination of a direct gram stain. However, small numbers of bacteria in blood preclude microscopic examination and require culturing first (1). Tellurite Glycine Agar was originally developed by Ludlam and modified by Zebovitz et al (2). It is used for the quantitative detection of coagulase-positive staphylococci from foods and other sources like skin, mucous membranes, air and soil etc. This medium supports better growth of coagulase-positive cocci even if present in small numbers.

Casein enzymic hydrolysate and yeast extract provide nitrogenous compounds, vitamin B complex and other essential growth nutrients. Lithium chloride and potassium tellurite are the inhibitors of the coagulase negative staphylococci and a wide variety of other bacteria. Potassium tellurite also serves as a differential agent since coagulase-positive staphylococci reduce tellurite and form black colonies (3). Mannitol is a source of fermentable carbohydrate for coagulase positive staphylococci . Coagulase-positive staphylococci produce black colonies within 24 hours after an incubation at 37°C. Generally other organisms produce no growth during this incubation period with the exception of an occasional coagulase-negative strain that may produce small grey colonies, not readily confused with black coagulase positive colony.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.6% Agar gel.

Colour and Clarity of prepared medium
Light amber coloured clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 5.6% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
M448: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours with added 1% Potassium Tellurite Solution (FD052).

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Escherichia coli ATCC 25922	>=10^3	inhibited	0%	-
Salmonella Typhimurium ATCC 14028	>=10^3	inhibited	0%	-
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	>=50%	black
Staphylococcus epidermidis ATCC 12228	50-100	poor-fair	10-20%	grey

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. Easmon C. S. F., Adlam C, 1983, Staphylococci and Staphylococcal infections. Vol. I and II, Academic Press, London.
2. Zebovitz E., Evans J. B. and Niven C. F., 1955, J. Bacteriol., 70:687.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

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