

Vitamin K₁ - Hemin Solution

Intended Use

Vitamin K₁ - Hemin Solution is used as a culture medium enrichment for anaerobic microorganisms.

Summary and Explanation

CDC Anaerobe 5% Blood Agar was developed at the Centers for Disease Control and Prevention as a nonselective medium for the isolation and cultivation of a wide variety of obligately anaerobic microorganisms, particularly those found in clinical materials.^{1,2} The medium is enriched with vitamin K₁ and hemin.

Principles of the Procedure

Gibbons and MacDonal reported isolating strains of *Bacteroides melaninogenicus* (*Prevotella melaninogenica*) that require hemin and vitamin K₁ for growth.³ Vitamin K₁ enhances the growth of some strains of *Bacteroides* and certain gram-positive nonsporeformers.⁴ The inclusion of Vitamin K₁ - Hemin in anaerobic culture media has been suggested by many investigators.⁵

Formula

BBL™ Vitamin K₁-Hemin Solution

Approximate Formula* Per Liter

Hemin.....	0.5	g
Sodium Hydroxide.....	0.4	g
Phytomenadione (Vitamin K ₁).....	0.05	g
Ethyl Alcohol, 95%	10.0	mL

*Adjusted and/or supplemented as required to meet performance criteria.

Procedure

Vitamin K₁-Hemin Solution is a ready-to-use solution. The solution cannot be heated and must be added aseptically in the proper amounts to media that have been autoclaved and cooled to 50-55°C.

Vitamin K₁-Hemin Solution is usually employed in prepared media at a final concentration of 5% for optimal results. Add Vitamin K₁-Hemin Solution as required.

Expected Results

Refer to appropriate references and procedures for results.

User Quality Control

Identity Specifications

BBL™ Vitamin K₁-Hemin Solution

Appearance: Dark blackish-brown, opaque.

Cultural Response

BBL™ Vitamin K₁-Hemin Solution

Prepare medium with added Vitamin K₁-Hemin Solution. Inoculate and incubate at 35-37°C for up to 4 days under appropriate atmospheric conditions.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
<i>Bacteroides levii</i>	29147	10 ³ -10 ⁴	Good
<i>Bacteroides vulgatus</i>	8482	10 ³ -10 ⁴	Good

References

1. Dowell, Lombard, Thompson and Armfield. 1977. Media for isolation, characterization and identification of obligately anaerobic bacteria. CDC laboratory manual. CDC, Atlanta, Ga.
2. Jousimies-Somer, Summanen and Finegold. 1999. In Murray, Baron, Pfaller, Tenover and Tenover (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.
3. Gibbons and MacDonald. 1960. J. Bacteriol. 80:164.
4. Finegold, Sutter, Attebery and Rosenblatt. 1974. In Lennette, Spaulding and Truant (ed.), Manual of clinical microbiology, 2nd ed. American Society for Microbiology, Washington, D.C.
5. Murray and Citron. 1991. In Balows, Hausler, Herrmann, Isenberg and Shadomy (ed.), Manual of clinical microbiology, 5th ed. American Society for Microbiology, Washington, D.C.

Availability

BBL™ Vitamin K₁ - Hemin Solution

Cat. No. 212354 Prepared Tubes, 10 mL – Pkg. of 10*

*Store at 2-8°C.