

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. Huntton¹ 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	10.0 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

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

Availability

Bacto™ Heart Infusion Broth

BAM CCAM COMPF 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
<i>Escherichia coli</i>	25922	10 ² -10 ³	Good
<i>Staphylococcus aureus</i>	25923	10 ² -10 ³	Good
<i>Streptococcus pneumoniae</i>	6305	10 ² -10 ³	Good
<i>Streptococcus pyogenes</i>	19615	10 ² -10 ³	Good

