

Technical Information

MRS MiVeg Agar, Modified (Lactobacilli Heteroferm Screen MiVeg Agar)

Product Code :VM2163

Application:- MRS MiVeg Agar, Modified is used for the isolation and cultivation of *Lactobacillus* species from salad dressings.

Composition

Ingredients	Gms / Litre
Dextrose	20.000
MiVeg peptone No. 3	10.000
Yeast extract	5.000
Sodium acetate	5.000
2-Phenylethyl alcohol	3.000
Ammonium citrate	2.000
Dipotassium phosphate	2.000
Magnesium sulphate	0.100
Manganese sulphate	0.050
Bromo cresol green	0.040
Cycloheximide	0.004
Agar	15.000
Final pH (at 25°C)	5.5±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MRS MiVeg Agar, Modified is prepared by using vegetable peptones in place of animal based peptones which makes the media BSE/TSE risk free. This medium is the modification of MRS medium of deMan et al (3) recommended for the isolation and cultivation of *Lactobacillus* species from salad dressings (1,2). Mayonnise, cooked starch-based dressings resembling mayonnise and pourable dressings are the types of salad dressings available. Microorganisms in salad dressings come from the ingredients from manufacturing equipments and from air. The microflora causing salad dressing to spoil seems quite restricted and consists of few species of *Lactobacillus*, *Saccharomyces* and *Zygosaccharomyces*.

This medium contains MiVeg peptone No. 3 and dextrose which supplies nitrogen, carbon and other elements essential for the growth of *Lactobacilli*. Polysorbate 80 a mixture of oleic esters, supplies fatty acids required by *Lactobacilli*. Bromocresol green serve as the pH indicator. Under acidic conditions, colour of the medium changes from green to yellow. Ammonium citrate, sodium acetate, 2-phenylethyl alcohol and cycloheximide inhibits gram-negative organisms, moulds and certain gram-positive bacteria. Due to presence of Cycloheximide in the medium growth of certain yeasts are suppressed.

Methodology

Suspend 62.19 grams of powder media in 1000 ml distilled water containing 1 ml polysorbate 80. Mix thoroughly. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. If necessary, adjust the pH with glacial acetic acid after sterilization. Mix well and pour into sterile Petri plates.

Warning : Cycloheximide is very toxic. Avoid skin contact or aerosol formation and inhalation.

Quality Control

Physical Appearance

Light yellow to bluish grey homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Green coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 6.22 % w/v aqueous solution pH: 5.5±0.2 at 25°C

pH range

5.30-5.70

Cultural Response/Characteristics

Cultural characteristics observed in presence of 5-10% Carbon dioxide (CO₂) at 35-37°C for upto 3 days.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
<i>Lactobacillus acidophilus</i> ATCC 4356	50-100	luxuriant	>=50%
<i>Lactobacillus fermentum</i> ATCC 9338	50-100	luxuriant	>=50%
<i>Lactobacillus plantarum</i> ATCC 8014	50-100	luxuriant	>=50%
<i>Lactobacillus casei</i> ATCC 9595	50-100	luxuriant	>=50%

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.
2. Smittle R. B. and Flowers R. M., 1982, J. Food Protection, 45:977.
3. DeMan J. D., Rogosa M. and Sharpe M. E., 1960, J. Appl. Bacteriol., 23:130

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