

MacConkey Agar**(M550)**

Recommended for selective isolation and differentiation of E.coli, coliforms and other enteric bacteria in clinical specimens.

Composition

Ingredients	g/ L
Gelatin Peptone	17.00
Casein and Meat Peptone.....	3.00
Lactose.....	10.00
Bile Salts	1.50
Sodium chloride.....	5.00
Crystal violet.....	0.001
Neutral red.....	0.03
Agar.....	15.00

Description

MacConkey Agar is the earliest selective and differential medium for cultivation of coliform organisms. Gelatin peptone and Casein and Meat Peptone provide the essential nutrients, vitamins and nitrogenous factors required for growth of microorganisms. Lactose monohydrate is the fermentable source of carbohydrate. The selective action of this medium is attributed to crystal violet and bile salts, which are inhibitory to most species of gram-positive bacteria. Sodium chloride maintains the osmotic balance in the medium. 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.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Follow good microbiological lab practices while handling specimens and culture.

Limitations

1. Individual organisms differ in their growth requirement and may show variable growth patterns.
2. Each lot of the medium has been tested for the organisms specified on the COA.
3. The surface of the medium should be dry when inoculated.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality control**Physical/Chemical control**

Color : Violet-pink pH: 6.90-7.30

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Microbiological activity

Organisms	Inoculum CFU/ml	Growth	Color of colony
Escherichia coli ATCC 25922	50-100	Good growth	pink -red
Proteus mirabilis ATCC 12453	50-100	Good growth	colourless
Salmonella Typhi ATCC 6539	50-100	Good growth	colourless
Staphylococcus aureus ATCC 25923	$\geq 10^3$	inhibited	-
Enterococcus faecalis ATCC 29212	$\geq 10^3$	inhibited	-

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques.

Reference

1. MacConkey, 1905, J. Hyg., 5:333.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.