

LITTMAN AGAR (7173)

Intended Use

Littman Agar is used for the isolation and cultivation of fungi.

Product Summary and Explanation

In 1947, Littman Agar was described as suitable for growth of pathogenic fungi at a neutral pH.¹ Littman Agar is a selective medium for the primary isolation of fungi. Littman demonstrated this medium as valuable for culturing dermatophytes. Molds and yeasts form nonspreading, discrete colonies easily isolated in pure culture. Littman suggested using this medium for estimating normal fungal flora of sputum, feces, and other human specimens. Littman Agar can be used for single cell isolation of fungi and plate counts of viable saprophytic fungi in foodstuffs and air.

Littman compared Littman Agar with Sabouraud Dextrose Agar using a large variety of pathogenic and saprophytic fungi.² Three times as many fungi from feces, sputum, skin scrapings, and hair grew on Littman Agar as compared with Sabouraud Dextrose Agar. Four times as many pathogenic dermatophytes grew on Littman Agar as compared with Sabouraud Dextrose Agar.

Principles of the Procedure

Enzymatic Digest of Gelatin provides nitrogen, amino acids, vitamins, and carbon required for organism growth in Littman Agar. Dextrose is included as an energy source. Oxgall restricts the spreading of fungus colonies. Crystal Violet and Streptomycin are selective bacteriostatic agents. Agar is the solidifying agent.

Formula / Liter

Enzymatic Digest of Gelatin	10 g
Oxgall.....	15 g
Dextrose.....	10 g
Crystal Violet.....	0.01 g
Agar	16 g

Final pH: 7.0 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

Supplement

Streptomycin, 30 mcg

Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 51 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes. Cool to 45 – 50°C and add 30 mcg of Streptomycin per mL of medium.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and light grey-beige.

Prepared Appearance: Prepared medium is trace to slightly hazy and bluish-purple to blue.

Expected Cultural Response: Cultural response on Littman Agar with the addition of Streptomycin incubated aerobically at 25 - 30°C and examined for growth after 2 – 7 days.

Microorganism	Approx. Inoculum (CFU)	Expected Results
<i>Aspergillus niger</i> ATCC® 16404	Point Inoculation	Fair to excellent
<i>Candida albicans</i> ATCC® 10231	10 - 300	Fair to excellent
<i>Escherichia coli</i> ATCC® 25922	1000	Inhibited
<i>Trichophyton mentagrophytes</i> ATCC® 9533	Point Inoculation	Fair to excellent

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Consult appropriate references for recommended test procedures.

Results

Refer to appropriate references and procedures for results.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Antimicrobial agents incorporated into a medium to inhibit bacteria may also inhibit certain pathogenic fungi. Do not use Littman Agar for the isolation of microorganisms susceptible to streptomycin.
3. Although culture techniques are primary in the identification of etiological agents of mycotic infections, they are not absolute. Often identification must be accomplished by using one or more of the following techniques: direct microscopic examination of the specimen, biochemical determination, or serological procedures.

Packaging

Littman Agar	Code No.	7173A	500 g
		7173B	2 kg
		7173C	10 kg

References

1. Littman, M. L. 1947. Culture medium for primary isolation of fungi. Science. **106**:109-111.
2. Littman, M. L. 1948. Growth of pathogenic fungi on a culture medium. Am. J. Clin. Pathol. **18**:409-420.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.