



PRODUCT SPECIFICATION SHEET

Brain Heart Infusion Broth (DM811)

Intended Use

Brain Heart Infusion Broth is a highly nutritious liquid medium used for cultivation of wide variety of fastidious organisms.

Product Summary and Explanation

Rosenow described brain-heart infusion broth prepared by adding pieces of brain tissue to meat infusion or beef extract dextrose broth.⁽¹⁾ Hayden modified the original formula while working with dental pathogens.⁽²⁾ The current formula is a modification of Rosenow and Hayden, using dehydrated infusions of calf brain and beef heart tissue.^(1,2) Brain heart infusion broth (BHI) is a liquid medium rich in nutrients, suitable for the cultivation of several fastidious strains of bacteria, such as streptococci, meningococci and pneumococci, fungi and yeasts. It is especially useful as a growth and suspension medium for staphylococci which are to be tested for coagulase production.^(3,4) BHI broth, 0.5 ml per tube is used for the cultivation of bacteria employed in the preparation of inocula for microdilution minimal inhibitory concentration (MIC). When a large number of cells are inoculated into the small volume of broth, a bacterial culture rapidly reaches its stationary phase of growth. The medium is also used in 5-mL amounts per tube for the preparation of inocula in antimicrobial susceptibility test procedures. Fildes enrichment may be incorporated for the growth of fastidious organisms.^(5,6) With the addition of 0.1% agar, the medium is used for the cultivation of anaerobes. The medium pre-reduced in Hungate tubes is recommended for the cultivation of anaerobic microorganisms, particularly obligate anaerobes.⁽⁷⁾ The broth medium that contains 6.5% sodium chloride is used to differentiate the enterococci from nonenterococcal group D streptococci by the 6.5% salt tolerance test.⁽⁹⁾ Brain Heart Infusion without Dextrose is a basal medium used with carbohydrates for fermentation studies.⁽⁸⁾

Principles of the Procedure

Brain Heart Infusion broth is nutritious and well buffered medium to support the growth of wide variety of organisms. Proteose peptone and infusions (calf brain and beef heart) serve as sources of carbon, nitrogen, essential growth factors, amino acids and vitamins to support the growth of fastidious and non fastidious organisms. Dextrose is the carbon energy source. Disodium phosphate acts as a buffering agent whereas; sodium chloride acts as a differential and/or selective agent by interfering with membrane permeability and maintains the osmotic balance of the medium.

Formula / Liter

Ingredients	Gms / Liter
Calf brain infusion	200.00
Beef heart infusion	250.00
Proteose peptone	10.00
Dextrose	2.00
Sodium chloride	5.00
Disodium phosphate	2.50
Final pH: 7.4 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.





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Directions

1. Suspend 37 grams of the medium in one liter of distilled water.
2. Dispense into bottles or tubes and sterilize by autoclaving at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
3. For best results, the medium should be used on the day it is prepared, otherwise, it should be boiled or steamed for a few minutes and then cooled before use.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow coloured, homogeneous, free flowing powder
Prepared Medium	Light to medium amber coloured clear solution without any precipitate
Reaction of 3.7% Solution	pH : 7.4 ± 0.2 at 25°C
Gel Strength	Not Applicable

Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Enterococcus faecalis ATCC 29212</i>	50 -100	good-luxuriant
2.	<i>Neisseria meningitidis ATCC 13090</i>	50 -100	good-luxuriant
3.	<i>Streptococcus pneumonia ATCC 6303</i>	50-100	good-luxuriant
4.	<i>Streptococcus pyogenes ATCC 19615</i>	50-100	good-luxuriant
5.	<i>Candida albicans ATCC 10231</i>	50-100	good-luxuriant
6.	<i>Staphylococcus aureus ATCC 25923</i>	50-100	good-luxuriant

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. Brain Heart Infusion broth should be directly inoculated with the inoculums.
2. Immediately place the inoculated containers under anaerobic condition and incubate at 35 - 37°C for 18 - 48 hours.

Results

1. Growth in the containers is indicated by the presence of turbidity as compared to an uninoculated control.
2. If growth observed, cultures should be examined by Gram stain and subcultured onto an appropriate media.
3. If anaerobes are suspected, subcultures should be incubated under anaerobic condition.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.





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Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Brain Heart Infusion Broth.

Product Code : DM811

Available Pack sizes : 100gm / 500gm

References

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7. Hungate. 1969. Methods in microbiology. Academic Press, New York, N.Y.
8. Pratt-Rippin and Pezzlo. 1992. In Isenberg (ed.), Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.
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Further Information

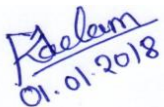
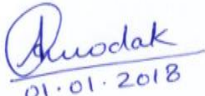

For further information please contact your local MICROMASTER Representative.



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