Dextrose Tryptone Agar
SKU: 700003336, 700003337, 700003338, 700003339
NCM0127

Intended Use
Dextrose Tryptone Agar is used for isolation of mesophilic or thermophilic spoilage microorganisms from food and is not intended for use in the diagnosis of disease or other conditions in humans.

Description
Dextrose Tryptone Agar evolved from research by Williams, while studying the cultivation and enumeration of thermophilic bacteria caused by "flat-sour" spoilage of canned foods. In the 1930's, the National Canners Association specified the use of Dextrose Tryptone Agar for isolating "flat sour" organisms from food products. "Flat sour" spoilage of canned foods is caused by *Bacillus coagulans* (*Bacillus thermoacidurans*). Bacterial growth results in a 0.3 – 0.5 drop in pH, while ends of the can remain flat. *B. coagulans* is a soil microorganism, found in canned tomato products and dairy products. Conditions favorable for organism growth can result in spoilage of food products. Dextrose Tryptone Agar can be used to isolate other food spoilage bacteria including mesophilic, aerobic spore-formers and thermophilic "flat sour" spore-formers such as *B. stearothermophilus*.

Typical Formulation

Enzymatic Digest of Casein	10.0 g/L
Dextrose	5.0 g/L
Bromocresol Purple	0.04 g/L
Agar	15.0 g/L

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

Precaution
Refer to SDS

Preparation
1. Suspend 30 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.

Test Procedure
Refer to appropriate references for specific procedures.

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

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

Expected Cultural Response: The Dextrose Tryptone Agar was prepared according to label directions and inoculated with the organisms listed below. *B. coagulans* and *B. stearothermophilus* were incubated aerobically at 55 ± 2°C and the other cultures were incubated aerobically at 35 ± 2° C. The cultures were examined for growth at 18-24 hours.

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Microorganism	Approx. Inoculum (CFU)	Expected Results	
		Recovery	Reaction
Bacillus coagulans ATCC® 7050	50-200	>70%	Yellow colonies
Bacillus stearothermophilus ATCC® 12980	50-200	>70%	Yellow colonies
Bacillus cereus ATCC® 11778	$>10^4$	Growth	--
Enterococcus faecalis ATCC® 29212	$>10^4$	Growth	--
Escherichia coli ATCC® 25922	$>10^4$	Growth	--
Staphylococcus aureus ATCC® 25923	$>10^4$	Growth	--

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

Results

Acid-producing organisms, such as “flat-sour” thermophiles, form yellow colonies.

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.

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. Williams, O. B. 1936. Food Res. 1:217-221.
2. National Canners Association. 1933. Bacterial standards for sugar.
3. Vanderzant,C. and D. F. Splittstoesser (eds.). 2015. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

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