

TECHNICAL DATA SHEET

Article No. 9867

VRBL (Violet Red Bile Lactose) Agar

SYNONYMS

VRBA, Crystal-violet neutral red bile agar, VRB-agar (Crystal-violet neutral-red bile agar)

SPECIFICATION

Medium for the detection and enumeration of coliforms in milk and other dairy products, according to APHA and ICMSF, FIL-IDF and ISO Standards.

Colour: Violet-pink
pH: 7.4 ± 0.2 at 25 °C

COMPOSITION IN G/L

Yeast extract	3.000
Peptone	7.000
Bile salts No. 3	1.500
Lactose	10.000
Sodium chloride	5.000
Neutral red	0.030
Crystal violet	0.002
Agar	13.000

PACKAGING DETAILS

9867-10x100ML

10 prepared bottles

Volume: 100 ± 3 ml

Packaging unit: 1 box with 10 bottles 125 ml. Plastic screw inner cap.

9867-10x200ML

10 prepared bottles

Volume: 200 ± 5 ml

Packaging unit: 1 box with 10 bottles 250 ml. Plastic screw inner cap.



GUIDELINES

Description:

The Violet Red Bile Agar corresponds to the classic formulation of standardized media for the screening of coliforms in milk and other dairy products. This medium has been adopted for the enumeration of coliforms as well as for differentiating between lactose-fermenting and non-lactose fermenting organisms, due to its contents of crystal violet and bile salts, whose inhibiting or selective properties have been widely confirmed.

Technique:

To use, the contents of the bottle should be poured into plates. The melting of the culture medium should be carried out according to the manufacturer's instructions, either in a water bath (100 °C) or microwave oven. Never apply direct heat to melt a medium. The melting temperatures and times depend on the shape of the container, the volume of medium and the heat source. Before melting any medium loosen the screwcap of the container to avoid breaking the container. The medium should be melted only once and used. Media with agar should not be melted repeatedly as their characteristics change with each remelting. Overheating should be avoided as much as prolonged heating, especially with regard to media with an acidic or alkaline pH.

Once melted pour the plates using aseptic techniques. To inoculate, follow standard laboratory methods or the applicable norms. Spiral plate method, streak plating, econometric methods, dilution banks, spread plating etc... The recommended procedure is inoculation directly into petri dishes, with the molten agar cooled to 45-47 °C. Plates can be read after 24 hours of incubation at 30 °C. The size of the colonies ranges from 2 to 5 mm, depending on the amount per plate. If enterococci develop they will appear small in size and pink coloured. Lactose fermenting enterobacteria acquire a dark red colour with a clearing zone around them, while lactose nonfermenting ones form colourless colonies.

Note: The solid mediums can be melted in different ways: autoclave, bath and, if the customer considers appropriate, also the microwave. Whenever the microwave option is chosen, it is necessary to take certain safety measures to avoid breaking of the containers, such as loosening the screw cap and putting the bottle or tube in a water bath in the microwave. The fusion temperature and time will depend on the shape of the container, the volume of medium and the heat source. Avoid overheating as both the heating periods.

MICROBIOLOGICAL CONTROL

Melting - pour plates - inoculation Practical range 100 ± 20 CFU. min. 50 CFU (productivity) / 10⁴-10⁶ CFU (selectivity)

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020

Aerobiosis. Incubation at 30 ± 1 °C during 25 ± 1 h.

Microbiological control according to ISO 11133:2014/A1:2018.

Microorganism	Growth
<i>Enterococcus faecalis</i> ATCC® 19433, WDCM 00009	Inhibited
<i>Escherichia coli</i> ATCC® 8739, WDCM 00012	Good (≥50%)- Red purple colonies
<i>Escherichia coli</i> ATCC® 25922, WDCM 00013	Good (≥50%)- Red purple colonies
<i>Pseudomonas aeruginosa</i> ATCC® 27853, WDCM 00025	Good - Colourless colonies
<i>Salmonella typhimurium</i> ATCC® 14028, WDCM 00031	Good - Colourless colonies

Sterility control:

Incubation 48 hours at 30-35 °C and 48 hours at 20-25 °C: NO GROWTH.

Check at 7 days after incubation in same conditions.

BIBLIOGRAPHY

- DOWNES, F.P. & K. ITO (2001). Compendium of Methods for the Microbiological Examination of Food. 4th ed. APHA, Washington. DC.
- FIL-IDF. (1998) Standard 73B. Enumeration of coliform bacteria. ICMSF (1978). Microorganisms in Food, University of Toronto Press.
- ISO (1986) Standard 5541-1 Milk and Milk Products. enumeration of coliforms. Colony-count technique at 30°C.
- ISO (2006) Standard 4832: 2006 (E) - Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coliformes - Colony-count technique.
- ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- MARSHALL, R.T. (1992) Standard Methods for the Examination of Dairy Products. 16th ed. APHA, Washington. DC.
- PASCUAL ANDERSON, M^a R. (1992) Microbiología Alimentaria. Díaz de Santos, S.A., Madrid.

STORAGE

8-25 °C

SHELF LIFE

12 months unopened from date of manufacture

updated: 30.08.2022

