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MacConkey Agar

Medical laboratories media for selective isolation and differentiation of Enterobacteriaceae, lactose fermenting and lactose non- fermenting enteric bacteria, and a variety of other Gram-negative rods from clinical specimens.

REF: BS.1/MA01.100.0100	100 Gram	REF: BS.1/MA01.250.0250	250 Gram
REF: BS.1/MA01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

MacConkey agar is used in the differentiation between lactose fermenting from lactose non-fermenting gram-negative bacteria, particularly members of the *Enterobacteriaceae* family. MacConkey Agar is used for the isolation of coliforms and intestinal pathogens in water, dairy products and clinical biological specimens (e.g. feces and urine).

METHOD PRINCIPLE

Peptone provides a source of nitrogen, vitamins, minerals and amino acids. Sodium chloride maintains the osmotic balance of the medium. Agar acts as a solidifying agent. Bile salts and crystal violet act as selective agents that inhibit the growth of Gram-positive bacteria, and enhance the selective growth of gram-negative bacteria. Lactose acts as a source of carbohydrate. Lactose-fermenting bacteria produce pink-red colonies, after fermenting the lactose to acids and dropping the pH of the indicator (neutral red) present in the medium. Since, non-fermenters can't utilize lactose, colonies appear colorless or transparent.

MEDIA COMPOSITION

Item	Formula per liter of medium
Pancreatic digest of Gelatin	17 gm
Peptone	3 gm
Lactose	10 gm
Bile salts	1.5 gm
Sodium chloride	5 gm
Neutral red	0.03 gm
Crystal violet	0.001 gm
Agar	13.5 gm

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 material safety data sheet.

STORAGE AND STABILITY

BioScien MacConkey Agar should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a 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 7.1 ± 0.2 at 25°C

PREPARATION

Suspend 50.031 grams in 1 liter distilled water. Heat, to boiling, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Pour into sterile petri dishes.

Deterioration

The color of ***BioScien*** MacConkey Agar is light yellow to pink homogeneous free flowing powder. Prepared Media is reddish purple in color. 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

Pharmaceutical samples, Food and dairy samples; Water samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri dishes
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after incubation at 35-37°C for 18-72H.

Microorganism	Result	Colony Color
Escherichia coli (ATCC 25922)	Luxuriant growth	pink to red with bile precipitate
Enterobacter aerogenes (ATCC 13048)	Luxuriant growth	pink to red
Enterococcus faecalis (ATCC 29212)	Fair-good growth	colorless to pale pink
Salmonella Typhimurium (ATCC 14028)	Luxuriant growth	colorless
Salmonella Enteritidis (ATCC 13076)	Luxuriant growth	colorless
Salmonella Paratyphi A (ATCC 9150)	Luxuriant growth	colorless
Salmonella Paratyphi B (ATCC 8759)	Luxuriant growth	colorless
Salmonella Typhi (ATCC 6539)	Luxuriant growth	colorless
Salmonella Abony (NCTC 6017)	Luxuriant growth	colorless

Proteus vulgaris (ATCC 13315)	Luxuriant growth	colorless
Shigella flexneri ATCC 12022	Fair-good growth	colorless
Staphylococcus aureus (ATCC 25923)	Inhibited	-
Staphylococcus epidermidis (ATCC 12228)	Inhibited	-
Corynebacterium diphtheriae type gravis	Inhibited	-

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

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8.www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm.
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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		

EC REP

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