

# Instructions for Use

## LACTOSE BROTH MEDIA

<a href="#">Cat. no. U145</a>	Lactose Broth, 500ml Polycarbonate Bottle, 225ml	10 bottles/box
<a href="#">Cat. no. U146</a>	Lactose Broth, 12oz. Wide Mouth Jar, 225ml	12 jars/box

## INTENDED USE

Hardy Diagnostics Lactose Broth media is used to detect coliforms in food, dairy products, and water. These formulations can also be used to pre-enrich samples for the recovery of *Salmonella* species.

This product is not intended to be used for the diagnosis of human disease.

## SUMMARY

Lactose Broth is frequently used as a pre-enrichment broth during testing of foods and dairy products for *Salmonella*. In processed foods, *Salmonella* species can be present in low concentrations and the cells may be found in a debilitated condition. Lactose Broth provides an environment favorable for the recovery of *Salmonella*. The media allows damaged cells to recover, dilutes toxic substances that may be present, and favors growth of *Salmonella* over other species.<sup>(2)</sup> Lactose Broth is included in many procedures for testing foods, dairy products, and other materials.<sup>(1-4)</sup>

A pre-enrichment medium provides a higher ratio of *Salmonella* to non-*Salmonella* bacteria after incubation. Most non-*Salmonella* bacteria ferment lactose, while *Salmonella* does not. When lactose-fermenting bacteria metabolize lactose in the medium, the pH decreases, creating a bacteriostatic effect on competing microorganisms.

Lactose Broth is also used to detect coliforms in food, dairy products, and water.<sup>(1-4)</sup> The concentration of ingredients in Lactose Broth, when used to detect coliforms in samples, must remain the same after addition of the sample being tested.

## FORMULA

Ingredients per liter of deionized water:\*

Pancreatic Digest of Gelatin	5.0gm
Lactose	5.0gm
Beef Extract	3.0gm

Final pH 6.9 +/- 0.2 at 25°C.

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

## STORAGE AND SHELF LIFE

Storage: Upon receipt store media at 2-8°C. (store Cat. no. U146 at 2-30°C.) away from direct light. Media should not be used if there are any signs of deterioration (discoloration), contamination, or if the expiration date has passed. Product is light and temperature sensitive; protect from light, excessive heat and freezing.

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.

## PROCEDURE

Allow media to warm to room temperature before inoculation.

1. Transfer a 25.0gm, or 25ml, sample of test material into a container. Add 225ml of sterile Lactose Broth. Mix as necessary to make a homogeneous suspension. Incubate at 35°C. for 24 hours.
2. Transfer 1ml of suspension to appropriate enrichment broths, such as Tetrathionate Broth (Cat. no. K65) and Selenite Cystine Broth (Cat. no. K69). Incubate at 35°C. for 24 hours.
3. Transfer a loopful of suspension to appropriate selective agar media, such as Hektoen Enteric Agar (Cat. no. G63), XLD Agar (Cat. no. G65) and Bismuth Sulfite Agar. Incubate at 35°C. for 24 hours.

## INTERPRETATION OF RESULTS

Pre-enrichment, selective enrichment and selective plating increase the likelihood of isolating *Salmonella* from foods and other materials.<sup>(1-5)</sup>

## LIMITATIONS

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

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, other culture media, swabs, applicator sticks, 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 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>Escherichia coli</i> ATCC® 25922	A	18-48hr	35°C	Aerobic	Growth; acid and gas production**
<i>Salmonella enterica</i> ATCC® 14028	A	18-48hr	35°C	Aerobic	Growth; no acid or gas production**

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

\*\*When Durham tube present.

## USER QUALITY CONTROL

End users of commercially prepared 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. Also refer to the document "[Finished Product Quality Control Procedures](#)," and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media* for more information on the appropriate QC procedures. See the references below.

## PHYSICAL APPEARANCE

Lactose Broth media should appear clear, and light to medium amber in color.

## REFERENCES

1. American Public Health Association. *Standard Methods for the Examination of Dairy Products*, APHA, Washington, D.C.
2. APHA Technical Committee on Microbiological Methods for Foods. *Compendium of Methods for the Microbiological Examination of Foods*, APHA, Washington, D.C.
3. U.S. Food and Drug Administration. *Bacteriological Analytical Manual*. AOAC, Arlington, VA.  
<http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006949.htm>.
4. American Public Health Association. *Standard Methods for the Examination of Water and Wastewater*, APHA, Washington, D.C.
5. The Official Compendia of Standards. *USP-NF*. United States Pharmacopeial Convention, Rockville, MD.

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

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[Ordering Information](#)

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