Also known as

All Purpose Polysorbate Agar

Specification

Solid medium for general purpose use, especially designed for the cultivation of the heterofermentative lactic acid bacteria that cause greening of meat.

Formula * in g/L

Casein peptone	12.500	Manganous chloride	0.140
Yeast extract	7.500	Iron sulfate	0.040
Sodium chloride	5.000	Thiamine ClH	0.001
Potassium phosphate	5.000	Polisorbate 80	0.200
Sodium citrate	5.000	Agar	15.000
Dextrose	10.000		
Magnesium sulfate	0.800	Final pH 6,7 ±0,2 at 25 ºC	

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Suspend 61,2 g of powder in 1 L of distilled water and allow it to soak. Bring to the boil stirring constantly. Distribute in suitable containers and sterilize in the autoclave at 121°C for 15 minutes.

Description

This general purpose medium (APT= All Purpose with Polysorbate 80), originally formulated by Evans and Niven, have been used successfully for the isolation and cultivation of lactic acid bacteria that, alter the quality and composition of food (especially meat), and require high levels of thiamine for growth. For this reason, the medium has been complemented with an increased amount of thiamine.

Both versions, solid and liquid, have demonstrated their efficacy in detecting lactobacilli that produce meat greening. Moreover, if the medium is supplemented with 5% fruit juice, as APHA states, it is converted into a growth media for many food bio modifiers.

Without the inclusion of an inhibitory agent in the formulation, the medium has no selective ability, and can support the growth of almost all types of microbes.

Technique

Detection Technique for bacteria causing greening in meat:

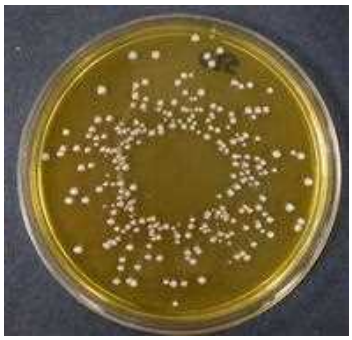
Products samples to be examined are crushed carefully in Tryptone Water (Art. No. 03-156). Using the same diluent, a dilution bank (dilution series) is prepared. From each dilution, APT Agar plates are inoculated using the pour plate technique (in triplicate), and, once set, they are incubated at 32°C for 48 hours. After incubation, colonies are counted using standard techniques, and different types are selected. Each type is inoculated in APT Broth, and is incubated at 32°C for 24 hours or longer if necessary. From these pure cultures, streak onto Frankfurt sausage slices, and incubate to verify greening capacity. Also include one without inoculation as a Control. Final identification is done by morphological and biochemical characteristics.

Quality control

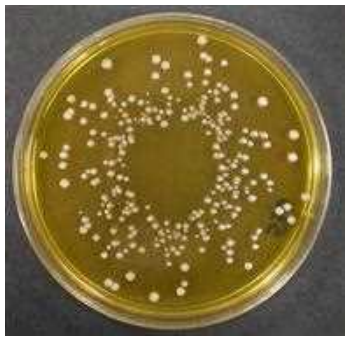
Incubation temperature: 30 ±1ºC **Incubation time:** 72 ± 3h

Inoculum: Practical range 100 ± 20 CFU. Min. 50 CFU (Productivity).

Microorganism	Growth	Remarks
Lactococcus lactis ATCC® 19435	Good to very good	-
Lactobacillus fermentum ATCC® 9338	Good to very good	-
Lactobacillus sakei ATCC® 15521	Good to very good	-
Lactobacillus acidophilus ATCC® 4356	Good to very good	-



Lactobacillus lactis ATCC 19435



Lactobacillus fermentum ATCC 9338

References

· EVANS, J.B. & C.F. NIVEN (1951) Nutrition of the heterofermentative lactobacilli that cause greening of cured meat products J.Bact. 62:599.

· DEIBEL, R.H, J.B. EVANS & C.F. NIVEN (1957) Microbiological assay for the thiamine using Lactobacillus viridescens. J. Bact. 74:818-821.

· DOWNES, F.P., K. ITO (2002) Compendium of methods for the microbiological examination of food. 4th ed. APHA. Washington.

. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).