

PRODUCT INFORMATION AND QUALITY CONTROL SHEET

BRAIN HEART INFUSION AGAR

I. INTENDED USE

Brain Heart Infusion Agar is used for the cultivation of a wide variety of fastidious organisms.

II. SUMMARY AND EXPLANATION

Rosenow prepared a rich medium for culturing streptococci by combining dextrose broth and brain tissue.¹ Hayden modified the original formula while working with dental pathogens.² The current formula is a modification of Ronsenow and Hayden, using dehydrated infusions of pork brain and pork heart tissue.

Brain-Heart Infusion Agar can be supplemented with antibiotics, varying amounts of sodium chloride, yeast extract and serum to provide a rich medium for bacteria, yeast, and pathogenic fungi.³ Brain-Heart Infusion Agar (BHI Agar), is specified in many references for food and water testing.⁴⁻⁶ Standard Methods for the Examination of Water and Wastewater recommends Brain-Heart Infusion media in tests for the verification of fecal streptococci.⁷

III. PRINCIPLES OF THE PROCEDURE

The nitrogen, vitamin, and carbon source is provided by Brain Heart Infusion, Enzymatic Digest of Animal Tissue and Enzymatic Digest of Casein in BHI Agar. Dextrose is the carbohydrate source, and Sodium Chloride maintains the osmotic environment. Agar is the solidifying agent.

IV. TYPICAL FORMULA AND APPEARANCE

Appearance = light to medium amber, slightly opalescent (Approximate formula* per liter of processed water)

Brain Heart Infusion (Solids)	8.0 g
Enzymatic Digest of Animal Tissue	5.0 g
Enzymatic Digest of Casein	16.0 g
Dextrose	2.0 g
Sodium Chloride	5.0 g
Disodium Phosphate	2.5 g
Agar	15.0

*adjusted and/or supplemented to meet performance criteria.

Final pH: 7.4 ± 0.2 @ 25°C

V. PRECAUTIONS

This product is for IN VITRO diagnostic use only. Culture specimens may contain microorganisms which can be potentially infectious to the user. Strict adherence to aseptic techniques and established precautions against microbiological hazards should be followed throughout the procedure. Carefully dispose of all items which contact patient specimens or isolated bacteria.

VI. STORAGE/SHELF LIFE

Plated media should be stored at 2-8°C (36-46°F), media side up, in the unopened or resealed package protected from light. DO NOT FREEZE OR EXPOSE TO HIGH TEMPERATURES. Allow unopened plates to warm to room temperature prior to inoculation. Prior to and during inoculation procedures, plates should be handled in a manner that minimizes product exposure to the environment. Product which has exceeded the assigned expiration date noted on the label should not be used. Do not use plates that exhibit evidence of drying, cracking, discoloration, microbial contamination or any other signs of deterioration. The presence of excessive condensate may indicate plates which have been damaged by exposure to temperature extremes.

VII. SPECIMEN COLLECTION

The quality of culture results depends primarily on the adequacy and condition of the specimen submitted for examination. Proper specimen collection techniques must be followed to ensure the most accurate culture results. Consult appropriate references for information about the processing and inoculation of specimens bacterial culture. Sterile swabs and collection containers should be used. Plates should be inoculated promptly after specimen

collection.

VIII. MATERIALS PROVIDED

Brain Heart Infusion Agar Plates (10/pkg)

IX. MATERIALS REQUIRED BUT NOT PROVIDED

Incubator maintaining 35-37°C.

Ancillary culture media, reagents and laboratory equipment are required.

X. PROCEDURE

Inoculate the specimen as soon as possible after it is received in the laboratory. Streak the specimen with a sterile inoculating loop to obtain isolated colonies. Incubate the inoculated plates at 35-37°C, agar side for 18-24 hours.

XI. EXPECTED RESULTS

NCCLS CONTROL ORGANISMS (ATCC STRAINS)

<i>Candida albicans</i> (ATCC 10231)	growth
<i>Neisseria meningitidis</i> (ATCC 13090)	growth
<i>Streptococcus pneumoniae</i> (ATCC 6305)	growth
<i>Streptococcus pyogenes</i> (ATCC 19615)	growth

XII. LABORATORY RESULTS

This medium is intended to be used as a primary isolation medium. Identification of organisms may be made on the basis of typical gross colony morphology, microscopic characteristics, and physiologic and pathologic characteristics. Additional test procedures should be used to confirm findings.

XIII. LIMITATIONS

The ability to detect microorganisms by culture techniques can be affected by the following factors: improper specimen collection, storage and inoculation, improper culture incubation temperatures and atmospheres, improper length of culture incubation, and improper storage and handling of culture media.

XIV. REFERENCES

1. Ronenow, E.C. 1919. Studies on elective localization. J. Dent. Research 1:205-249.
2. Hayden, R.L. 1923. Elective localization in the eye of bacteria from infected teeth. Arch. Int. Med. 32:826-849.
3. Atlas, R.M. 1993. Handbook of microbiological media, p. 147-153. CRC Press, Boca Raton, FL.
4. Cunniff, P. (ed.). 1995. Official Methods of Analysis of AOAC International, 16th ed. AOAC International, Gaithersburg, MD.
5. U.S. Food and Drug Administration. 1995. Bacteriological analytical manual, 8th ed., AOAC International, Gaithersburg, MD.
6. Vanderzant, C., and D.F. Splittstoesser (eds.). 1992. Compendium of methods for the microbiological examination of food., 3rd ed. American Public Health Association, Washington, D.C.
7. Greenberg, A.E., L.S. Clesceri, and A.D. Eaton (eds.). 1995. Standard methods for the examination of water and wastewater, 19th ed. American Public Health Association, Washington, D.C.

USER QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND INFORMATION

HealthLink recommends that the following quality assurance and quality control procedures be performed on each batch of product.

I. QUALITY ASSURANCE

The following quality assurance procedures must be performed to assure the product will perform according to its intended use within the assigned expiry date:

1. Daily, document that product storage refrigerator maintains temperature within 2-8°C.
2. Daily, document that laboratory incubator maintains temperature within the recommended range: 35-37°C.

II. QUALITY CONTROL

The following incoming inspection procedures must be performed for each batch (batch = same lot, same shipment) of culture media received in the laboratory:

Inspect plates according to instructions contained in the Section VI "STORAGE/SHELF LIFE"

Note: Notify Technical Service immediately if media does not meet the inspection criteria.

TECHNICAL SERVICE

HealthLink provides a toll free technical service line (1-800-638-2625) to assist with product usage. To have technical questions answered; please call between the hours of 9:00 am to 5:00 pm EST.

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