

# Violet Red Bile Agar MUG



Medium used for the cultivation and identification of coliforms and *Escherichia coli* from foods and dairy products.

## • CONTENTS (Liter)

Peptone	7.0 g
Lactose	10.0 g
Sodium Chloride	5.0 g
Yeast Extract	3.0 g
Bile Salts No.3	1.5 g
Neutral Red	0.03 g
Crystal Violet	0.002 g
MUG	0.1 g
Agar	15.0 g
Final pH = 7.4 ± 0.2 at 25°C	

## • PROCEDURE

Suspend 41.64 G of powder to 1 L of distilled or deionized water. Heat to boiling until completely dissolved. DO NOT AUTOCLAVE. Cool to 45 - 50°C in water bath. Mix well. Pour into petri dishes.

## • INTERPRETATION

Violet Red Bile Agar MUG is a medium used for the cultivation and identification of coliforms and *Escherichia coli* from foods and dairy products. Peptone is a source of carbon, nitrogen, vitamins and minerals. Lactose fermentation causes an acidification of the medium by the enterobacter with color change of the indicator towards deep red and the bile salts precipitation. Sodium chloride maintains the osmotic balance. Yeast extract provides B-complex vitamins. Bile salts no.3 and crystal violet inhibit the growth of Gram-positive bacteria. Neutral red is a pH indicator. 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 specimen using a sterile loop to the medium. Incubate at 35 ± 2°C for 24 ± 2 hours. Refer appropriate references for recommended test procedure.

## • QUALITY CONTROL FOR USE

### Dehydrated medium

Appearance: free-flowing, homogeneous

Color: reddish beige

### Prepared medium

Appearance: slightly opalescent

Color: reddish purple

Incubation conditions: 35 ± 2°C / 24 ± 2 hours

Microorganism	ATCC	Inoculum CFU	Growth	Characteristics	Fluorescence
<i>Escherichia coli</i>	25922	50-100	good	deep red colonies with bile precipitates	+
<i>Enterobacter aerogenes</i>	13048	50-100	good	pink colonies	-
<i>Staphylococcus aureus</i>	25923	≥10 <sup>3</sup>	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. Store prepared medium at 2 - 8°C.

**• REFERENCES**

1. Christen, Davidson, McAllister and Roth (1993). In Marshall (ed.) Standard methods for the microbiological examination of dairy products, 16th ed American Public Health Association , Washington, DC.
2. Hansen, W., and E. Yourassowsky. (1984). Detection of  $\beta$ -D-glucuronidase in lactose fermenting members of the family Enterbacteriaceae and its presence in bacterial urine cultures. J. Clin. Microbiol. 20:1177
3. Damare, J. M., D. F. Campbell, and R. W. Johnston. (1985). Simplified direct platine method for enhanced recovery of Escherichia coli in food. J. of Food Sci. 50:1736

**• PACKAGE**

Cat. No : MB-V1187 Violet Red Bile Agar MUG	500 G
--	-------