



## Instructions for Use

### CRITERION™ TODD HEWITT BROTH

<a href="#">Cat. no. C7090</a>	CRITERION™ Todd Hewitt Broth	60gm
<a href="#">Cat. no. C7091</a>	CRITERION™ Todd Hewitt Broth	500gm
<a href="#">Cat. no. C7092</a>	CRITERION™ Todd Hewitt Broth	2kg
<a href="#">Cat. no. C7093</a>	CRITERION™ Todd Hewitt Broth	10kg
Cat. no. C7094	CRITERION™ Todd Hewitt Broth	50kg

### INTENDED USE

Hardy Diagnostics CRITERION™ Todd Hewitt Broth is recommended for the production of antigenic streptococcal hemolysin and the cultivation of streptococci prior to serological grouping. It is also recommended for the cultivation of beta-hemolytic streptococci, pneumococci and other fastidious organisms.

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

Todd Hewitt Broth was originally developed in 1932 by Todd and Hewitt. Elliot found the medium to be useful in growing group A streptococci for the production of the type specific M protein antigen.<sup>(1)</sup> Later, the formula was modified by Updyke and Nickel who found the medium to be particularly useful for growing group A streptococci for serological typing.<sup>(2)</sup>

CRITERION™ Todd Hewitt Broth follows the formula developed by Updyke and Nickel.<sup>(2)</sup> The medium is composed of beef heart infusion, peptones and yeast extract which all supply necessary growth nutrients. Dextrose is added as an energy source and stimulates streptococcal antigen production. Sodium carbonate and disodium phosphate are included as buffers which serve to protect the hemolysin from inactivation by acid produced from dextrose fermentation.

### FORMULA

Gram weight per liter:	30.0gm/L
Pancreatic Digest of Casein	10.0gm
Yeast Extract	10.0gm
Beef Heart Infusion	3.1gm
Sodium Carbonate	2.5gm

Dextrose	2.0gm
Sodium Chloride	2.0gm
Disodium Phosphate	0.4gm

Final pH 7.8 +/- 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 light beige.

Store the prepared culture media at 2-30°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 30.0gm 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. Dispense into sterile tubes.

## 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. K79.

## 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.

*Streptococcus* spp. grown in Todd Hewitt Broth and harvested as antigen to raise antibodies may carry antigenic material from the broth.

Todd Hewitt Broth is nonselective. Additional tests including subculture to an appropriate agar media, as well as biochemical and/or serological tests, should be performed for complete identification of pure cultures. For more information, consult appropriate references.

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>Streptococcus pyogenes</i> ATCC® 19615	A	24hr	35°C	Aerobic	Growth
<i>Streptococcus agalactiae</i> ATCC® 12386	A	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™ Todd Hewitt Broth powder should appear homogeneous, free-flowing, and light beige in color. The prepared media should appear clear, and medium amber in color.

## REFERENCES

1. Elliott, S.D. 1945. *J. Exp. Med.*; 81:573.
2. *Applied Microbiol.*; 2:117, 1954.
3. Isenberg, H.D. *Clinical Microbiology Procedures Handbook*, Vol. I, II & III. American Society for Microbiology, Washington, D.C.
4. Anderson, N.L., et al. *Cumitech 3B; Quality Systems in the Clinical Microbiology Laboratory*, Coordinating ed., A.S. Weissfeld. American Society for Microbiology, Washington, D.C.
5. *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-10279[A]



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[Ordering Information](#)

Distribution Centers:

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