Phenylethyl Alcohol Agar

M269

Phenylethyl Alcohol Agar is a selective medium used for the isolation of gram- positive organisms like Staphylococci and Streptococci.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Soya peptone	5.000
Sodium chloride	5.000
Phenylethyl alcohol	2.500
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 42.5 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. For the preparation of blood agar add 5% v/v sterile defibrinated blood to the sterile molten medium cooled to 45-50°C. Mix well before pouring into sterile Petri plates.

Principle And Interpretation

Phenylethyl alcohol is a chemical agent that exhibits inhibitory action against gram-negative and certain gram-positive bacteria. Phenylethyl Alcohol Agar is formulated as per Lilley and Brewer (1) for the selective isolation of gram-positive bacteria. This medium can be supplemented with 5 % sheep blood. This medium is especially useful when specimens are contaminated with swarming Proteus species. It is also useful in the diagnostic studies of wounds and exudate cultures (2). However, Phenylethyl Alcohol Agar cant be used to study haemolytic reactions as the results are atypical.

Casein enzymic hydrolysate and soya peptone provide nitrogen, carbon, sulfur and trace elements to the growing organisms. Addition of sheep blood provides many growth factors. Sodium chloride maintains osmotic equilibrium. Addition of phenylethanol to a nutritive medium permits the growth of gram-positive organisms but inhibits the gram-negative organisms found in the same specimen (1). Phenylethyl alcohol exerts inhibitory bacteriostatic action on gram-negative bacteria by inhibiting their DNA synthesis (3).

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Basal medium: Light amber coloured clear to slightly opalescent gel. After addition of 5%v/v sterile defibrinated blood : Cherry red coloured opaque gel forms in Petri plates

Reaction
Reaction of 4.25% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
M269: Cultural characteristics observed with added 5% v/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours

Organism	Inoculum (CFU)	Growth	Colour of colony

Cultural Response

Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	white to gray or cream to yellow
Enterococcus faecalis ATCC 29212	50-100	good-luxuriant	blue-gray
Salmonella Typhi ATCC 6539	50-100	none-poor	
Escherichia coli ATCC 25922	50-100	none-poor	
Proteus mirabilis ATCC 25933	50-100	none-poor	

Storage and Shelf Life

Store dehydrated medium in tightly closed container and prepared medium at 2-8°C. Use before expiry date on the label

Reference

1. Lilley B. D. and Brewer J. H., 1953, J. Am. Pharm. Assoc., 42:6.
2. Holzman J. A., 1958, Am. J. Med. Technol., 24 (5), 327,342
3. Dowell, Hill and Altemeier, 1964, J. Bacteriol., 88:1811.

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