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TECHNICAL PRODUCT INFORMATION

MacConkey Broth – 10 mL w/Durham Tube Catalog No: T1520
MacConkey Broth – 5 mL Catalog No: T1521

INTENDED USE:

MacConkey Broth is used cultivating gram negative, lactose fermenting bacilli and as a presumptive test for coliform organisms. This broth may be used for the presence of coliform organisms in food, water, milk and other materials of sanitary importance. MacConkey Broth conforms to Harmonized USP/EP/JP requirements.

HISTORY/SUMMARY:

MacConkey Broth is a modification of the medium developed by MacConkey which contained 0.5% sodium taurocholate and litmus as an indicator. ¹ The presence of Oxgall replaces the sodium taurocholate to inhibit gram positive organisms.

PRINCIPLES:

Enzymatic (Pancreatic) Digest of Gelatin provides the nitrogen, amino acids and vitamin sources. Lactose is the carbon energy source for gram negative lactose fermenting bacilli. Oxgall, a mixture of bile salts, inhibits the growth of gram positive organisms. Bromcresol purple is the pH indicator, Lactose fermenting coliform bacteria produce acid, which is indicated by a yellow color change of the medium, and gas, as shown by the displacement of the liquid in a portion of the Durham tube.

FORMULA:

COMPONENT (per liter of purified water)	AMOUNT
Oxgall	5.0 g
Pancreatic Digest of Gelatin (Peptone)	20.0 g
Lactose	10.0 g
Bromcresol Purple	0.01 g

Final pH: 7.3 ± 0.2 @ 25°C

PRECAUTIONS:

This medium may be used for In Vitro Diagnostic Use. If inoculated with isolates from clinical specimens it should be handled with caution by adequately trained personnel under the supervision of a microbiologist. Media showing signs of deterioration or contamination must not be used. Inoculated tubes must be autoclaved before discarding. Media must be brought to room temperature before use.

STORAGE:

This medium should be stored in an upright position at 2-30°C. Adequate storage prolongs the life and quality of the product. Freezing and overheating will cause deterioration of the medium. This product should not be used beyond its expiration date. Expiration dates apply to unopened tubes and packages, which have been adequately stored.

PROCEDURE:

1. Media is brought to room temperature before use.
2. Inoculate tubes with the test specimen.
3. Incubate tubes for 18-24 hours at 35 ± 2°C in an aerobic atmosphere.
4. Observe for growth, color change and gas reactions.

EXPECTED RESULTS:

Tubes displaying gas in the Durham tube accompanied by a yellow color of the medium represent a presumptive positive test for coliforms in the test specimen.

Non fermenting organisms will produce good growth, but not acid or gas reactions.

PERFORMANCE CHARACTERISTICS:

ORGANISM	REACTION		
	GROWTH	ACID (Yellow) No change (Purple)	GAS Positive or Negative
ATCC 25922 <i>Escherichia coli</i>	Growth	Yellow	Positive
ATCC 13048 <i>Enterobacter aerogenes</i>	Growth	Yellow	Positive
ATCC 14028 <i>Salmonella typhimurium</i>	Growth	Purple	Negative
ATCC 25923 <i>Staphylococcus aureus</i>	Inhibited	-----	-----

QUALITY CONTROL:

It is recommended that the user confirm the performance characteristics of this medium. Careful selection of test organisms must be made so maximum information on product suitability is obtained. Proper environmental conditions must be chosen to further warrant effective results.

REFERENCES:

1. MacConkey. 1902. Zentralbl. Bakteriologie. 29:740
2. Manual of BBL Products and Laboratory Procedures, Sixth Edition, P.191.
3. Acumedia 7185 Product Information, MacConkey Broth, Rev 04, February 2012
4. Difco & BBL Manual, Manual of Microbiological Culture Media, 2003, Pages 342-343