APT AGAR (7302)

Intended Use
APT Agar is used for the cultivation of heterofermentative lactobacilli.

Product Summary and Explanation
Evans and Niven investigated the cultivation of heterofermentative lactobacilli, causing the faded or green discoloration of cured meat products.[1] Deibel, Evans, and Niven tested thiamine-requiring bacteria, specifically *Lactobacillus viridescens*.[2] Their formulations led to the development of APT Agar.

Lactic acid bacteria, a group of acid-producing bacteria, include the genera *Streptococcus, Leuconostoc, Pediococcus*, and *Lactobacillus*.[3] These organisms are widespread in nature, associated with bacterial spoilage of foods including dairy products, meat, and vegetables.[3] APT Agar is used for cultivating heterofermentative lactic acid bacteria from food products.[3]

Principles of the Procedure
Enzymatic Digest of Casein and Yeast Extract are the carbon, nitrogen, and vitamin sources used for general growth requirements in APT Agar. Sodium Chloride maintains the osmotic balance of the medium. Potassium Phosphate is the buffering agent. Dextrose is the fermentable carbohydrate. Manganese Chloride, Magnesium Sulfate, and Ferrous Sulfate provide ions used in replication by lactobacilli. Polysorbate 80 is a surfactant and a source of fatty acids required by lactobacilli. Sodium Carbonate is a neutralizing agent. Agar is the solidifying agent.

Formula / Liter
Enzymatic Digest of Casein	10 g
Yeast Extract	7.5 g
Sodium Chloride	5 g
Potassium Phosphate	5 g
Sodium Citrate	5 g
Dextrose	10 g
Polysorbate 80	0.2 g
Magnesium Sulfate	0.8 g
Manganese Chloride	0.14 g
Ferrous Sulfate	0.04 g
Sodium Carbonate	1.25 g
Agar	13.5 g

Final pH: 6.7 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution
1. For Laboratory Use.

Directions
1. Suspend 58 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 118 - 121°C for 15 minutes.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is trace to slightly hazy, amber, with trace to slight precipitate.

Expected Cultural Response: Cultural response on APT Agar at 35 ± 2°C after 18 - 72 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Response
Lactobacillus fermentum ATCC® 9338	10 - 300	Good growth
Leuconostoc mesenteroides ATCC® 12291	10 - 300	Good growth

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

Test Procedure
Refer to appropriate references for specific procedures using APT Agar.

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 it's intact container when stored as directed.

Limitation of the Procedure
Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

APT Agar	**Code No.**	**7302A**	**500 g**
		7302B	**2 kg**
		7302C	**10 kg**

References

1. **Evans, J. B., and C. F. Niven, Jr.** 1951. Nutrition of the heterofermentative lactobacilli that cause greening of cured meat products. J. Bact. **62**:599-603.
2. **Deibel, R. H., J. B. Evans, and C. F. Niven, Jr.** 1957. Microbiological assay for thiamine using *Lactobacillus viridescens*. J. Bact. **74**:818-821.
3. **Vedamuthu, E. R., M. Raccach, B. A. Glatz, E. W. Seitz, and M. S. Reddy.** 1992. Acid-producing microorganisms, p. 225-238. *In* C. Vanderzant, and D. F. Splittstoesser (eds.). Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.

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.

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