

MacConkey MUG Agar



Medium used for the isolation and cultivation of lactose fermenting or non-fermenting Gram-negative organisms, especially *Escherichia coli* by UV fluorescence.

*Equally use with Fluoro MacConkey Agar (MB-F1028).

• CONTENTS (Liter)

Peptone	20.0 g
Lactose	10.0 g
Bile Salts No.3	1.5 g
Sodium Chloride	5.0 g
Neutral Red	0.03 g
Crystal Violet	0.001 g
MUG	0.1 g
Agar	15.0 g

Final pH = 7.1 ± 0.2 at 25°C

• PROCEDURE

Suspend 51.63 G of powder in 1 L of distilled or deionized water. Heat to boiling until completely dissolved. Sterilize by autoclave at 121°C for 15 minutes. Cool to 45 - 50°C in water bath. Mix well. Pour into petri dishes.

• INTERPRETATION

MacConkey MUG Agar is a medium used for the isolation and cultivation of lactose fermenting or non-fermenting Gram-negative organisms, especially *Escherichia coli* by UV fluorescence. Peptone provides the nitrogen and vitamin sources. Lactose is the fermentable carbohydrate. During lactose fermentation, colonies are surrounded by a zone of acid precipitated bile. Because of this, a local pH drop around the colony and neutral red acts as a pH indicator. In result, lactose fermenting organisms grow as pink or red but non-fermenting organisms do not. Bile salts No.3 and crystal violet inhibit the growth of Gram-positive bacteria. Sodium chloride maintains the osmotic balance. MUG (4-Methylumbelliferyl-β-D-glucuronide) is a fluorescent substrate for β-D-glucuronidase encoded by *Escherichia coli*. The enzyme releases a highly fluorescent compound called 4-methylumbelliferone. It fluoresces blue when the growth of microorganisms is observed by UV. Agar is the solidifying agent.

• TECHNIC

Inoculate the plates with spreading the specimen on surface of medium using a sterile loop. Incubate at 36 ± 1 °C for 18 - 24 hours. Refer appropriate references for recommended test procedure.

• QUALITY CONTROL FOR USE

Dehydrated medium

Appearance: free-flowing, homogeneous

Color: light pink-beige

Prepared medium

Appearance : clear to slightly opalescent

Color: purplish-red

Incubation conditions: 36 ± 1°C / 18 - 24 hours

Microorganism	ATCC	Inoculum CFU	Growth	Characteristics	Bile precipitate	Fluorescence
<i>Escherichia coli</i>	25922	50-100	good	pink colony	+	+
<i>Salmonella typhimurium</i>	14028	50-100	good	colorless colony	-	-
<i>Proteus mirabilis</i>	25933	50-100	good	colorless colony	-	-
<i>Proteus rettgeri</i>	29944	50-100	good	colorless colony	-	-
<i>Enterococcus faecalis</i>	29212	≥10 ³	partially inhibited	-	-	-

• STORE

The powder is very hygroscopic. Store the powder at room temperature, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident. Store prepared medium at 2 - 8°C.

• REFERENCES

1. Trepeta, A., and S.C. Edberg. (1984). J. Clin. Microbiol. 19: 172-174.
2. MacFaddin, J.F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol. 1. Williams & Wilkins, Baltimore, MD.
3. MacConkey, A. 1905. Lactose-fermenting bacteria in feces. J. Hyg. 5:333-379.

• PACKAGE

Cat. No : MB-M1170 MacConkey MUG Agar	500 G
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