

TM 1898 - MacCONKEY AGAR

INTENDED USE

For cultivation and differentiation of enteric bacteria and gram-positive microorganisms from clinical samples especially *Enterococcus faecalis* within 18 hours.

PRODUCT SUMMARY AND EXPLANATION

MacConkey Agar is recommended for isolation, identification and enumeration of *Staphylococcus aureus* and Faecal Streptococci. MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens. Subsequently MacConkey Agar and Broth have been recommended for use in microbiological examination of foodstuffs and for direct plating / inoculation of water samples for coliform counts. These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products and pharmaceutical preparations.

Lactose non-fermenting strains, such as *Shigella* and *Salmonella* are colourless and transparent and typically do not alter appearance of the medium. *Yersinia enterocolitica* may appear as small, non-lactose fermenting colonies after incubation at room temperature. Bacteria causing food poisoning are also isolated on MacConkey Agar, such as *Staphylococcus aureus* and Faecal Streptococci.

COMPOSITION

Ingredients	Gms / Ltr
Peptic digest of animal tissue	20.000
Agar	20.000
Lactose	10.000
Sodium taurocholate	5.000
Neutral red	0.070

PRINCIPLE

Peptic digest of animal tissue provides nitrogenous and carbonaceous compounds long chain amino acids, vitamins and other essential growth nutrients. Gram positive with Gram-negative bacteria usually grow well on the medium and are differentiated by their ability to ferment lactose. Lactose fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. The red colour is due to production of acid from lactose, absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8. Lactose is a fermentable carbohydrate for coliform. Sodium taurocholate is used as a selective agent in medium. Neutral red is a pH indicator that turns red at a pH below 6.8 and is colorless at any pH greater than 6.8. Agar is used to solidifying the media. Lactose is a fermentable carbohydrate for coliform. Sodium taurocholate is used as selective agent in medium. Neutral red plays as an indicator which changes the colour of the medium after production of acid from lactose.

INSTRUCTION FOR USE

- Dissolve 55.07 grams in 1000 ml distilled water.
- Heat to boiling with gentle swirling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Avoid overheating.
- Cool to 45-50°C and pour into sterile Petri plates. The surface of the medium should be dry when inoculated.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Light yellow to pink homogeneous free flowing powder
Appearance of prepared medium : Light red coloured clear to slightly opalescent gel forms in Petri plates
pH (at 25°C) : 7.4±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of Colony	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	50-100	Luxuriant	>=70 %	Pink to red with Bile precipitate	35-37°C	18-24 Hours
<i>Klebsiella aerogenes</i>	13048	50-100	Luxuriant	>=70 %	Pale pink to red	35-37°C	18-24 Hours
<i>Enterococcus faecalis</i>	29212	50-100	Fair to good	20 -40 %	Pale pink to red	35-37°C	18-24 Hours
<i>Proteus vulgaris</i>	13315	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
<i>Salmonella Paratyphi A</i>	9150	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
<i>Shigella flexneri</i>	12022	50-100	Fair to good	20 -40 %	Colourless	35-37°C	18-24 Hours
<i>Salmonella Paratyphi B</i>	8759	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
<i>Salmonella Enteritidis</i>	13076	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
<i>Salmonella Typhi</i>	6539	50-100	Luxuriant	>=70 %	Colorless	35-37°C	18-24 Hours

<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	25923	50-100	Good-luxuriant	>=50%	pale pink	35-37°C	18-24 Hours
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PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 10-25°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

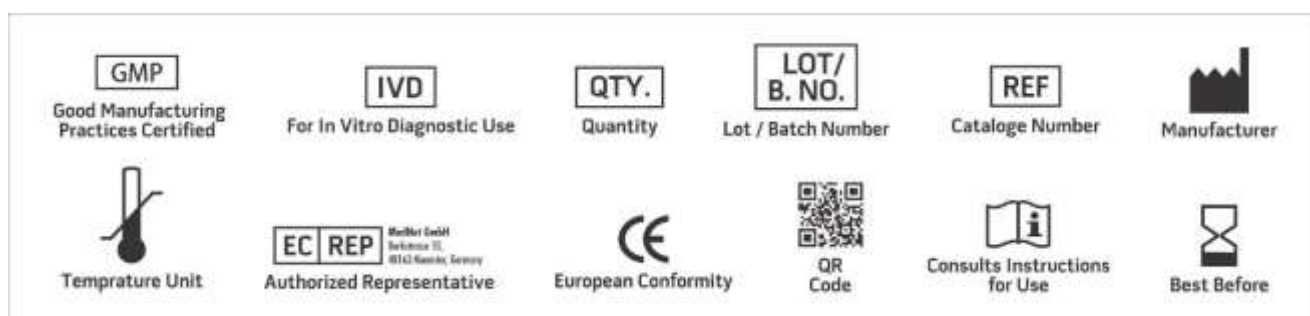
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

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.
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10. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For Lab Use Only
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