



## Instructions for Use

# CRITERION™ BRAIN HEART INFUSION (BHI) AGAR

<a href="#">Cat. no. C5120</a>	CRITERION™ Brain Heart Infusion Agar	99.4gm
<a href="#">Cat. no. C5121</a>	CRITERION™ Brain Heart Infusion Agar	500gm
<a href="#">Cat. no. C5122</a>	CRITERION™ Brain Heart Infusion Agar	2kg
<a href="#">Cat. no. C5123</a>	CRITERION™ Brain Heart Infusion Agar	10kg
Cat. no. C5124	CRITERION™ Brain Heart Infusion Agar	50kg

## INTENDED USE

Hardy Diagnostics CRITERION™ Brain Heart Infusion Agar is a general purpose nutrient medium recommended for the cultivation and isolation of a variety of fastidious and nonfastidious microorganisms, including bacteria, yeasts, and mold.

This dehydrated culture medium is a raw material intended to be used in the making of prepared media products, which will require further processing, additional ingredients, or supplements.

## SUMMARY

Rosenow, by adding brain tissue to dextrose broth, discovered a medium useful in the cultivation of streptococci.<sup>(8)</sup> Formula modifications were made by various researchers who found the medium effective in the recovery of dental pathogens.<sup>(4,5,8)</sup> The medium was further modified by the addition of agar and a variety of supplements and enrichments which further enhanced the recovery of microorganisms.

The brain heart infusion, peptone and dextrose components of the medium provide the nutrients to BHI Agar. Organic nitrogen, carbon, sulfur, vitamins and trace substances are provided by the peptones and infusion. Dextrose provides the carbohydrate source for fermentative microorganisms. Disodium phosphate is added to the medium in order to maintain an optimal pH.

## FORMULA

Gram weight per liter:	49.7gm/L
Pancreatic Digest of Casein	16.0gm
Brain Heart Infusion from Solids	8.0gm
Peptic Digest of Animal Tissue	5.0gm
Sodium Chloride	3.0gm

Disodium Phosphate	2.5gm
Dextrose	2.0gm
Agar	13.5gm

Final pH 7.4 +/- 0.2 at 25°C.

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

## STORAGE AND SHELF LIFE

Store the sealed bottle(s) containing dehydrated culture medium at 2-30°C. Dehydrated culture medium is very hygroscopic. Keep lid tightly sealed. Protect dehydrated culture media from moisture and light. The dehydrated culture media should be discarded if it is not free-flowing or if the color has changed from its original beige.

Store the prepared culture media at 2-8°C.

The expiration dating on the product label applies to the product in its intact packaging when stored as directed. The product may be used and tested up to the expiration date on the product label and incubated for the recommended quality control incubation times.

Refer to the document "[Storage](#)" for more information.

## PRECAUTIONS

This product may contain components of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not guarantee the absence of transmissible pathogenic agents. Therefore, it is recommended that these products be treated as potentially infectious, and handle observing the usual universal blood precautions. Do not ingest, inhale, or allow to come into contact with skin.

This product is for laboratory use only. It is to be used only by adequately trained and qualified laboratory personnel. Observe approved biohazard precautions and aseptic techniques. All laboratory specimens should be considered infectious and handled according to "standard precautions." The "Guidelines for Isolation Precautions" is available from the Centers for Disease Control and Prevention at [www.cdc.gov/ncidod/dhqp/gl\\_isolation.html](http://www.cdc.gov/ncidod/dhqp/gl_isolation.html).

For additional information regarding specific precautions for the prevention of the transmission of all infectious agents from laboratory instruments and materials, and for recommendations for the management of exposure to infectious disease, refer to CLSI document M-29: *Protection of Laboratory Workers from Occupationally Acquired Infections: Approved Guideline*.

Sterilize all biohazard waste before disposal.

Refer to the document "[Precautions When Using Media](#)" for more information.

Refer to the document [SDS Search](#) instructions on the Hardy Diagnostics' website for more information.

