

# LYFOCULTS® MICROORGANISMS

For quality control procedures.

## SUMMARY AND EXPLANATION

Lyophilization of microorganisms for maintenance and preservation has improved in recent years. Initially, some methods utilized suspensions in fluids such as saline, serum or blood placed in a vacuum with dehydrating agents. Adding gelatin and ascorbic acid was found to be beneficial in the maintenance of the organism during drying.<sup>1</sup> Glucose was found to have a marked preservative effect independent of the drying process employed.<sup>2</sup> The organism pellicle employs a 0.1 ml tryptic soy broth suspension of the appropriate organism with the addition of gelatin, skim milk, ascorbic acid and dextrose to the suspending medium.<sup>3</sup> LyfoCults® is a modification of this formulation to produce an easy-to-use, cost effective, and stable microorganism preparation.

LyfoCults is a ready-to-use vial containing stabilized, lyophilized, viable microorganisms in an easy-to-use format. These reference organisms are intended for use in laboratory quality control procedures.

## PRINCIPLE

Microbial cultures preserved by lyophilization retain their viability. Ingredients used in preparing the suspensions preserve and protect the microorganisms for use when needed. Following the recommended rehydration procedure, they are immediately ready to use.

## CONTENT

Refer to [www.biomerieux.com](http://www.biomerieux.com) for a complete list of LyfoCults products.

## REAGENTS\*

For *in vitro* diagnostic use.

### LyfoCults

**Active Ingredient:** Microorganism

#### Cryoprotectant:

Albumin	Ascorbic Acid	Dextrose
Glycerol	Mannitol	Gelatin
Skim Milk	Tryptic Soy Broth	Trehalose

Rehydration ampoule: 0.6 ml, 0.45% saline

\*Adjusted as required to meet performance standards.

**CAUTION:** LyfoCults contains viable microorganisms and is potentially infectious. All containers and subsequent cultures should be handled according to appropriate CDC/NIH Biosafety Level guidelines and disposed of according to applicable health, safety and environmental regulations.<sup>4</sup>

## Additional materials required

Standard microbiological supplies and equipment such as those commonly found in a microbiology laboratory are not provided. Rehydration fluid for LyfoCults is not provided.

## Storage instructions

LyfoCults should be stored in its original unopened container at 2-8°C until used or until expiration. When stored properly, organisms will retain viability until the expiration date. **Do not freeze or reuse LyfoCults after initial rehydration. bioMérieux does not warranty the product if reuse occurs or if used after the expiration date.**

## Chemical or physical indications of instability

Each LyfoCults should contain a beige pellicle at the bottom of the container. This product should not be used if there are any signs of deterioration such as premature rehydration, color change, or damage to the container or outer package.

**PROCEDURE****LyfoCults Rehydration Procedure:**

1. Allow the LyfoCults vial to come to room temperature in the pouch. Tear open foil pouch at notch and remove LyfoCults vial.
2. Remove the protective wrap using the red tear strip. Remove label and place on culture medium.
3. Carefully unscrew the cap of a LyfoCults vial and aseptically add approximately 0.25 ml of sterile tryptic soy broth, saline, or purified water.
4. Recap the vial and mix gently. **Do not invert.** The resulting suspension should be homogeneous and must be used within 30 minutes of rehydration.
5. Spread the suspension over culture medium and incubate appropriately.
6. Discard used LyfoCults in an appropriate biohazard receptacle.

**QUALITY CONTROL**

Each lot number has been tested and approved using standard microbiological techniques and procedures. If the rehydrated culture fails to yield the expected results that are typical for the specific reference microorganism strain, the product should not be used for any quality control tests or procedures.

**TABLE 1 - SUGGESTED CULTURE MEDIA AND INCUBATION CONDITIONS**

Organism	Medium	Inoculation	Incubations
Nonfastidious Aerobes and Facultative Organisms	TSA with 5% Sheep Blood	100 ul	Aerobic 24-48 hours @ 35-37°C
CO <sub>2</sub> Dependent Organisms	Chocolate Agar	100 ul	5-10% CO <sub>2</sub> 24-72 hours @ 35-37°C
Anaerobic Organisms	Columbia Agar	100 ul	Anaerobic 48-72 hours @ 35-37°C
<i>Campylobacter</i> spp.	Brucella Agar with 5% Sheep Blood	100 ul	Micro-aerobic 72 hours @ 35-37°C
Fungi: Yeasts and Molds	Sabouraud Dextrose Agar	100 ul	Aerobic 2-5 days @ 25-30°C
<i>Legionella</i> spp.	Buffered CYE Agar	100 ul	Aerobic 2-5 days @ 35-37°C
<i>Bordetella</i> spp.	TSA with 5% Sheep Blood	100 ul	Aerobic 2-4 days @ 35-37°C

**LIMITATIONS OF THE TEST**

LyfoCults contains a high-tiered, unspecified amount of microorganisms. The rehydration suspension is not intended for use in quantitative analysis.

**REFERENCES**

- Stamp, Lord. The preservation of bacteria by drying. *J Gen Microbiol*, 1947, 1:251-265.
- Annear, Austral. Observations on drying bacteria from the frozen and from the liquid state. *J Exp Biol*, 1958, 36:211-222.
- Obara YS, Yamai T, Nikkawa Y, Shimoda, Miyamoto Y. Preservation and transportation of bacteria by a simple gelatin disk method. *J Clin Microbiol*, 1981, 14:61-66.
- Richmond JY, McKinney RW. CDC/NIH Manual, Biosafety in Microbiological and Biomedical Laboratories 4th Edition, US Department of Health and Human Services, Washington, D.C., 1999.

**AVAILABILITY**

For technical assistance in the USA, contact bioMérieux Customer Service at 1-800-682-2666. Outside the USA, contact your local bioMérieux Representative.

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**INDEX OF SYMBOLS**

Symbol	Meaning
	Catalog number
	For <i>in vitro</i> diagnostic use
	Manufacturer
	Temperature limitation
	Use by
	Batch code
	Consult Instructions for Use
	Contains sufficient for <n> tests
	Biological Risks

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bioMérieux, Inc.  
Box 15969  
Durham, North Carolina 27704-0969