

Thermoacidurans Agar (i23132)

For isolating and cultivating *Bacillus coagulans* (*Bacillus thermoacidurans*) from foods.

Industry: Dairy products / Food

Principles & Uses

Bacillus coagulans, commonly found in soil and isolated from canned tomato and dairy products, is responsible for "flat sour" spoilage in canned foods due to a drop in pH. This bacterium is also known as *B. thermoacidurans* and is particularly troublesome for low-acid foods in sealed containers. To cultivate and isolate *B. coagulans*, Stern et al. developed Thermoacidurans Agar, a medium recommended by APHA. It includes peptone for essential carbon and nitrogen, yeast extract providing B-complex vitamins for bacterial growth, and glucose as the carbohydrate source. Dipotassium phosphate buffers the medium. *B. coagulans*, a facultative thermophile that thrives at 20 to 55°C and pH levels from 5.0 to 7.0, can be differentiated from *B. stercorophilus*, which cannot tolerate pH 5.0. The heat-shocked samples from canned foods are plated on Dextrose Tryptone Agar or Thermoacidurans Agar, where *B. coagulans* forms large, cream to white colonies. These conditions and media aid in its identification and differentiation.

Composition (gr/L)

Proteose Peptone 5, Yeast Extract 5, Glucose 5, Dipotassium Phosphate 4, Agar 20.

Final pH at 25°C 5.0 ± 0.2

Preparation from dehydrated Powder

Suspend 39 g of powder in 1 Liter of distilled water. Adjust final pH to 5. Autoclave at 121°C for 15 min. Avoid overheating which could cause a softer medium.

Quality Control

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

Prepared Appearance: Light amber, opalescent.

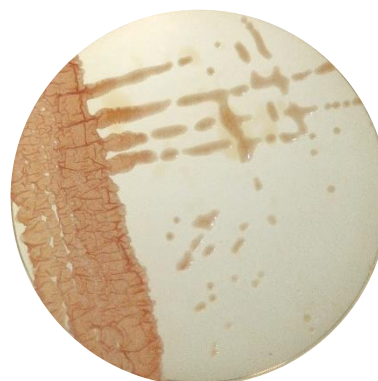
Reaction of 3.92% Solution at 25°C: pH 5.0 ± 0.2

Cultural Response

Inoculate and incubate at 55 ± 1°C for 18-48 hours.

Organism (ATCC*)	Recovery	Sporulation
<i>Bacillus thermoacidurans</i> (8038)	Good	+

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



Bacillus thermoacidurans

Storage

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