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# MacConkey Agar Without Crystal Violet

Recommended for the cultivation and differentiation of enteric bacteria, restricting swarming of Proteus species from specimens such as urine which may contain large number of Proteus species as well as potentially pathogenic Gram positive organisms.

| | | | |
|---|---|---|---|
| REF: BS.1/MC01.100.0100 | 100 Gram | REF: BS.1/MC01.250.0250 | 250 Gram |
| REF: BS.1/MC01.500.0500 | 500 Gram | | |

## CLINICAL SIGNIFICANCE [1]

MacConkey Agar without Crystal Violet is a selective medium for the isolation of bile tolerant organisms from sewage and foodstuffs. Bile-tolerant Gram positive organisms as well as Gram negative organisms will grow on this medium. This formula is recommended by W.H.O. and other bodies for the examination of water and milk. Some strains of *Proteus* spp. will spread on this medium making interpretation difficult, for this reason MacConkey Agar (without salt) may be preferred as it is less prone to this phenomenon.

## METHOD PRINCIPLE

Peptone provide nitrogen/ vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Bile salts are the selective agents and inhibit gram positive organisms. Neutral red is the pH indicator and when lactose is fermented, the pH of the medium decreases, changing the color of neutral red into pink.

## MEDIA COMPOSITION

| Ingredient | g\L |
|---|---|
| Peptone | 20.000 |
| Lactose | 10.000 |
| Sodium taurocholate | 5.000 |
| Neutral red | 0.040 |
| Agar | 20.000 |

## PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  ***S56:*** dispose of this material and its container at hazardous or Special waste collection point.
  ***S57:*** use appropriate container to avoid environmental contamination.
  ***S61:*** avoid release in environment.

For further information, refer to the MacConkey Agar Without Crystal Violet material safety data sheet.

## MEDIA PREPARATION, STORAGE AND STABILITY

***BioScien*** MacConkey Agar without Crystal Violet dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. Hydrated MacConkey Agar without Crystal Violet media is Suspend 55.0 grams of medium in 1000 ml purified/distilled water. Heat to boiling with gentle swirling to dissolve the agar completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Avoid overheating. Cool to 45-50°C. Mix well and pour into sterile Petri plates. The surface of the medium should be dry when inoculated.
Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

***Final pH 7.4 ± 0.2 at 25°C***

***Deterioration***
The color of ***BioScien*** MacConkey Agar without Crystal Violet Light yellow to pink homogeneous free flowing powder, dehydrated medium Orange red coloured clear to slightly opalescent gel forms in Petri plates. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

## SPECIMEN COLLECTION AND PRESERVATION

Water, Faeces, Urine, Food and Dairy samples

## EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile petri-dishes
- Incubator
- Autoclave

## CHARACTERISTICS OF THE COLONIES

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

| Organism | Inoculum (CFU) | Growth | Recovery | Color of colony |
|---|---|---|---|---|
| Salmonella Paratyphi B ATCC 8759 | 50-100 | luxuriant | >=50% | colourless |
| Salmonella Typhi ATCC 6539 | 50-100 | luxuriant | >=50% | colourless |
| Salmonella Enteritidis ATCC 13076 | 50-100 | luxuriant | >=50% | colourless |
| Staphylococcus aureus subsp. aureus ATCC 25923 | 50-100 | fair-good | 30-40% | pale pink - red |
| Salmonella Paratyphi A ATCC 9150 | 50-100 | luxuriant | >=50% | colourless |

| | | | | |
|---|---|---|---|---|
| Escherichia coli ATCC 25922 | 50-100 | luxuriant | >=50% | pink to red with bile precipitate |
| Enterococcus faecalis ATCC 29212 | 50-100 | fair-good | 30-40% | pale pink - red |
| Shigella flexneri ATCC 12022 | 50-100 | fair-good | 30-40% | colourless |
| Klebsiella aerogenes ATCC 13048 | 50-100 | luxuriant | >=50% | pale pink - red |
| Proteus vulgaris ATCC 13315 | 50-100 | luxuriant | >=50% | colourless |

## QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support

## PERFORMANCE CHARACTERISTICS [4]

Performance of the medium is expected when used as per the direction on the label within the when stored at recommended temperature.

## REFERENCES


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4. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
5. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
6. The United States Pharmacopoeia XXI and the National Formulary, 16th ed., 1985, United States Pharmacopoeial Convention, Inc., Washington, D.C.
7. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
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| SYMBOLS IN PRODUCT LABELLING | | | |
|---|---|---|---|
| IVD | For in-vitro diagnostic use | Σ | Number of <n> test in the pack |
| LOT | Batch Code/Lot number | ⚠ | Caution |
| REF | Catalogue Number | | Do not use if package is damaged |
| | Temperature Limitation | | Consult Instruction for use |
| | Expiration Date | | |
| | Manufactured by | | |