

MacConkey Agar NO.3

Product No.	Product Category	Specification
HCM161	Dehydrated Culture Medium	500g/bottle

Intended Use

For the differentiation between lactose and nonlactose fermenters with the inhibition of Gram-positive cocci from clinical samples (e.g. faecal, blood, bile, pus, skin, mouth, etc.). Can also be used for testing food and water samples.

Principle and Interpretation

Peptone provides nitrogenous and carbonaceous compounds amino acids, vitamins and other essential growth nutrients. The selective action of this medium is attributed to crystal violet and bile salts, which are inhibitory to most species of gram positive bacteria. 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.

Formulation

Ingredients	/liter
Peptone	20.0g
Lactose	10.0g
Sodium chloride	5.0g
Bile salts NO.3	1.5g
Neutral red	0.03g
Crystal violet	0.001g
Agar	15.0g
pH7.1±0.2 at 25°C	

Preparation

Suspend 51.5g in 1 liter of distilled water. Bring to the boil to dissolve completely. Sterilise by autoclaving at 121°C for 15 minutes. Cool to 50°C. Mix well and pour into sterile containers.

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Technical Data Sheet



Quality Control

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

Quality control strains	Growth	Characteristics
<i>Escherichia coli</i> ATCC25922	Good, PR \geq 0.7	Pink colonies bile precipitation
<i>Salmonella typhimurium</i> ATCC14028		Straw colonies
<i>Proteus mirabilis</i> ATCC29906		Straw colonies, slight/ no swarming
<i>Shigella sonnei</i> ATCC25931		Straw colonies
<i>Staphylococcus aureus</i> ATCC6538	G \leq 1	Inhibition
<i>Enterococcus faecalis</i> ATCC29212		

Storage and Shelf Life

2-30°C, Keep container tightly closed, avoid direct sunlight.

Use before expiry date on the label.

Precautions

1. When weighing the dehydrated medium, please wear masks to avoid causing respiratory system discomfort
2. Keep container tightly closed after using to prevent clumping.

Waste Disposal

Microbiological contamination was disposed by autoclaving at 121°C for 30 minutes.

Revision

On October 31, 2024

References

American Public Health Association (1998) Standard Methods for the Examination of Water and Wastewater. 20th Edn. APHA Inc. Washington DC.

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