

MacCONKEY BROTH (7185)

Intended Use

MacConkey Broth is used for the detection of coliform bacteria in milk and water.

Product Summary and Explanation

MacConkey Broth is a modification of the original bile salt broth recommended by MacConkey, containing 0.5% sodium taurocholate and litmus as an indicator.¹ MacConkey suggested further variations of this formula using neutral red indicator instead of litmus.^{2,3} Childs and Allen demonstrated the inhibitory effect of neutral red and substituted the less inhibitory Bromcresol purple.⁴

Principles of the Procedure

Enzymatic Digest of Gelatin provides the nitrogen and vitamin sources in MacConkey Broth. Lactose is the carbohydrate for Gram-negative lactose-fermenting bacilli. Bile Salts inhibit the growth of gram-positive organisms. Bromcresol Purple is the indicator.

Formula / Liter

Enzymatic Digest of Gelatin	20 g
Lactose	10 g
Bile Salts	5 g
Bromcresol Purple	0.01 g

Final pH: 7.3 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Dissolve 35 g of the medium in one liter of purified water.
2. Dispense into tubes containing Durham tubes.
3. Autoclave at 121°C for 15 minutes.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free-flowing, and light beige.

Prepared Appearance: Prepared medium is dark purple to red-purple, and clear to slight hazy.

Expected Cultural Response: Cultural response in MacConkey Broth at 35°C after 24 hours incubation.

Microorganism	Response	Reactions	
		Acid	Gas
<i>Enterobacter aerogenes</i> ATCC® 13048	growth	positive	positive
<i>Escherichia coli</i> ATCC® 11775	growth	positive	positive
<i>Escherichia coli</i> ATCC® 25922	growth	positive	positive
<i>Salmonella typhimurium</i> ATCC® 14028	growth	negative	negative
<i>Staphylococcus aureus</i> ATCC® 25923	inhibited	---	---

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to the appropriate references using MacConkey Broth.

Results

Lactose-fermenting organisms grow well in MacConkey Broth and produce acid, causing the medium to turn yellow. Gas is also produced. Non-fermenting organisms produce good growth, but will not produce acid or gas.

Storage

Store dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in intact container when stored as directed.

Limitation of the Procedure

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

MacConkey Broth	Code No.	7185A	500 g
		7185B	2 kg
		7185C	10 kg

References

1. **MacConkey, A.** 1901. Centr. Bakt. **29**:740.
2. **MacConkey, A.** 1905. Lactose-fermenting bacteria in faeces. J. Hyg. **5**:333-379.
3. **MacConkey, A.** 1908. Bile salt media and their advantage in some bacteriological examinations. J. Hyg. **8**:322-
Streptococcus faecalis. J. Hyg. Camb. **51**:468-477.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (410)780-5120 or fax us at (410)780-5470.