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Product Information

41270 Violet Red Bile Lactose Dextrose Agar (VRB Lactose Dextrose Agar; Violet Red Bile Lactose Glucose Agar)

A selective medium for the detection of Enterobacteriaceae according the European Pharmacopoeia. The medium is specially used in the recovery of process-stressed bacteria using a progressive enrichment technique.

Composition:

Ingredients	Grams/Litre
Pancreatic digest of gelatin	7.0
Yeast extract	3.0
Bile salts	1.5
Lactose monohydrate	10.0
Dextrose monohydrate	10.0
Sodium chloride	5.0
Neutral red	0.03
Crystal violet	0.002
Agar	15.0
Final pH (at 25°C) 7.4 ± 0.2	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance:	Faintly red coloured, homogeneous, free flowing powder.
Gelling:	Firms
Color and Clarity:	Red to brown coloured, clear gel form in Petri plates.

Directions:
Suspend 51.5 g in 1 litre distilled water. Heat to boiling to dissolve the medium completely. Do not autoclave. Mix well and pour into sterile petri plates.

Technique:
Sample is diluted 1:10 in Lactose Broth and incubate 2-5 hours at 35-37°C.Then a volume of this pre-enrichment is ten fold diluted in EE Broth and incubate at 35-37°C for 18-24 hours. From this enrichment the surface of several plates of VRBDL Agar are inoculated. The product passes the test if after 18-24 hours of incubation at 35-37°C there is no growth of gram bacteria on any plate.
In the surface of the VRBL Agar the Enterobacteriaceae colonies are deep purple in colour surrounded by a clearing zone. Sometimes are present little colonies from *Pseudomonas* or *Aeromonas* that can be easy differentiated by the oxidase test.

Principle and Interpretation:
It is selective medium recommended for detection of all the members of the Enterobacteriaceae that can reveal the hygienic conditions in the food processing units at various stages such as raw materials, plant operation and processed foods (2,6). The medium was developed in 1962 by Mossel et al. (2,3,4) as more effective than MacConkey Agar it was official adopted by the European Pharmacopeia (8) for the microbiological examination of non-sterile products. The addition of glucose and lactose in the medium improved the detection of coliforms. Incubation can be carried out at different temperatures and incubation time depending upon the group of Enterobacteriaceae to be recovered (6).

Cultural characteristics after 18 - 24 hours at 35-37°C

Organism (ATCC)	Growth	Colour of Colony
Bacillus subtulis (6633)	-	-
Escherichia coli (10799)	+++ (Recovery > 30%)	dark violet colonies with precipitating zone
Escherichia coli (8739)	+++ (Recovery > 30%)	dark violet colonies with precipitating zone
Escherichia coli (25922)	+++ (Recovery > 30%)	dark violet colonies with precipitating zone
Enterobacter aerogenes (13048)	+++ (Recovery > 30%)	dark violet colonies with precipitating zone
Pseudomonas aeruginosa (27853)	+++	dark violet colonies with precipitating zone (24h
Salmonella typhimurium (14024)	+++ (Recovery > 30%)	dark violet colonies with precipitating zone (24h)
Proteus mirabilis (4675)	+++ (Recovery > 30%)	dark violet colonies with precipitating zone (24h)
Streptococcus faecalis (29212)	-	-
Staphylococcus aureus (25923)	-	-

References:

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6. European Pharmacopeia, 3th Edition (Suppl. 1999) Cap. 2.6.13 Microbiological examination of non sterile products. Tests for specified organisms. Council of Europe, Strasbourg