OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

Glucose Phosphate Broth (MR-VP Medium)

Principle

MR VP broth contains buffered peptone as a carbon and nitrogen source for general growth requirements. Dextrose is a fermentable carbohydrate. Dipotassium phosphate is buffering agent. Some Enterobacteriaceae convert glucose to pyruvate by the Embden-Meyerhof pathway. While other bacteria metabolize pyruvate by the mixed acid pathway and produce acidic end products, such as lactic, acetic and formic acids. The acid so produced decreases the pH to 4.5 or below, which is indicated by a change in the color of methyl red from yellow to red. The glucose metabolizing and stabile acid producing bacteria are detected by the methyl red test (MR test), If the bacteria have the ability to utilize glucose with production of a stable acid, the color of the methyl red changes from yellow to red. While the other bacteria metabolize pyruvate by the butylene glycol pathway and produce neutral end products), one of which is acetoin (acetylmethylcarbinol). If acetyl methyl carbinol is produced, react ∝- naphthol, strong alkali (40% KOH), and atmospheric oxygen, converted to diacetyl. The diacetyl and quinidine containing compounds found in the peptones of the medium condense to form a pinkish red polymer.

Use: For performance of Methyl Red & Voges Proskauer tests based in differentiation of coliaerogenes group.

Contents*

Ingredients	Gram/Liter
Buffered Peptone	7.00
Glucose	5.00
Dipotassium Phosphate	5.00
pH at 25˚C	6.9 ±0.2

*** Formula adjusted for optimum performance and parameters**

Directions: Dissolve 17.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely and distribute aseptically in test tubes. Sterilize by autoclaving at 15 lbs pressure (121 °C) for 15 min, cool it to 42-45 °C and inoculate test sample aseptically.

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Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical samples etc.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	**Light beige colored free flowing, homogeneous powder**
Reaction of 1.7% solution	**6.9 ±0.2 at 25 ˚C**
pH	**6.70- 7.20**
Color and clarity of ready medium	**Light amber colored clear opalescent solution**
Growth Promotion properties	**Best at ≤ 100 CFU at 32-37 ºC for 18-72 h**
Indicative properties	**Optimum at ≤ 100 CFU at 32-37 ºC for 18-48 h**
Negative control	**Performed using sterile distilled water**

Different Microbial Response

Prepare MR-VP Medium per label directions. Inoculate (. Inoculum 50-100 CFU) and incubate at 35 ± 2°C for 24-48 hours or up to 3 days. Determine the methyl red and Voges-Proskauer test reactions.

Organism	Growth	MR test	VP test
Escherichia coli **(ATCC 25922)**	**Luxuriant**	**Bright red color (Positive reaction)**	**No color change (Negative reaction)**
Klebsiella aerogenes **(ATCC 13048)**	**Luxuriant**	**No color change (Negative reaction)**	**Pink or red color (Positive reaction) within 2-5 minutes**

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Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. **Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.**
2. ***Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.**
3. **Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), *Standard methods for the examination of water and wastewater*. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.**

Disclaimer:

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