# Phenol Red Maltose Agar

M271

Phenol Red Maltose Agar is used for studying maltose fermentation by the pure cultures of microorganisms.

## Composition**

| Ingredients | Gms / Litre |
|---|---|
| Proteose peptone | 10.000 |
| Beef extract | 1.000 |
| Sodium chloride | 5.000 |
| Maltose | 10.000 |
| Phenol red | 0.025 |
| Agar | 15.000 |
| Final pH ( at 25°C) | 7.4±0.2 |

**Formula adjusted, standardized to suit performance parameters

## Directions

Suspend 41.02 grams in 1000 ml distilled water. Heat with frequent agitation to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubed media to cool in slanted position to form slants with deep butts.

## Principle And Interpretation

Phenol Red Agar media are recommended (1, 2, 3) for studying the fermentation of various carbohydrates individually by the pure cultures of microorganisms.

Proteose peptone which is free from fermentable carbohydrates is added in the medium thereby preventing the production of false positive reactions. When Phenol Red Agar with Maltose is used, a positive carbohydrate fermentation reaction is indicated by the production of a yellow colour in agar due to the effect of acid production. Gas production is indicated by the splitting of agar or by the bubbles formation. Plates or tubes may be incubated aerobically or anaerobically depending on the type of the test organism.

## Quality Control

**Appearance**
Light yellow to pink coloured homogeneous free flowing powder

**Gelling**
Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**
Red clear to slightly opalescent gel forms in tubes as slants

**Reaction**
Reaction of 4.1% w/v aqueous solution at 25°C. pH : 7.4±0.2 pH : 7.4±0.2

**pH**
7.20-7.60

**Cultural Response**
M271: Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 24 hours

| Organism | Inoculum (CFU) | Growth | Acid | Gas |
|---|---|---|---|---|
| **Cultural Response** | | | | |
| *Alcaligenes faecalis ATCC 8750* | 50-100 | luxuriant | Negative reaction, no colour change | Negative reaction |

| | | | | |
|---|---|---|---|---|
| *Escherichia coli ATCC 25922* | 50-100 | luxuriant | Positive reaction, yellow colour | Positive reaction |
| *Klebsiella pneumoniae ATCC 13883* | 50-100 | luxuriant | Positive reaction, yellow colour | Positive reaction |
| *Proteus vulgaris ATCC 13315* | 50-100 | luxuriant | Positive reaction, yellow colour | Positive reaction |
| *Salmonella Typhimurium ATCC 14028* | 50-100 | luxuriant | Positive reaction, yellow colour | Positive reaction |
| *Shigella flexneri ATCC 12022* | 50-100 | luxuriant | Positive reaction, yellow colour | Negative reaction |

## Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

## Reference

1. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
2. Finegold and Baron, 1986, Bailey and Scotts Diagnostic Microbiology, 7th ed., The C.V. Mosby Co., St. Louis.
3. Ewing, 1986, Edwards and Ewings Identification of Enterobacteriaceae, 4th ed., Elsevier Science Publishing Co., Inc., New York.

Revision : 2 / 2015