

APT Agar (i23008)

APT Agar is used for cultivating heterofermentative lactobacilli and other organisms requiring high thiamine content.

Industry: Food

Principles & Uses

APT (All Purpose Tween 80) Agar, developed following the formulation by Evans and Niven, serves as an excellent medium for cultivating and maintaining *Lactobacilli*. *Lactobacilli*, prominent in the lactic acid bacteria group, play a vital role in food spoilage, particularly in meat and dairy products, by converting sugars into lactic acid. APT Agar is versatile, suitable for heterofermentative lactic acid bacteria.

The medium's components contribute to its efficacy. Peptone from Casein serves as a rich source of carbon, nitrogen, vitamins, and minerals. Yeast extract provides essential B-complex nutrients vital for bacterial growth, while glucose acts as the carbohydrate source. Manganese chloride, magnesium sulfate, and Iron (III) sulfate supply ions crucial for *lactobacilli* replication. Notably, Tween 80 serves as a source of fatty acids necessary for *lactobacilli* metabolism.

This medium is non-selective, fostering the growth of accompanying bacteria. Its design, following the recommendations of Evans, Niven, and Deibel, makes it particularly effective for counting and cultivating heterofermentative lactic acid bacteria, including *Lactobacillus*, *Leuconostoc* species, and *Lactococcus lactis*, especially in food products like meat, tinned foods, and fruit juices that require a high thiamine concentration. APT Agar not only supports robust bacterial growth but also finds utility in the microbiological assay of thiamine.

Composition (gr/L)

Peptone from Casein 12.5, Yeast Extract 7.5, D (+) glucose 10, Sodium Chloride 5, Tri-sodium Citrate 5,

Dipotassium Hydrogen Phosphate 5, Tween 80 0.2, Magnesium Sulfate 0.8, Manganese Chloride 0.14, Iron (II) Sulfate 0.04, Thiamine Dichloride 0.001, Agar 13.5.

Final pH at 25°C 6.7 ± 0.2

Preparation from dehydrated Powder

Suspend 59.7 g in 1 liter of distilled water. Sterilize by autoclaving at 121°C for 15 minutes. **Do not overheat.**

Quality Control

Dehydrated Appearance: Light beige, free-flowing, homogeneous.

Prepared Appearance: Medium amber, clear to slightly opalescent, may have a slight precipitate.

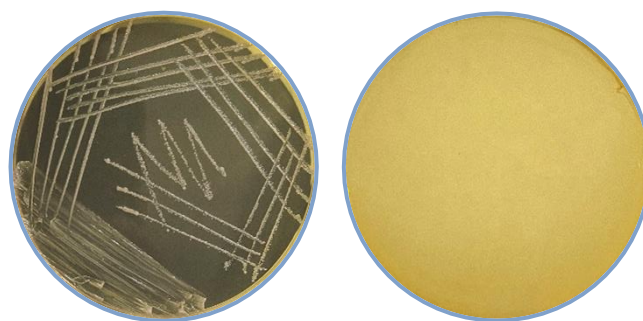
Reaction of 5.97% Solution at 25°C: pH 6.7 ± 0.2

Cultural Response

Inoculate and incubate at 35 ± 2°C for 24 - 48 hours.

Organism (ATCC*)	Recovery
<i>Lactobacillus fermentum</i> (9338)	Good
<i>Lactobacillus acidophilus</i> (4356)	Good
<i>Weissella viridescens</i> (12706)	Good

*ATCC is a registered trade mark of the American Type Culture Collection.



Lactobacillus acidophilus (left). The background has been darkened for better visibility of colonies. Prepared Culture Media (right).

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.