

CONTACT VRBL + NEUTRALIZERS

DETECTION AND ENUMERATION OF TOTAL AND FECAL COLIFORMS

1 INTENDED USE

Violet Red Bile Lactose agar is a selective media used for the detection and enumeration of coliforms and thermotolerant coliforms in food products. This medium is supplemented with neutralizers allowing its use to control critical points in industry (e.g.: protected areas, microbiological monitoring programs of surfaces and industrial environments).

2 PRINCIPLES

The media forms a convex meniscus that allows the direct application of the agar to the control areas, whether on walls, floors, utensils, or staff. The media contains several neutralizers that inhibit disinfectant residues that may be present on the surfaces to be monitored, in order to assess the contamination levels before and after disinfection of the food chain environment.

Neutralizers are selected to inactivate residues of disinfectants that may be present on surfaces, such as aldehydes and phenols, quaternary ammoniums, and oxidizing compounds.

Lactose fermentation results in acidification, revealed by the red colour of the pH indicator (neutral red), and by the precipitation of bile acids around the colonies.

The simultaneous presence of crystal violet and bile salts ensures the inhibition of Gram-positive bacteria.

3 TYPICAL COMPOSITION

The composition can be adjusted to obtain optimal performance.

For 1 liter of media:

- Peptic meat peptone	7.0 g
- Autolytic yeast extract	3.0 g
- Lactose	10.0 g
- Bile salts	1.5 g
- Sodium chloride	5.0 g
- Neutral red	30.0 mg
- Crystal violet	2.0 mg
- Bacteriological agar	12.0 g

pH of ready-to-use media at 25 °C: 7.4 ± 0.2 .

A mixture of neutralizing agents is added according to the specific characteristics of the medium.

4 INSTRUCTIONS FOR USE

- Use the culture media at room temperature and on a dry surface.
- Open the plate and apply the agar directly to the surface to be tested. Make sure to maintain uniform pressure over time (e.g. 500 g for 10 s according to NF EN ISO 18593). Then close the plate. Keep the agar at 1 to 8°C in a suitable transport container and incubate within 48 hours.
- Clean the sample surface to remove any traces of nutrients, moisture and chemical or physical elements resulting from the application of the agar.
- Incubate for 24 - 30 h at 37 or 44°C according to used standard.

✓ **Incubation:**

24 to 30h, 37 or 44°C

NOTE :

It is recommended that a control of the efficiency of the mixture of neutralizers present in the media be carried out in relation to the disinfectant product used, given the diversity of antiseptics existing on the market.

5 RESULTS

Coliforms present pink-red to purple colonies of 0.5 mm or more in diameter and sometimes are surrounded by a reddish zone due to bile precipitation.

Proceed with the counting of the colonies. The grid on the bottom of the plates makes counting easier.

Divide the number of characteristic colonies by the area of the sampled surface and deduce the number of colony-forming units (CFU) per square centimeter of surface.

6 QUALITY CONTROL

Typical culture response after 24 hours of incubation at 30°C (NF EN ISO 11133):

Microorganisms		Growth (Productivity Ratio: P_R)	Characteristics
<i>Escherichia coli</i>	WDCM 00012	$P_R \geq 50 \%$	Red purple colonies
<i>Escherichia coli</i>	WDCM 00013	$P_R \geq 50 \%$	Red purple colonies

7 STORAGE / SHELF LIFE

Ready-to-use media: 2-25 °C.

Expiry dates are indicated on the labels.

8 PACKAGING

Pre-poured media in plates (Ø 65 mm):

30 plates BM20909

9 BIBLIOGRAPHY

NF ISO 4832. July 2006. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coliforms - Colony count technique

NF V08-050. April 2009. Microbiology of food and animal feeding stuffs - Enumeration of presumptive coliforms by colony-count technique at 30 °C

NF V08-060. April 2009. Microbiology of food and animal feeding stuffs - Enumeration of thermotolerant coliforms by colony-count technique at 44 °C.

NF EN ISO 11133. July 2014. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media.

NF EN ISO 11133/A1. March 2018. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media.

NF EN ISO 11133/A2. May 2020. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media.

NF EN ISO 18593. July 2018. Microbiology of the food chain - Horizontal methods for sampling techniques from surfaces using contact plates and swabs.

10 OTHER INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

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