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Violet red bile agar

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

REF: BS.1/VR01.100.0100	100 Gram	REF: BS.1/VR01.250.0250	250 Gram
REF: BS.1/ VR01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

The coliform group consists of several genera of bacteria belonging to the family Enterobacteriaceae . The historical definition of this group has been based on the method used for detection i.e. lactose fermentation. This group is defined as all aerobic and facultative anaerobic, gram-negative, non-spore-forming rod shaped bacteria that ferment lactose with gas and acid formation within 48 hour at 35°C (1, 2). Examination of foods, ingredients and raw materials, for the presence of marker groups such as coliforms is the one of the common tests. Violet Red Bile Agar, a modification of MacConkeys original formulation (3) is used for the enumeration of coli-aerogenes bacterial group. It relies on the use of the selective inhibitory components crystals violet and bile salts and the indicator system lactose, and neutral red. Thus, the growth of many unwanted organisms is suppressed, while tentative identification of sought bacteria can be made. Organisms, which rapidly attack lactose, produce purple colonies surrounded by purple halos. Nonfermenters or late lactose-fermenters produce pale colonies with greenish zones (4). VRBA is recommended by APHA (2,5). Selectivity of VRBA can be increased by incubation under anaerobic conditions and/ or at elevated temperature, i.e. equal to or above 42°C (6-8).

METHOD PRINCIPLE

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. Violet Red Bile Agar is not completely specific for enteric; other accompanying bacteria may give the same reaction. Further biochemical tests are necessary for positive identification (7).

MEDIA COMPOSITION

Item	Formula per liter of medium
- Peptic digest of animal tissue	7.000 gm.
- Yeast extract	3.000 gm.
- Sodium chloride	5.000 gm.
- Bile salts mixture	1.500 gm.
- Lactose	10.00 gm.
- Neutral red	0.030 gm.
- Crystal violet	0.002 gm.
- Agar	15.00 gm.

Final pH 7.4 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person.Do not ingest or inhale.

Good Laboratories practices using appropriate precautions shouldbe followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plentyof soap and water. In case of severe injuries; seek medical adviceimmediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous orspecial waste collection point.
S57: use appropriate container to avoid environmental contamination.
S61: avoid release in environment.

For further information, refer to the Violet Red Bile agar Material safety datasheet.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile plates
- Incubator
- Autoclave

STORAGE AND STABILITY

BioScien Violet Red Bile agar should be stored between 10-30°C in a firmlyclosed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature andsources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

PREPARATION

1. Suspend 41.53 grams in 1000 ml distilled water.
2. Adjust pH to 7.4 ± 0.2 at 25°C
3. Heat with stirring to boiling to dissolve the medium completely. DO NOT AUTOCLAVE.
4. Cool to 45°C and pour into sterile Petri plates containing the inoculum.
5. If desired, the medium can be sterilized by autoclaving at 15 lbs pressure at 15lbs pressure (121°C) for 15 minutes.

Deterioration

The color of ***BioScien*** Violet Red Bile agar is Light yellow to pink homogeneous free flowing powder. Prepared Medium is Reddish purple coloured clear to slightly opalescent gel forms in Petri plates. If there are anyphysical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

Clinical samples

Food

Water

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

PERFORMANCE CHARACTERISTICS

Oranism	Growth	Colony color
Enterobacter aerogenes ATCC 13048	luxuriant	pink to pinkish red
Escherichia coli ATCC 25922	luxuriant	pinkish red with bile precipitate
Salmonella Enteritidis ATCC 13076	luxuriant	Colourless to orangish yellow
Staphylococcus aureus ATCC 25923	Inhibited	-

REFERENCES

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5. Marshall R. T., (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th Ed., APHA, Washington, D. C.
6. International Organization for Standardization (ISO), 1991, Draft ISO/DIS 4382
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SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		