# APT Agar (NCM0159)

## Intended Use
APT Agar is used for the cultivation of heterofermentative lactobacilli in a laboratory setting. APT Agar is not intended for use in the diagnosis of disease or other conditions in humans.

## Description
Evans and Niven investigated the cultivation of heterofermentative lactobacilli, causing the faded or green discoloration of cured meat products. Deibel, Evans, and Niven tested thiamine-requiring bacteria, specifically *Lactobacillus viridescens*. 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*. These organisms are widespread in nature, associated with bacterial spoilage of foods including dairy products, meat, and vegetables. APT Agar is used for cultivating heterofermentative lactic acid bacteria from food products.

## Typical Formulation

| | |
|---|---|
| Enzymatic Digest of Casein | 10.0 g/L |
| Yeast Extract | 7.5 g/L |
| Sodium Chloride | 5.0 g/L |
| Potassium Phosphate | 5.0 g/L |
| Sodium Citrate | 5.0 g/L |
| Dextrose | 10.0 g/L |
| Polysorbate 80 | 0.2 g/L |
| Magnesium Sulfate | 0.8 g/L |
| Manganese Chloride | 0.14 g/L |
| Ferrous Sulfate | 0.04 g/L |
| Sodium Carbonate | 1.25 g/L |
| Agar | 13.5 g/L |

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

## Precaution
Refer to SDS

## Preparation
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.
4. Cool to 45-50°C.

## 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.

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**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 pseudomesenteroides* 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.

**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.

**Storage**
Store dehydrated culture media at 2-30°C away from direct sunlight. 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.

**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, 4th ed. American Public Health Association, Washington, D.C.


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