PRODUCT INFORMATION

Product Type: Divided Petri Dishes 90mm (DD)

Cat No. DD003 – TSBA + DEF.SHEEP BLOOD / MACCONKEY AGAR

Intended Use:

MacConkey Agar

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, cosmetic, and other industrial sources. MacConkey Agar is used for isolating and differentiating lactose-fermenting from lactose-nonfermenting gram-negative enteric bacilli.

TSBA + Def. Sheep Blood

Tryptic Soy Blood Agar Base No. 2 with 50 mL/L donor sheep blood is a robust, nutrient-rich medium for growing and differentiating fastidious bacteria, especially for observing hemolysis patterns.

Principle and Uses:

MacConkey Agar

MacConkey Agar is based on the bile salt-neutral red-lactose agar of MacConkey.
MacConkey Agar contains crystal violet and bile salts that inhibit gram-positive organisms and allow gram-negative organisms to grow. Isolated colonies of coliform bacteria are brick red in
color and may be surrounded by a zone of precipitated bile. This bile precipitate is due to a local pH drop around the colony due to lactose fermentation. Colonies that do not ferment lactose
(such as typhoid, paratyphoid and dysentery bacilli) remain colorless. When lactose non-fermenters grow in proximity to coliform colonies, the surrounding medium appears as cleared areas. MacConkey Agar is listed as one of the recommended media for the isolation of *E. coli* from nonsterile pharmaceutical products.
Peptones are sources of nitrogen and other nutrients. Yeast extract is a source of trace elements, vitamins, amino acids and carbon. Lactose is a fermentable carbohydrate. When lactose is fermented, a local pH drop around the colony causes a color change in the pH indicator (neutral red) and bile precipitation. Bile salts, bile salts no. 3, oxgall and crystal violet are selective agents that inhibit growth of gram-positive organisms. Sodium chloride maintains osmotic balance in the medium. Magnesium sulfate is a source of divalent cations. Agar is the solidifying agent.
Incubate plates for 18-72 hours at 35 ± 2°C under appropriate atmospheric conditions, or as
instructed in standard reference.

MacConkey Agar Expected Results

Lactose-fermenting organisms grow as pink to brick-red colonies with or without a zone of precipitated bile. Lactose-nonfermenting organisms grow as colorless or clear colonies.

TSBA + Def. Sheep Blood Uses:

Isolation and cultivation of fastidious bacteria (e.g., *Streptococcus, Staphylococcus, Haemophilus*).
Observation of hemolytic reactions (alpha, beta, gamma hemolysis).
Food, clinical, and environmental microbiology for general and specific pathogen detection.
The nutrient-rich base supports the growth of a wide range of organisms. The addition of blood provides additional growth factors and allows for the detection of hemolytic activity, which is useful for differentiating bacterial species.

Composition
MacConkey Agar
Pancreatic Digest of Gelatin - 17.0 g/L
Peptones (meat and casein) - 3.0 g/L
Lactose - 10.0 g/L
Bile Salts - 1.5 g/L
Sodium Chloride - 5.0 g/L
Agar - 13.5 g/L
Neutral Red - 0.03 g/L
Crystal Violet - 1.0 mg/L

TSBA + Def. Sheep Blood:
Tryptone H - 15 g/L,
Soytone - 5 g/L,
Sodium Chloride - 5 g/L,
Agar - 15 g/L
Donor Sheep Blood – 50 ml/L

Storage: 2-8°C
Appearance:
MacConkey Agar: Medium-dark, rose-tan and trace hazy.
TSBA + Def. Sheep Blood: Cherry red agar
pH Range:
MacConkey Agar: 6.9 - 7.3
TSBA + Def. Sheep Blood: 7.1 - 7.5

Package contents: 10 plates in a package
Exp. Date: Printed on label and on the item.
Required materials not supplied: Laboratory equipment as required.

Warning and Precautions - For professional use only. Follow good microbiological lab practices while handling specimens and culture. Do not use Petri dishes if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration. Avoid freezing and overheating. The Petri Dishes may be used / inoculated up to the expiration date and incubated for the recommended incubation times. After use and prior to discarding, specimen containers and all contaminated material, including the used culture media and contaminated culture containers, must be sterilized or incinerated by validated procedures. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium.
If excessive moisture is observed, invert the bottom over an off-set lid and allow to air dry in order to prevent formation of a seal between the top and bottom of the plate during incubation. Storage Instructions: On receipt, store plates in the dark at 2–8 °C. Avoid freezing and overheating. Do not open until ready to use.

Waste Disposal
After interpretation all items should be destroyed by standard incineration methods.

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Implementation Date: 17/11/25
Version Number: 01

Performance Testing Results:
GPT: inoculum 10-100 cfu.
Inhibitory properties: inoculum 10000 cfu.

TEST	ATCC	Incubation Temp. (℃)	Incubation Cond.	Reaction 1 TSA+blood		Reaction 2 MC	
Staphylococcus aureus	25923	33-37 ℃	Aerobic, 24 hours	Growth	Beta hemolytic reaction	/	
Streptococcus pyogenes	19615	33-37 ℃	Aerobic, 24 hours	Growth	Beta hemolytic reaction	/	
Streptococcus pneumoniae	49619	33-37 ℃	Aerobic, 24 hours	Growth	Alpha hemolytic reaction	/	
Pseudomonas aeruginosa	27853	33-37 ℃	Aerobic, 24 hours	/		Growth	Colorless
Shigella flexneri	29903	33-37 ℃	Aerobic, 24 hours	/		Growth	Colorless
Shigella sonnei	29930	33-37 ℃	Aerobic, 24 hours	/		Growth	Colorless
Klebsiella pneumoniae	13883	33-37 ℃	Aerobic, 24 hours	/		Growth	Red-pink, mucoid
Proteus mirabilis	4630	33-37 ℃	Aerobic, 24 hours	/		Growth	Colorless non-swarming
Salmonella typhimurium	14028	33-37 ℃	Aerobic, 24 hours	/		Growth	Colorless
Escherichia coli	8739	33-37 ℃	Aerobic, 24 hours	/		Growth	Red-pink, slight precipitate
Enterococcus faecalis	19433	33-37 ℃	Aerobic, 24 hours	/		Inhibited	

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