Technical Information

Fermentation Medium for Staphylococcus and Micrococcus

Product Code: DM 1827

Application: - Fermentation Medium for Staphylococcus and Micrococcus is used for studying fermentation by *Staphylococcus* and *Micrococcus* species.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Yeast extract	1.000
Glucose	10.000
Bromo cresol purple	0.040
Agar	2.200
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Several methods are available for differentiating Micrococcus from *Staphylococcus* species. These two catalase-positive genera are the most frequently isolated in the clinical laboratory. *Staphylococcus aureus* is a primary pathogen, which may be associated with severe infection. Micrococci are gram-positive organisms that are generally strict aerobes and can reduce nitrate. *Micrococcus luteus* oxidizes carbohydrates to CO_2 and water, and it does not produce acid from glucose anaerobically as well as it does not synthesize or possess arginine dihydrolase or ß-galactosidase. The main characteristics of *Micrococcus* are its ability to produce acid from glucose aerobically esculin hydrolysis, major pigment production, motility, and conversion of nitrate to nitrite [(1)]. Fermentation Medium for Staphylococcus and Micrococcus is recommended for differentiation of these two organisms. *Staphylococcus* produces acid from glucose anaerobically whereas! Micrococcus fails to do so [(2)]. This test is performed in a manner similar to the oxidation fermentation tests for non-fermentative organisms.

Casein enzymic hydrolysate and yeast extract provide necessary nitrogenous nutrients for the organisms. Glucose is the fermentable carbohydrate source in the medium. Bromo cresol purple is the pH indicator. Incorporation of small amount of agar in this medium helps to create anaerobic condition in the depths of the tubes.

Methodology

Suspend 23.24 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow tubed medium to cool in an upright position.

Quality Control

Physical Appearance
Light yellow to greenish yellow homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.22% Agar gel.

Colour and Clarity of prepared medium
Purple coloured, clear to slightly opalescent gel forms in tubes as butts

Reaction
Reaction of 2.32% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range 6.80-7.20

Cultural Response/ characteristices
DM 1827: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Acid production
Micrococcus luteus ATCC 10240	50-100	good-luxuriant	negative reaction, no colour change
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	positive reaction, no colour change

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^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Smith K. J., Neafie R., Yeager J., and Skelton H. G., 1999, British Journal of Dermatology, Vol. 141, No. 3, British Association of Dermatologists, (558-561).
2. Finegold S. M. and Martin W. J., 1982, Bailey and Scotts Diagnostic Microbiology, 6th Ed., The C.V. Mosby Co., St. Louis.

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