

Technical Information

Violet Red Bile Agar

Product Code: DM 1049S

Application: Violet Red Bile Agar is selective medium used for the selective isolation, detection and enumeration of coli-aerogenes bacteria in water, milk and other dairy food products.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	7.000
Yeast Extract	3.000
Lactose	10.000
Bile salts mixture	1.500
Sodium chloride	5.000
Neutral red	0.030
Crystal violet	0.002
Agar	15.000
Final pH (at 25°C)	7.4±0.1

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Violet Red Bile Agar is recommended by APHA & BIS for the detection and enumeration of coliform organisms in water, milk, dairy and other food products ^(1, 2). As an indicator of coli-aerogenes in milk. Druce et al ⁽⁴⁾ found this medium equally good as MacConkey Broth. Recently, the agar formulation is recommended by ISO committee for the enumeration of coliforms ⁽⁵⁾.

Bile salts and crystal violet make the medium selective. Crystal violet inhibits gram-positive microorganisms especially Staphylococci. Organisms which rapidly ferment lactose produce red colonies surrounded by red-purple halo ⁽⁶⁾. Lactose non-fermenters and late lactose fermenters produce pale colonies. Other related gram-negative bacteria can be suppressed by incubation at > 42°C or by anaerobic incubation. An agar overlay method is helpful to improve the specificity of the medium. Depending on the temperature characteristics of the organisms to be recovered incubation may be carried out at > 42°C for 18 hours, 32°C for 24-48 hours or 4°C for 10 days ⁽⁷⁾ respectively.

Methodology

Suspend 41.53 grams of powder media in 1000 ml distilled water. Shake well & heat with stirring to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45°C and pour into sterile Petri plates. Overheating is detrimental to the medium.

Quality Control

Physical Appearance

Light yellow to pink coloured homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Reddish purple clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 4.15% w/v aqueous solution at 25°C. pH : 7.4±0.1

pH Range:- 7.30-7.50

Cultural Response/Characteristics

DM 1049S: Cultural characteristics observed after an incubation at 35-37°C for 18 - 24 hours.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	>=50%	pink
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	>=50%	pinkish red with bile precipitate
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	luxuriant	>=50%	colourless
<i>Staphylococcus aureus</i> ATCC 25923	>=10 ³	inhibited	0%	-

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. Speck M. (Ed.), 1984, Compendium of Methods For The Microbiological Examination of Foods, 2nd ed. APHA, Washington, D.C.
2. Richardson G. (Ed.), 1985, Standard Methods for the Microbiological Examination of Dairy Products, 15th ed., APHA, Washington, D.C.
3. Bureau of Indian Standards, IS: 5401, 1969 (Second reprint - June 1990). , ,
4. Druce R.G. et al, 1957, J. Appl. Bact., 20: 1.
5. International Organization for Standardization (ISO), 1991, Draft ISO/DIS 4832.
6. Davis J.G., 1951, Milk Testing, Dairy Industries Limited, London; pg 131
7. Mossel D.A.A. and Vega C.L., 1973, Hlth. Lab. Sci., 11:303.

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