Dehydrated Culture Media
Bases / Media Supplements

Technical Information

MacConkey Agar, Modified

Product Code: DM 1051

Application: - MacConkey Agar, Modified is recommended for isolation of *Klebsiella* species from water samples.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	17.000
Proteose peptone	3.000
Bile salts	1.500
Inositol	10.000
Sodium chloride	5.000
Crystal violet	0.001
Neutral red	0.030
Agar	13.500
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

MacConkey Agar is one of the earliest selective and differential medium for cultivation of enteric microorganisms from a large number of clinical specimens [1, 2]. The original medium contains protein, bile salts, sodium chloride and two dyes. The selective action of this medium is due to crystal violet and bile salts, which are inhibitory to most species of gram-positive bacteria. *Klebsiella* species are often associated with coliforms in water supply distribution systems and are present as a major component in industrial wastes of paper mill, textile and other industries. Thom (1970) [3] developed a medium based on MacConkey Agar in which lactose is replaced by inositol with the addition of 100 µg of carbenicillin per ml. Bagley and Seidler (1978) [4] devised a similar medium with only 50µg of carbenicillin per ml. In the modified MacConkey agar medium (DM1051), inositol is incorporated in place of lactose while added carbenicillin makes the medium selective for *Klebsiella* species. Further, this method reduces the necessity for biochemical testing of pure strains; however, preliminary verification of differentiated colonies is recommended.
Peptones are sources of nitrogen and other nutrients. inositol is a fermentable carbohydrate, bile salts and crystal violet are selective agents that inhibit growth of gram-positive organisms.

Methodology

Suspend 50 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure for 15 minutes. Cool to 50°C and aseptically add 50 mg Carbenicillin. Mix well before pouring into sterile Petri plates.

Quality Control

Physical Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.35% Agar gel.

Colour and Clarity of prepared medium

Purplish red coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 5.0% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH Range 6.80-7.20

Cultural Response/Characteristics
DM 1051: Cultural characteristics, after addition of 50 mg Carbenicillin, observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Enterobacter aerogenes ATCC 13048	>=10^3	Inhibited	0%	
Escherichia coli ATCC 25922	>=10^3	Inhibited	**0%**	
Klebsiella pneumoniae ATCC 13883	50-100	luxuriant	>=50%	pink
Salmonella Typhi ATCC 6539	>=10^3	Inhibited	**0%**	
Serratia marcescens ATCC 8100	>=10^3	inhibited	**0%**	

Storage and Shelf Life

Dried media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. MacConkey, 1900, The Lancet, ii: 20.
2. MacConkey, 1905, J. Hyg., 5:333.
3. Thom B. T., 1970, Lancet 2:1033
4. Bagley S. T. , Seidler R. J. , Tablbot H. W. and Morrow J. C., 1978, Appl. Environ. Microbiol., 36:178-185

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