Phenylethyl Alcohol Agar Phenylethyl Alcohol Agar with 5% Sheep Blood

Intended Use

Phenylethyl Alcohol (PEA) Agar is a selective medium for the isolation of gram-positive organisms, particularly gram-positive cocci, from specimens of mixed gram-positive and gram-negative flora.¹ The medium, when supplemented with 5% sheep blood, should not be used for determination of hemolytic reactions since atypical reactions may be observed.

Summary and Explanation

After noting that phenylethyl alcohol exhibited an inhibitory effect on gram-negative bacteria with only slight effect on grampositive organisms, Lilley and Brewer incorporated the chemical in an infusion agar base as a selective agent for the isolation of gram-positive bacteria.² Phenylethyl Alcohol Agar, unsupplemented or supplemented with 5% sheep blood, is used in the microbiology laboratory to inhibit gram-negative bacteria, particularly *Proteus*, in specimens containing a mixed bacterial flora.

Principles of the Procedure

Phenylethyl Alcohol Agar and Phenylethyl Alcohol Agar with 5% Sheep Blood support the growth of gram-positive bacterial species, due to the content of peptones, which supply nitrogen, carbon, sulfur and trace nutrients. Sodium chloride maintains osmotic equilibrium. Sheep blood is a source of growth factors. Phenylethyl alcohol is bacteriostatic for gramnegative bacteria since it selectively and reversibly inhibits DNA synthesis.³

Formula

BBL[™] Phenylethyl Alcohol Agar

Approximate Formula* Per Liter		
Pancreatic Digest of Casein	15.0	g
Papaic Digest of Soybean Meal	5.0	g
Sodium Chloride	5.0	Q
β-Phenylethyl Alcohol	2.5	g
Agar	15.0	g
*Adjusted and/or supplemented as required to meet performance criteria.		

User Quality Control

Identity Specifications BBL[™] Phenylethyl Alcohol Agar

Dehydrated Appearance:	Slightly moist and softly clumped, resembling "brown sugar" in consistency and appearance.
Solution:	4.25% solution, soluble in purified water upon boiling. Solution is light to medium, yellow to tan, clear to slightly hazy.
Prepared Appearance:	Light to medium, yellow to tan, clear to slightly hazy.
Reaction of 4.25% Solution at 25°C:	рН 7.3 ± 0.2

Cultural Response BBL[™] Phenylethyl Alcohol Agar

Prepare the medium per label directions. Inoculate and incubate at $35 \pm 2^{\circ}$ C with 3-5% CO, for 18-24 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Proteus mirabilis	12453	10 ⁴ -10 ⁵	Partial to complete inhibition
Staphylococcus aureus	25923	10 ³ -10 ⁴	Good
Streptococcus pneumoniae	6305	10 ³ -10 ⁴	Good, alpha hemolysis
Streptococcus pyogenes	19615	10 ³ -10 ⁴	Good, beta hemolysis





Directions for Preparation from Dehydrated Product

- 1. Suspend 42.5 g of the powder in 1 L of purified water. Mix thoroughly.
- 2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
- 3. Autoclave at 121°C for 15 minutes.
- 4. Cool to 45°C and add 5% sterile defibrinated blood, if desired.
- 5. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

Use standard procedures to obtain isolated colonies from specimens. Incubate plates 24-48 hours at $35 \pm 2^{\circ}$ C in an aerobic atmosphere supplemented with carbon dioxide.

Expected Results

Examine plates for growth of gram-positive organisms.

References

- 1. Murray, Baron, Jorgensen, Landry and Pfaller (ed.). 2007. Manual of clinical microbiology, 9th ed.
- American Society for Microbiology, Washington, D.C.
 Lilley and Brewer. 1953. J. Am. Pharm. Assoc. 42:6.
 Dowell, Hill and Altemeir. 1964. J. Bacteriol. 88:1811.

Availability

BBL[™] Phenylethyl Alcohol Agar

Cat. No. 211539 Dehydrated - 500 g

BBL[™] Phenylethyl Alcohol Agar with 5% Sheep Blood

BS12 MCM9 United States and Canada Cat. No. 221179 Prepared Plates - Pkg. of 20* 221277 Prepared Plates – Ctn. of 100* Japan Cat. No. 212086 Prepared Plates – Pkg. of 20* Prepared Plates - Ctn. of 100* 251277 Mexico Cat. No. 252569 Prepared Plates - Pkg. of 10* *Store at 2-8°C.

