

Product Data Sheet

MacCONKEY AGAR MEDIUM (as per IP)

Product No. GB-DCM-00385-1A

INTENDED USE

For selective isolation and differentiation of lactose fermenting and nonlactose fermenting enteric bacteria.

PRODUCT SUMMARY

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 as per Indian Pharmacopoeia. It is recommended for selective isolation and differentiation of lactose fermenting and lactose non-fermenting enteric bacteria. After enrichment of *Escherichia coli* in MacConkey Broth, it is then subcultured on MacConkey Agar. 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 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.

Product Specifications

Ingredients	Gms / Ltr
Peptones (meat and casein, equal parts)	3.000
Pancreatic digest of gelatin	17.000
Lactose	10.000
Bile salts	1.500
Sodium chloride	5.000
Crystal violet	0.001
Neutral red	0.030
Agar	15.000



PRINCIPLE

Original medium contains protein, bile salts, sodium chloride and two dyes. The selective action of this medium is attributed to crystal violet and bile salts, which are inhibitory to most species of gram-positive bacteria. Essential nutrients, vitamins and nitrogenous factors are provided by a combination of peptones (meat and casein) and pancreatic digest of gelatin. Lactose is the fermentable source of carbohydrate. Sodium chloride maintains the osmotic balance in the medium. Neutral red is the pH indicator.

INSTRUCTION FOR USE

- Dissolve 50.03 grams in 1000 ml purified/ distilled water.
- Heat to boiling with gentle swirling to dissolve the agar 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 : Red with purplish tinge coloured clear to slightly opalescent gel forms in Petri plates.

pH (at 25°C) : 7.1± 0.2

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°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.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of Colony	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	0%	Colourless	30-35°C	18-24 Hours
Salmonella Paratyphi A	9150	50-100	Luxuriant	>=70%	Colourless	30-35°C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	>=70%	Colourless	30-35°C	18-24 Hours
Salmonella Typhi	6539	50-100	Luxuriant	>=70%	Colourless	30-35°C	18-24 Hours
Staphylococcus epidermidis	12228	>=10 ³	Inhibited	0%	-	30-35°C	>=24 Hours
Salmonella Typhi	6539	50-100	fair to good	20 -40 %	pink-red with bile precipitate	30-35°C	18-24 Hours
Staphylococcus aureus subsp.aureus	6538	>=10 ³	inhibited	>=70%	-	30-35°C	18-24 Hours
Salmonella Paratyphi B	8759	50-100	Luxuriant	>=70%	colourless	30-35°C	18-24 Hours
Escherichia coli	25922	50-100	Luxuriant	>=70%	pink to red with bile precipitate	30-35°C	18-24 Hours
Klebsiella aerogenes	13048	50 -100	Luxuriant	>=70 %	pink to red	30-35°C	18-24 Hours
Salmonella Typhimurium	14028	50 -100	none - poor	0-10%	colourless	30-35°C	18-24 Hours
Enterococcus faecalis	29212	50-100	Luxuriant	>=70 %	colourless to pale pink	30-35°C	18-24 Hours
Salmonella Enteritidis	13076	50 -100	Luxuriant	>=70 %	colourless	30-35°C	18-24 Hours
Staphylococcus aureus subsp.aureus	25923	>=10 ³	inhibited	0 %	-	30-35°C	18-24 Hours

This product is for research use only.