

MacConkey Agar

Catalog : HB6238-13

MacConkey Agar is used for the selective isolation and identification of coliforms and intestinal pathogens from feces, urine, waste water and foods.

Approximate Formula:

Ingredients	gm/liter
Peptic Digest of Animal Tissue	20.0
Lactose	10.0
Ox Bile	5.0
Sodium Chloride	5.0
Neutral Red	0.075
Agar	12.0
Final pH 7.4±0.2 at 25 °C	

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

Directions:

Suspend 52.0g 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 °C (15 lbs.) for 15 minutes.

Principle and Interpretation:

Peptic Digest of Animal Tissue are sources of nitrogen and other nutrients. 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. Ox Bile is selective agent that inhibit growth of gram-positive organisms. Sodium chloride maintains osmotic balance in the medium. Agar is the solidifying agent.

Appearance:

Dehydrated medium is a yellowish-red 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:

Prepare the culture medium as per label directions. Inoculate and incubate at 36±1 °C for 18-24 hours.

Microorganism	Strains Number	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Escherichia coli</i>	ATCC 8739	10-100	Luxuriant	≥ 50%	pink-red with bile precipitate.
<i>Escherichia coli</i>	ATCC 25922	10-100	Luxuriant	≥ 50%	pink-red with bile precipitate.
<i>Shigella flexneri</i>	ATCC 12022	10-100	Luxuriant	30-40%	Colorless
<i>Enterobacter aerogenes</i>	ATCC 13048	10-100	Luxuriant	≥ 50%	Pale pink to red
<i>Salmonella Enteritidis</i>	ATCC 13076	10-100	Luxuriant	≥ 50%	Colorless
<i>Proteus vulgaris</i>	ATCC 13315	10-100	Luxuriant	≥ 50%	Colorless
<i>Staphylococcus aureus</i>	ATCC 6538	100-1000	Inhibited	0%	/

References:

- Murray, Baron, Jorgensen, Landry and Pfaller (eds.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.
- United States Pharmacopeial Convention, Inc. 2008. The United States pharmacopeia 31/The national formulary 26, Supp. 1, 8-1-08, online. United States Pharmacopeial Convention, Inc., Rockville, Md.
- GB4789.28-2013 People's Republic of China food safety national standard food microbiology test medium and reagent quality requirements.