## METHOD OF PREPARATION FOR DEHYDRATED CULTURE MEDIA

1. Suspend 49.7gm of the dehydrated culture media in 1 liter of distilled or deionized water.
2. Heat to boiling and mix to dissolve completely.
3. Sterilize in the autoclave at 121°C. for 15 minutes.
4. Cool to 45-50°C. and aseptically add enrichments, if desired.
5. Dispense into sterile containers.

## PROCEDURE AND INTERPRETATION OF RESULTS

For information on procedures and interpretation of results, consult listed references or refer to the prepared media Instructions for Use (IFU) for Cat. No. W15.

## LIMITATIONS

It is recommended that biochemical, immunological, molecular, or mass spectrometry testing be performed on colonies from pure culture for complete identification.

Some formulations may require a settling period before pH testing of the prepared medium. If the pH is tested immediately after preparation and is out of specification, retest the medium after 24 hours to obtain final pH results.

Refer to the document "[Limitations of Procedures and Warranty](#)" for more information.

## MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as autoclaves, incinerators, and incubators, etc., are not provided.

## QUALITY CONTROL

Hardy Diagnostics tests each lot of commercially manufactured media using appropriate quality control microorganisms and quality specifications as outlined on the Certificates of Analysis (CofA). The following organisms are routinely used for testing at Hardy Diagnostics:

Test Organisms	Inoculation Method*	Incubation			Results
		Time	Temperature	Atmosphere	
<i>Escherichia coli</i> ATCC® 25922	A	24-48hr	35°C	Aerobic	Growth
<i>Staphylococcus aureus</i> ATCC® 25923	A	24-48hr	35°C	Aerobic	Growth
<i>Staphylococcus epidermidis</i> ATCC® 12228	A	18-24hr	35°C	Aerobic	Growth

\* Refer to the document "[Inoculation Procedures for Media QC](#)" for more information.

## USER QUALITY CONTROL

Users of dehydrated culture media should perform QC testing in accordance with applicable government regulatory agencies, and in compliance with accreditation requirements. Hardy Diagnostics recommends end users check for signs of contamination and deterioration and, if dictated by laboratory quality control procedures or regulation, perform quality control testing to demonstrate growth or a positive reaction and to demonstrate inhibition or a negative reaction, if applicable. Hardy Diagnostics quality control testing is documented on the certificates of analysis (CofA) available from Hardy Diagnostics [Certificates of Analysis](#) website. In addition, refer to the following document "[Finished Product Quality Control Procedures](#)," for more information on QC or see reference(s) for more specific information.

## PHYSICAL APPEARANCE

CRITERION™ Brain Heart Infusion Agar powder should appear homogeneous, free-flowing, and beige in color. The prepared media should appear clear, and light to medium amber in color.

## REFERENCES

1. Jorgensen., et al. *Manual of Clinical Microbiology*, American Society for Microbiology, Washington, D.C.
2. Tille, P., et al. *Bailey and Scott's Diagnostic Microbiology*, C.V. Mosby Company, St. Louis, MO.
3. Falk, C.R., et al. 1939. *J. Bacteriol.*; 37:121.
4. Hayden, R.L. 1932. *Arch. Internal Med.*; 32:828.
5. Isenberg, H.D. *Clinical Microbiology Procedures Handbook*, Vol. I, II & III. American Society for Microbiology, Washington, D.C.
6. MacFaddin, J.F. 1985. *Media for Isolation, Cultivation, Identification, Maintenance of Bacteria*, Vol. I. Williams & Wilkins, Baltimore, MD.
7. Hitchens, A.P. 1921. *J. Infect. Disease*; 29:230.
8. Rosenow, E.C. 1919. *J. Dental Research*; 1:205.
9. *Quality Assurance for Commercially Prepared Microbiological Culture Media*, M22. Clinical and Laboratory Standards Institute (CLSI - formerly NCCLS), Wayne, PA.

ATCC is a registered trademark of the American Type Culture Collection.

IFU-10113[A]



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[Ordering Information](#)

Distribution Centers:

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The Hardy Diagnostics manufacturing facility and quality management system is certified to ISO 13485.

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