MacConkey Agar Catalog : HB6238-10-5K

MacConkey Agar is used for the selective isolation and identification of enterobacteria from feces, urine, wastewater and foods. MacConkey Agar is a selective and differential medium for the isolation of enteric gram-negative bacilli.

Approximate Formula:

Ingredients	gm/liter
Pancreatic digest of casein	17.0
Peptones (Meat and Casein)	3.0
Lactose Monohydrate	10.0
Sodium chloride	5.0
Bile salts	1.5
Neutral red	0.03
Crystal Violet	0.001
Agar	13.5

Final pH 7.1±0.2 at 25℃

*Adjusted and/or supplemented as required to meet performance criteria.

Directions:

Suspend 50g of the medium in one liter of deionized or distilled water. Mix well and heat with frequent agitation. Boil for 1 minute. Dispense into tubes or flasks. Sterilize in the autoclave at 121℃(15 lbs.) for 15 minutes.

Principle and Interpretation:

MacConkey Agar is used for the selective isolation and identification of enterobacteria from feces, urine, wastewater and foods. MacConkey Agar is used for isolating and differentiating lactose-fermenting from lactose-nonfermenting gram-negative enteric bacilli.

Pancreatic digest of casein provides amino acids and other complex nitrogenous substances. 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 colour 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 remain colorless. When lactose nonfermenters grow in proximity to coliform colonies, the surrounding medium appears as cleared areas. Agar is the solidifying agent.

Appearance:

Dehydrated medium is a pale grey powder. The prepared medium is a kind of red transparent gel.

Precautions:

This medium is for laboratory use only. Dried medium which is past shelf life, caking or color variation cannot be used.

Storage conditions and Shelf life:

MacConkey Agar must be stored tightly capped in the original container at 5-30°C. The dehydrated medium has a shelf life of 5 years from date of manufacturing. Prepared medium may be stored, out of direct light at 2-8°C.

Quality control:

Cultural characteristics observed after an incubation at 30-35°C for 24 - 48 h.

Microorganism	Strains Number	Inoculum (CFU)	Growth	Recovery	Remarks
Escherichia coli	ATCC 8739	10-100	Luxuriant	≥ 70%	Pink colonies, bile salt deposit ring.
Salmonella typhimurium	ATCC 14028	10-100	Luxuriant	≥ 70%	Colorless transparent colonies.
Staphylococcus aureus	ATCC 6538	100-1000	Inhibited	/	Inhibition

Reference:

1. GB4789.28-2013 People's Republic of China food safety national standard food microbiology test medium and reagent quality requirements.
2. Murray, Baron, Jorgensen, Landry and Pfaller (eds.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.
3. Forbes, Sahm and Weissfeld. 2007. Bailey & Scott’ s diagnostic microbiology, 12th ed. Mosby Elsevier, St. Louis, Mo.

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