

Technical Information

MacConkey MiVeg Broth (Double strength) w/ Neutral Red

Product Code : VM1539

Application:- MacConkey MiVeg Broth (Double strength) w/ Neutral Red is widely used for the primary isolation of coliforms from large samples such as water and wastewater.

Composition

| Ingredients | Gms / Litre |
|---------------------|-------------|
| MiVeg peptone | 47.000 |
| Lactose | 20.000 |
| Synthetic detergent | 3.000 |
| Sodium chloride | 10.000 |
| Neutral red | 0.150 |
| Final pH (at 25°C) | 7.4±0.2 |

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MacConkey MiVeg Broth (Double strength) w/ Neutral Red is prepared by replacing animal based peptones with Miveg peptones and it is free from BSE/TSE risk. This medium is a modification of MacConkey Broth (Double strength) w/ Neutral Red. MacConkey Broth is widely used as a differential medium for detection and enumeration of coliforms from a wide variety of clinical, food and water samples. The presence of the indicator neutral red in the medium helps in Identification of the organisms by change in colour (1, 2).

It contains MiVeg peptone which supplies necessary nitrogen source. Lactose is the fermentable carbohydrate source. Sodium chloride maintains the osmoticity of the cells. The selective action of these media is attributed to the presence of synthetic detergent, which is inhibitory to most species of gram-positive bacteria. Gram-negative bacteria usually grow well on these media and are differentiated by their ability to ferment lactose. The colour change of the medium shown, due to production of acid from lactose by lactose fermenters and a subsequent colour change occurs. The colour of medium changes when the pH of the media falls below 6.8. Lactose non-fermenting strains, such as *Shigella* and *Salmonella* do not alter the appearance of the media.

This medium is recommended for the primary isolation of coliforms from large samples such as water and wastewater. The medium turns pink in case of lactose fermentors while in case of lactose- non- fermenters, it becomes yellow due to neutral red. The medium has same composition in double strength to that of MacConkey Broth (DM1007), which contains neutral red as an indicator and is considered as a standard medium for the primary isolation as well as presumptive identification of coliform-aerogenes group of organisms in food and water.

Methodology

Suspend 80.15 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat if necessary to dissolve the medium completely. Distribute into test tubes with inverted Durham tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubes before inoculation.

Quality Control

Physical Appearance

Light yellow to pink coloured homogeneous free flowing powder

Colour and Clarity of prepared medium

Red coloured clear solution without any precipitate

Reaction

Reaction of 8.02 % w/v aqueous solution pH: 7.4 \pm 0.2 at 25°C

pH range

7.20-7.60

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours

| Organisms (ATCC) | Inoculum (CFU) | Acid | Gas |
|---|----------------|-------------------|-------------------|
| <i>Enterobacter aerogenes</i> ATCC 13048 | 50-100 | Positive reaction | Positive reaction |
| <i>Escherichia coli</i> ATCC 25922 | 50-100 | Positive reaction | Positive reaction |
| <i>Salmonella Choleraesuis</i> ATCC 12011 | 50-100 | Negative reaction | Negative reaction |
| <i>Staphylococcus aureus</i> ATCC 25923 | $\geq 10^3$ | Negative reaction | Negative reaction |

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. MacConkey, 1900, The Lancet, ii:20.

2. MacConkey, 1905, J. Hyg., 5:333.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate
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