

## TM 198 - MacCONKEY AGAR W/ BROMO THYMOL BLUE

### INTENDED USE

For detection of lactose fermenting enteric bacteria.

### PRODUCT SUMMARY AND EXPLANATION

MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens. The original medium contains protein, bile salts, sodium chloride and two dyes. MacConkey Agar w/Bromo thymol blue is a modification of the original medium by the replacement of the two dyes with a single dye i.e. bromo thymol blue.

### COMPOSITION

Ingredients	Gms / Ltr
Peptone	17.000
Proteose peptone	3.000
Lactose	10.000
Bile salts	1.500
Sodium chloride	5.000
Bromothymol blue	0.030
Agar	15.000

### PRINCIPLE

Peptone and proteose peptone serve as the sources of essential nutrients. Lactose is the fermentable carbohydrate source. Lactose fermenting enteric bacteria ferment lactose and produce acidic byproducts. This acidic condition formed causes the pH indicator dye i.e. bromo thymol blue to change colour from blue to yellow. Lactose non-fermenters fail to cause a colour change in the medium. Sodium chloride maintains the osmotic equilibrium of the medium. Bile salts serves to make the medium selective by inhibiting the accompanying gram-positive bacteria.

### INSTRUCTION FOR USE

- Dissolve 51.53 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure for 15 minutes.
- Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium	: Green coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C)	: 7.1±0.2

### INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
<i>Klebsiella aerogenes</i>	13048	50-100	Luxuriant	$\geq 70\%$	Yellow	35-37°C	18-24 Hours
<i>Enterococcus faecalis</i>	29212	$\geq 10^3$	Inhibited	0%	-	35-37°C	18-24 Hours
<i>Escherichia coli</i>	25922	50-100	Luxuriant	$\geq 70\%$	Yellow	35-37°C	18-24 Hours
<i>Proteus vulgaris</i>	13315	50-100	Luxuriant	$\geq 70\%$	Colourless-light blue	35-37°C	18-24 Hours
<i>Salmonella Typhi</i>	6539	50-100	Luxuriant	$\geq 70\%$	Colourless-light blue	35-37°C	18-24 Hours
<i>Shigella flexneri</i>	12022	50-100	Luxuriant	$\geq 70\%$	Colourless-light blue	35-37°C	18-24 Hours
<i>Staphylococcus aureus subsp. aureus</i>	25923	$\geq 10^3$	Inhibited	0%	-	35-37°C	18-24 Hours

#### 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 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.

#### REFERENCES

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.



2. 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.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2<sup>nd</sup> Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015)
5. Manual of Clinical Microbiology, 11th Edition. Vol. 1.
6. MacConkey, 1900, The Lancet, ii:20.
7. MacConkey, 1905, J. Hyg., 5:333.
8. Salfinger Y., and Tortorello M.L, 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
9. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., 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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