

Instructions for Use

CRITERION™ APT AGAR

Cat. no. C5030	CRITERION™ APT Agar	122.4gm
Cat. no. C5031	CRITERION™ APT Agar	500gm
Cat. no. C5032	CRITERION™ APT Agar	2kg
Cat. no. C5033	CRITERION™ APT Agar	10kg
Cat. no. C5034	CRITERION™ APT Agar	50kg

INTENDED USE

Hardy Diagnostics CRITERION™ APT Agar is recommended for use in cultivating heterofermentative lactobacilli, *Leuconostoc* species, *Lactococcus lactis* and other microorganisms requiring a high thiamine content in meat products, tinned foods, fruit juices and other foodstuffs. In addition, it is used for maintaining stock cultures of *Weissella viridescens* ATCC® 12706 for use in the assay of thiamine.

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

APT Agar was first formulated by Deibel, Evans and Niven when they were investigating thiamine requiring bacteria and Evans and Niven for their study of heterofermentative lactobacilli that cause a faded or greenish discoloration on cured meats.^(1,2) Bacteria that ferment lactic acid, *Streptococcus*, *Leuconostoc*, *Pediococcus* and *Lactobacillus*, are widespread in nature and commonly associated with food spoilage of dairy, meat and vegetable products.⁽³⁾ Therefore, this media is recommended for the microbiological examination of canned meat, poultry, sauerkraut and other types of foods. Since APT Agar is non-selective, contaminants such as coliforms and many other types of common bacteria will grow readily on this medium. For accurate results, APT Agar should be used according to the procedures listed in the *Compendium of Methods for the Microbiological Examination of Foods* by the American Public Health Association (APHA).⁽³⁾

Hardy Diagnostics CRITERION™ APT Agar contains metallic salts that provide ions used in lactobacilli replication. Peptones supply essential amino acids, minerals and nitrogenous compounds. Dextrose provides an energy source. Yeast extract enhances bacterial growth and supplies B-complex vitamins. Sodium chloride is added to maintain osmotic equilibrium. Tween® 80, also known as Polysorbate 80, is a source of fatty acids required by lactobacilli.

FORMULA*

Gram weight per liter:	61.2gm/L
Casein Peptone	12.5gm

Dextrose	10.0gm
Yeast Extract	7.5gm
Sodium Chloride	5.0gm
Sodium Citrate	5.0gm
Dipotassium Phosphate	5.0gm
Magnesium Sulfate	0.8gm
Tween [®] 80	0.2gm
Manganese Chloride	0.14gm
Ferrous Sulfate	0.04gm
Thiamine Hydrochloride	0.001gm
Agar	15.0gm

Final pH 6.7 +/- 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 date 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 incubation times as stated below.

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." Refer to the document "[Guidelines for Isolation Precautions](#)" from the Centers for Disease Control and Prevention.

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 M29: *Protection of Laboratory Workers from Occupationally Acquired Infections*.

Sterilize all biohazard waste before disposal.

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

METHOD OF PREPARATION FOR DEHYDRATED CULTURE MEDIA

1. Suspend 61.2gm of dehydrated culture media in one liter of distilled or deionized water. Stir to mix thoroughly.
2. Heat to boiling for 1 minute to dissolve completely. DO NOT OVERHEAT.
3. Sterilize in the autoclave at 121°C. for 15 minutes.
4. Cool to 45-50°C. and dispense as desired into sterile containers.

PROCEDURE AND INTERPRETATION OF RESULTS

For information on procedures and interpretation of results, consult listed references.

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. Always take pH reading at room temperature.

Because APT media is non-selective and permits the growth of contaminants, it is recommended that biochemical and/or serological tests be performed on colonies from pure culture for complete identification and to confirm the presence of lactobacilli.

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

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as loops, swabs, other culture media, incinerators, and incubators, etc., as well as serological and biochemical reagents, 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 Certificate of Analysis (CofA) and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media*. The following microorganisms are routinely used for testing at Hardy Diagnostics:

Test Organisms	Inoculation Method*	Incubation			Results
		Time	Temperature	Atmosphere	
<i>Lactobacillus fermentum</i> ATCC® 9338	A	24-48hr	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 certificate of analysis (CofA) available

from Hardy Diagnostics [Certificate of Analysis](#) website. In addition, refer to the following document "[Finished Product Quality Control Procedures](#)," for more information on QC or see the reference(s) for more specific information.

PHYSICAL APPEARANCE

Hardy Diagnostics CRITERION™ APT Agar powder should appear homogeneous, free-flowing, and light beige in color. The prepared media should appear slightly opalescent and medium amber in color.

REFERENCES

1. Evans, J.B., and C.F. Niven, Jr. 1951. Nutrition of the heterofermentative lactobacilli that cause greening of cured meat products. *J. Bacteriol.*; 62:599-603.
2. Deibel, R.H., J.B. Evans, and C.F. Niven, Jr. 1957. Microbiological assay for thiamine using *Lactobacillus viridescens*. *J. Bacteriol.*; 74:818-821.
3. APHA Technical Committee on Microbiological Methods for Foods. *Compendium of Methods for the Microbiological Examination of Foods*, APHA, Washington, D.C.
4. Association of Official Analytical Chemists. *Official Methods of Analysissm*, AOAC, Washington, D.C.
5. The Official Compendia of Standards. *USP-NF*. United States Pharmacopeial Convention, Rockville, MD.
6. American Public Health Association. *Standard Methods for the Examination of Dairy Products*, APHA, Washington, D.C.
7. U.S. Food and Drug Administration. *Bacteriological Analytical Manual*. AOAC, Arlington, VA.
<http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006949.htm>.

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

Tween is a registered trademark of ICI Americas, Inc.

IFU-10106[A]



1430 West McCoy Lane, Santa Maria, CA 93455, USA

Phone: (805) 346-2766 ext. 5658

Fax: (805) 346-2760

Website: HardyDiagnostics.com

Email: TechnicalServices@HardyDiagnostics.com

[Ordering Information](#)

Distribution Centers:

California · Washington · Utah · Arizona · Texas · Ohio · New York · Florida · North Carolina

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

Copyright© 2020 by Hardy Diagnostics. All rights reserved.

