**OXFORD LAB FINE CHEM LLP**
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

# TECHNICAL DATA SHEET

# MacConkey Agar Base, Harmonized

## Principle

**MacConkey agar is a modification of the original bile salt-neutral red-lactose agar recommended by MacConkey (1905) and is prepared in accordance with the harmonized principles of USP/EP/IP/BP/ ISO21567 and used for selective isolation and differentiation of Escherichia coli and other enteric bacteria in pharmaceutical testing and microbial limit testing of pharmaceutical products and raw material used in pharmaceutical industries. Media consists of pancreatic digest of gelatin, peptone (meat and casein), lactose monohydrate, sodium chloride, bile salts, neutral red, crystal violet and agar. The pancreatic digest of gelatin and peptone provides essential nutrients, vitamins and nitrogenous factors and growth factors required for growth of microorganisms. Lactose monohydrate is a carbon and energy source for gram-negative lactosefermenting *Escherichia coli* and other enteric bacteria. The bile salts and crystal violet provide selectivity to media and inhibits the growth of most species of gram-positive organisms. Sodium chloride maintains the osmotic balance in the medium. Whereas, the neutral red is pH indicator. Due to lactose fermentation, acid is produced and the color of neutral red changes. Lactose fermenting strains observed as red or pink colored and may be surrounded by a zone of acid precipitated bile salts.**

**Use: For selective isolation and differentiation of Escherichia coli and coliform bacteria in pharmaceutical testing according to harmonized methods.**

## Contents*

| Ingredients | Gram/Litre |
|---|---|
| Pancreatic Digest of Gelatin | 17.000 |
| Peptone (Meat and Casein) | 3.000 |
| Lactose Monohydrate | 10.000 |
| Sodium Chloride | 5.000 |
| Bile Salts | 1.500 |
| Neutral Red | 0.030 |
| Crystal Violet | 0.001 |
| Agar | 13.500 |
| pH at 25˚C | 7.1 ±0.2 |

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

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**Directions: Dissolve 51.50 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in petri plates. Ensure complete solidification and inoculate test sample aseptically.**

## 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** | **Pinkish beige colored free flowing, homogeneous powder.** |
| **Reaction of 5.0% solution** | **7.1 ±0.2 at 25˚C.** |
| **pH** | **6.90- 7.30.** |
| **Gelling** | **Firm comparable with 1.35% agar gel.** |
| **Color and clarity of ready medium** | **Orange red, slightly opalescent gel.** |
| **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.** |

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**Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate the plates at 3035°C for 18-72 hours.**

| Organism | ATCC | Inoculum | Growth | Recovery | Colony Color |
|---|---|---|---|---|---|
| *Escherichia coli* | 8739 | 50-100 | Luxuriant | ≥ 70% | Pink red with Bile precipitated |
| *Escherichia coli* | 25922 | 50-100 | Luxuriant | ≥ 70% | Pink red with Bile precipitated |
| *Salmonella typhimurium* | 14028 | 50-100 | Luxuriant | ≥ 70% | Colorless |
| *Salmonella enteritidis* | 13076 | 50-100 | Luxuriant | ≥ 70% | Colorless |
| *Shigella flexneri* | 12022 | 50-100 | Luxuriant | ≥ 60% | Colorless |
| *Proteus mirabilis* | 12453 | 50-100 | Luxuriant | ≥ 60% | Colorless |
| *Klebsiella aerogenes* | 13048 | 50-100 | Luxuriant | ≥ 60% | Pink red color |
| *Enterococcus faecalis* | 14506 | 50-100 | Poor | ≤ 20% | Colorless to light pink |
| *Staphylococcus aureus* | 6538 | 50-100 | Inhibited | - | - |
| *Staphylococcus epidermidis* | 12228 | 50-100 | Inhibited | - | - |

**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.**

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