

## CM 22296 - MACCONKEY AGAR W/ 0.15% BILE SALTS, CV AND NACL (USP/EP/BP/JP/IP)

### INTENDED USE

For the selection and subculture of *E. coli* in accordance with harmonized method.

### PRODUCT SUMMARY AND EXPLANATION

MacConkey agars are slightly selective and differential plating media mainly used for the detection and isolation of gram negative organisms from clinical, dairy, food, water, pharmaceutical and industrial sources. It is also recommended for the selection and recovery of the Enterobacteriaceae and related enteric gram-negative bacilli. USP recommends this medium for use in the performance of Microbial Limit Tests.

The medium corresponds with that recommended by APHA can be used for the direct plating of water samples for coliform bacilli, for the examination of food samples for food poisoning organisms and for the isolation of *Salmonella* and *Shigella* species in cheese. Other than that, this medium is also used for count of coli-aerogenes bacteria in cattle and sheep faeces, the count of coli-aerogenes and non-lactose fermenters in poultry carcasses, bacterial counts on irradiated minced chicken and the recognition of coli-aerogenes bacteria during investigations on the genus *Aeromonas*. 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.

### COMPOSITION

Ingredients	Gms / Ltr
Pancreatic digest of gelatin	17.000
Agar	15.000
Lactose	10.000
Sodium chloride	5.000
Peptic digest of animal tissue	1.500
Casein enzymic hydrolysate	1.500
Neutral red	0.030
Crystal violet	0.001

### PRINCIPLE

Pancreatic digest of Gelatin is the nitrogen and vitamin sources in MacConkey Agar. Lactose Monohydrate is the fermentable carbohydrate with Neutral red serving as the pH indicator. Lactose fermenting strains grow as red or pink colonies 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, transparent and typically do not alter appearance of the medium. Sodium chloride maintains the osmotic balance. Agar is the solidifying agent. Bile salts mixture and Crystal violet are the selective agents, inhibiting Gram positive cocci and allowing Gram-negative organisms to grow.

### INSTRUCTION FOR USE

1. MacConkey Agar is a ready to use solid media in glass bottle. The medium is pre-sterilized, hence sterilization is not required.
2. Prior to use, medium in the bottle can be melted either by using a pre-heated water bath or any other method.
3. Slightly loosen the cap before melting.



- Pour liquefied agar into each plate as desired and allow them to solidify at room temperature. Plates are now ready to inoculate or refrigerate for later use.

### QUALITY CONTROL SPECIFICATIONS

<b>Appearance</b>	:	Red with purplish tinge color, clear to slightly opalescent gel.
<b>Quantity of Medium</b>	:	100 ml of the media in glass bottle.
<b>pH (at 25°C)</b>	:	7.1± 0.2
<b>Sterility Check</b>	:	Passes release criteria

### INTERPRETATION

Growth Promotion is carried out in accordance with the harmonized method of USP/EP/BP/JP. Cultural response was observed after incubation at 30-35°C for 18-24 hours. Recovery rate is considered 100% for bacteria growth on Soya Agar

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colony Appearance	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	50-100	Luxuriant	>=70%	Pink to red colour with bile ppt	30-35°C	18-24 Hours
<i>Escherichia coli</i>	8739	50-100	Luxuriant	>=70%	Pink to red colour with bile ppt	30-35°C	18-24 Hours
<i>Enterobacter aerogenes</i>	13048	50-100	Luxuriant	>=70%	Pink to red colour	30-35°C	18-24 Hours
<i>Enterococcus faecalis</i>	29212	50-100	Poor-Inhibited	0-10%	Colourless to Pale pink	30-35 °C	18-24 Hours
<i>Salmonella typhimurium</i>	14028	50-100	Luxuriant	>=70%	Colourless	30-35°C	18-24 Hours
<i>Proteus vulgaris</i>	13315	50-100	Luxuriant	>=70%	Colourless	30-35°C	18-24 Hours
<i>Shigella flexneri</i>	12022	50-100	Fair to good	20-40%	Colourless	30-35°C	18-24 Hours
<i>Staphylococcus aureus</i>	6538	≥ 1000	Inhibited	-	-	30-35°C	18-24 Hours
<i>Staphylococcus epidermidis</i>	12228	≥ 1000	Inhibited	-	-	30-35°C	18-24 Hours

### PACKAGING

100ml glass bottle.

### STORAGE

On receipt, store bottles in the dark at 10 to 25° C. Avoid freezing and overheating. The medium may be used up to the expiration date and incubated for the recommended incubation times. Bottles from unopened packages can be used up to the expiration date. Opened bottles must be used immediately. To prepare plates or tubes from the bottled medium, it must first be liquefied. Do not liquefy any leftovers for a second time

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

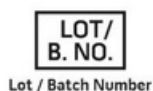
### DISPOSAL

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

### REFERENCES



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4. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.
5. Eaton A. D., Clesceri L. S. and Greenberg A. W.,(Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C
6. The United States Pharmacopoeia. Amended Chapters 61, 62 & 111, The United States Pharmacopoeial Convention Inc., Rockville, MD. (2009).
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9. Barnes Ella M. and Shrimpton D. H., 1957, J. Appl. Bacteriol., 20(2),273-285.
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**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*ForLabUseOnly**

