

Violet Red Bile Agar with Lactose and Glucose (VRBGL)

Cat. 1144

For the detection and enumeration of Enterobacteriaceae.

Practical information

Applications	Categories
Selective enumeration	Enterobacteria
Detection	Enterobacteria

Principles and uses

Violet Red Bile Agar with Lactose and Glucose (VRBLG) is recommended for the selective isolation of lactose and glucose-fermenting Gram-negative bacteria.

Gelatin pancreatic digest provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group. Lactose and glucose are the energy source carbohydrates. Bile salts and crystal violet inhibit Gram-positive bacteria. Neutral red is a pH indicator. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Bacteriological agar is the solidifying agent.

Formula in g/L

Bacteriological agar	15	Bile salts	1,5
Crystal violet	0,002	Gelatin pancreatic digest	7
Glucose monohydrate	10	Lactose monohydrate	10
Neutral red	0,03	Sodium chloride	5
Yeast extract	3		

Preparation

Suspend 51,5 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Cool to 45 °C and use immediately. The medium can also be dispensed and sterilized in the autoclave at 118 °C for 15 minutes.

Instructions for use

For the detection of Enterobacteriaceae:

- Prepare the sample using Lactose Broth (Cat. 1206), homogenize and incubate at 35±2 °C for 2-5 hours, time enough to revive bacteria but not sufficient for growth.
- After mixing with Mossel EE Broth (Cat. 1202) in a 1:100 ml ratio and incubating at 35±2 °C for 18-24 hours, subculture onto VRBLG Agar to obtain selective isolation.
- Incubate at 35±2 °C for 18-24 hours.

For the enumeration of Enterobacteriaceae:

- Inoculate the sample in Mossel EE Broth (dilutions 0,1, 0,01, 0,001 ml) and incubate at 35±2 °C for 24-48 hours.
- Subculture on plates of VRBLG Agar to obtain selective isolation.
- Incubate at 35±2 °C for 18-24 hours.
- Growth of well-developed red colonies of Gram-negative bacteria constitutes a positive result.
- Refer to the appropriate reference for further identification tests.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige reddish	Purple red	7,4 ± 0,2

Microbiological test

Incubation conditions: (35±2 °C / 18-24 h)

Microorganisms	Specification	Characteristic reaction
Shigella flexneri ATCC 12022	Good growth	Red colonies
Staphylococcus aureus ATCC 6538	Inhibited growth	
Escherichia coli ATCC 8739	Good growth	Red colonies

Storage

Temp. Min.: 2 °C
Temp. Max.: 25 °C

Bibliography

European Pharmacopoeia 6.0
Hitchins, A.D., P.A. Hartman, and E.C.D. Todd. 1992. Coliforms – Escherichia coli and its toxins, p. 325-369. In Vanderzant, C., and D.F. Splittstoesser (ed.) Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, DC.