



Tomato Juice Medium Base

M829

Tomato juice medium is recommended for isolation and identification of Lactobacilli encountered in wine.

Composition**

Ingredients	Gms / Litre
Peptone, special	5.000
Yeast extract	5.000
Dextrose	10.000
Monopotassium phosphate	0.500
Potassium chloride	0.125
Calcium chloride	0.125
Sodium chloride	0.125
Magnesium sulphate	0.125
Manganese sulphate	0.003
Bromo cresol green	0.030
Tomato juice solids, from	150.000
Agar	15.000
Final pH (at 25°C)	5.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 20 grams in 500 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Aseptically add the rehydrated contents of one vial of Lactobacilli Supplement, FD098 or Sorbic acid (1.2g/l). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Wine may also be made from fruit and fruit juices (1). Mickle and Breed (2) first described the use of tomato juice in the culture media for Lactobacilli. Tomato Juice Medium Base is the modification of the medium devised by Yoshizumi (3), used for isolation of the slow growing Lactobacilli from wines. These Lactobacilli take part in the malolactic fermentation and spoilage. Ability of tomato juice to enhance the recovery of Lactobacilli was observed by Kulp (4).

Tomato juice acts as a source of carbon, nutrients and proteins. Peptone special and yeast extract provide nitrogenous compounds and amino acids which stimulate the growth of spoilage strains (3). Low pH of the medium encourages growth of Lactobacilli while inhibiting the growth of accompanying bacteria. Bromocresol green acts as an inhibitory dye. Cycloheximide and sorbic acid act as fungistats, inhibiting the growth of yeasts (5, 6). Monopotassium phosphate buffers the medium. Magnesium sulphate, manganese sulphate and potassium chloride provide inorganic ions. Sodium chloride maintains osmotic balance in the medium.

Quality Control

Appearance

Cream to light green homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Bluish green coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 4.0% w/v aqueous solution at 25°C. pH : 5.0±0.2

pH

4.80-5.20

Cultural Response

M829: Cultural characteristics observed with added one vial of Lactobacilli Supplement (FD098)/Sorbic acid after an incubation at 35-37°C after 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
<i>Lactobacillus bulgaricus</i> ATCC 11842	50-100	luxuriant	>=50%
<i>Lactobacillus casei</i> ATCC 7469	50-100	luxuriant	>=50%

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Alcamo I. E., 2001, Fundamentals of Microbiology, 6th Ed., Jones and Bartlett Publishers
2. Mickle and Breed, 1925, Technical Bulletin 110, NY State Agricultural Exp. Station.
3. Carr J. G., Cutting C. V. and Whiting G. C., (Eds.), 1975, Lactic Acid Bacteria and Food, Academic Press London, UK, pp. 87-102.
4. Kulp J. W. L., 1927, Science 66:512.
5. Chalfan Y., Goldberry I. and Moteles R. I., 1977, J. Food Sci., Vol. 42. p: 939.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification- Maintenance of Medical Bacteria, Vol. 1, Williams & Wilkins, Baltimore, Md.

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