



Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Violet Red Bile Broth

Product Code: DM 1458

Application: Violet Red Bile Broth is used for the detection and enumeration of coliform organisms from water and food.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	7.000
Yeast extract	3.000
Bile salts mixture	1.500
Lactose	10.000
Sodium chloride	5.000
Neutral red	0.030
Crystal violet	0.002
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Violet Red Bile Broth, a modification of original original MacConkeys formulation ⁽¹⁾ is used for the enumeration of *coli-aerogens group* of bacterial. The growth of many unwanted organisms is suppressed, due to the selective inhibitory components crystals violet and bile salts while tentative identification of bacteria can be made by the indicator system compiling of lactose, and neutral red. Lactose non-fermenters and late lactose fermenters produce pale coloured colony on medium. Other related gram-negative bacteria can be suppressed by incubation at >42°C or by anaerobic incubation. Incubation may be carried out at >42°C for 18 hours, 32°C for 24-48 hours or 4°C for 10 days depending on the temperature characteristics of the organisms to be recovered ⁽²⁾. Violet red bile Broth is similar to VRBA (DM1049), except the later is recommended by APHA ^(3, 4).

Peptic digest of animal tissue and yeast extract serve as sources of carbon, nitrogen, vitamins and other essential growth nutrients. Lactose is the fermentable carbohydrate, utilization of which leads to the production of acids. Neutral red indicator detects the acidity so formed. Crystal violet and bile salts mixture help to inhibit the accompanying gram-positive and unrelated flora. Sodium chloride maintains the osmotic equilibrium. Further biochemical tests are necessary for positive identification and confirmation of the organism ⁽⁵⁾.

Methodology

Suspend 26.53 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 dispense into sterile tubes containing the inoculum.

Quality Control

Physical Appearance

Light yellow to pinkish beige homogeneous free flowing powder

Colour and Clarity of prepared medium

Reddish purple coloured clear solution in tubes.

Reaction

Reaction of 2.65% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH Range:-

7.20-7.60

Cultural Response/Characteristics

DM1458: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.





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Organism	Inoculum(CFU)	Growth	Colour of medium
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	pink to pinkish red
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	pink to pinkish red
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	luxuriant	colourless to
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	luxuriant	orangish yellow

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: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. MacConkey A., 1905, J. Hyg., 5, 333-379.
2. Mossel D. A. A. and Vega C. L., 1973, Hlth. Lab. Sci., 11:303
3. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
4. Marshall R. T., (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th Ed., APHA, Washington, D. C. 5. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, 6. Williams and Wilkins, Baltimore.

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- User must ensure suitability of the product(s) in their application prior to use.
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