Bacto[™] Heart Infusion Broth

Intended Use

Bacto[™] Heart Infusion Broth is used for cultivating fastidious microorganisms.

Summary and Explanation

Heart Infusion Broth (HIB) is a nonselective general-purpose medium used for the isolation of nutritionally fastidious microorganisms. One of the first media used for the cultivation of bacteria was a liquid medium containing an infusion of meat. Huntoon¹ using fresh beef heart and Bacto Peptone, prepared a "hormone" broth to retain growth promoting substances. Highly pathogenic organisms, such as meningococci and pneumococci, could be grown on infusion medium without enrichments.¹ The formula for HIB contains tryptose, which is better suited to the nutritional requirements of pathogenic bacteria than Bacto Peptone.

Heart infusion media are specified for the isolation of Vibrio cholerae and Vibrio species.^{2,3} HIB may be used as the base in carbohydrate fermentation tests.4

Several modifications of heart infusion media have been described.5 The addition of carbohydrates or other ingredients results in media used for a variety of purposes. The methodologies for the multiple applications using HIB are outlined in the references.

Principles of the Procedure

Infusion from beef heart and tryptose supply the nutritional requirements for growth of microorganisms in heart infusion media. Sodium chloride maintains the osmotic balance of the medium.

Formula

Bacto[™] Heart Infusion Broth

Approximate Formula* Per Liter	
Beef Heart, Infusion from 500 g 10.0	g
Tryptose	g
Sodium Chloride 5.0	g
*Adjusted and/or supplemented as required to meet performance criteria.	

Directions for Preparation from Dehydrated Product

- 1. Dissolve 25 g of the powder in 1 L of purified water.
- 2. Autoclave at 121°C for 15 minutes.
- 3. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

See appropriate references for specific procedures.

Expected Results

Refer to appropriate references and procedures for results.

References

- Huntoon, 1918, J. Infect, Dis, 23:169,
- U.S. Food and Drug Administration. 2001. FDA bacteriological analytical manual, online. AOAC International, Gaithersburg, Md.
- International, Januersong, Ital. Vanderzant and Splitstoesser (ed.). 1992. Compendium of methods for the microbiological examina-tion of foods, 3rd ed. American Public Health Association, Washington, D.C.
- 4. Ruoff. 1995. In Murray, Baron Pfaller, Tenover and Yolken (ed.)., Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C. Atlas. 1997. Handbook of microbiological media, 2nd ed. CRC Press, Inc., Boca Raton, Fla.
- 5.

Availability

Bacto[™] Heart Infusion Broth

BAIVI		APF EP
Cat. No.	238400	Dehydrated – 500 g
	238100	Dehydrated – 2 kg

User Quality Control

Identity Specifications Bacto[™] Heart Infusion Broth

Dehydrated Appearance:	Beige, homogeneous, free-flowing.
Solution:	2.5% solution, soluble in purified water. Solution is light to medium amber, clear.
Prepared Appearance:	Light to medium amber, clear.
Reaction of 2.5% Solution at 25°C:	pH 7.4 ± 0.2

Cultural Response Bacto[™] Heart Infusion Broth

Prepare the medium per label directions. Inoculate and incubate at 35 ± 2°C for 18-48 hours

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	
Escherichia coli	25922	10 ² -10 ³	Good	
Staphylococcus aureus	25923	10 ² -10 ³	Good	
Streptococcus pneumoniae	6305	10 ² -10 ³	Good	
Streptococcus pyogenes	19615	10 ² -10 ³	Good	



