Violet Red Bile Glucose Agar w/ Lactose (Crystal Violet, Neutral Red, Bile Agar with Glucose) (Agar Medium F) BP

Intended Use
Violet Red Bile Glucose Agar with Lactose (Crystal Violet, Neutral Red, Bile Agar with Glucose) (Agar Medium F) is recommended for detection and enumeration of *Enterobacteriaceae* from pharmaceutical products in accordance with the microbial limit testing by harmonized methodology of BP.

Summary
Violet Red Bile Glucose Agar with Lactose is a selective medium recommended for detection of *Enterobacteriaceae* species. Mossel *et al.,* added glucose to the medium and observed an improved detection of coliforms. Incubation can be carried out at different temperatures and incubation time depending upon the group of *Enterobacteriaceae* to be recovered.

Principle
Pancreatic digest of gelatin and yeast extract provide nitrogenous compounds and other nutrients essential for bacterial metabolism. This media is selective due to presence of the inhibitors bile salts and crystal violet. Crystal violet inhibits Gram-positive organisms especially Staphylococci. Neutral red indicator helps to detect lactose and glucose monohydrate fermentation. Lactose and glucose monohydrate fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. Sodium chloride maintains the osmotic equilibrium in the medium. The red colour is due to absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8.

Formula*

Ingredients	**g/L**
Pancreatic Digest of Gelatin	7.0
Yeast Extract	3.0
Sodium Chloride	5.0
Bile Salts	1.5
Glucose Monohydrate	10.0
Lactose Monohydrate	10.0
Neutral Red	0.03
Crystal Violet	0.002
Agar	15.0
Final pH (at 25°C)	7.4 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 51.53 g of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
3. Boil with frequent agitation to dissolve the powder completely.
4. DO NOT AUTOCLAVE.

Quality Control

Dehydrated Appearance: Light yellow to pinkish beige coloured, homogeneous, free flowing powder.
Prepared Appearance: Reddish purple coloured, clear to slightly opalescent gel forms in petridishes.
Growth Promotion Test: Growth promotion is carried out in accordance with BP and growth is observed after an incubation at 30°C-35°C for 18 to 24 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 18 hours.
Indicative Properties: The test results observed are within the specified temperature and time, inoculating ≤100 cfu of appropriate microorganism.
Inhibitory Properties: No growth of the test microorganism occurs for the specified temperature and not less than the longest period of the time specified, inoculating > 100 cfu of the appropriate microorganism at 30°C-35°C for ≥ 24 hours.

Organism (ATCC)	**Growth**	**Colour of Colony**
Escherichia coli (8739)	Good	Pinkish red with bile precipitate
Pseudomonas aeruginosa (9027)	Good	Pink
Inhibitory		
Staphylococcus aureus subsp. *aureus* (6538)	Inhibited	-

Note:
1. For good growth - Growth obtained on test media should not differ by a factor greater than 2 from calculated value for a standardized inoculum.
2. For inhibition no growth of test microorganism should occur.
3. Inoculum for good growth is 10 -100 cfu and that for Inhibition is greater than 100 cfu.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:
1. Directions
2. Storage
3. Expiry

Precautions / Limitations

1. Over incubation may result in reverting of reaction.
2. Further biochemical tests must be carried out for confirmation.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. British Pharmacopoeia, 2011, The Stationery office British Pharmacopoeia.
2. Davis J.G., 1951, Milk Testing, dairy Industries Limited, London; pg.131.
3. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat. No.	**Product Description**	**Pack Size**
201220070500	Dehydrated Culture Media	500 g