MR-VP Broth

Medium used for the identification and determination of bacteria by means of the methyl red and Voges-Proskauer.

• CONTENTS (Liter)

Pancreatic Digest of Casein	3.5 g
Peptic Digest of Animal Tissue	3.5 g
Dextrose	5.0 g
Potassium Phosphate	5.0 g

Final pH = 7.0 ± 0.2 at 25°C

• PROCEDURE

Suspend 17.0 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. Pour into tubes.

• INTERPRETATION

MR-VP Broth is a medium used for the identification and determination of bacteria by means of the methyl red and Voges-Proskauer. Pancreatic digest of casein and peptic digest of animal tissue provide nitrogen, carbon, vitamins and minerals. Dextrose is a carbohydrate. Potassium phosphate is the buffering agent.

*** MR Test**
MR reaction is based on the organisms producing high level of acid by fermentation of dextrose. The red color is developed immediately by the addition of methyl red, pH indicator.

*** VP Test**
Voges-Proskauer reaction distinguishes organisms that ferment dextrose to acids, acetoin (acetylmethylcarbinol). After 48 hours incubation, Alpha Naphthol Reagent and KOH 40% Reagent (or NaOH 40% Reagent) are added to samples. Positive reaction is highlighted by the formation of a red coloration obtained from acetyl-methyl-carbinol oxidation in the presence of alkali and oxygen.

• TECHNIC

*** MR Test**
Inoculate the fresh cultures to the MR-VP Broth. Incubate at 35 ± 2°C for 5 days. Add 5 drops of methyl red reagent (MR Test (MB-MR-100)) to 5 mL of broth culture. Observe the development of red color immediately after the addition of reagents.

*** VP Test**
Inoculate the fresh cultures to the MR-VP Broth. Incubate at 35 ± 2°C for 48 hours. Add 15 drops of Alpha Naphthol Reagent and 5 drops of KOH 40% Reagent (VP Test EP (MB-80281)) or NaOH 40% Reagent (VP Test-Reagent (MB-80280)) to 3 mL of broth culture. Vortex the tube gently for several seconds. Observe the development of red color within 15 minutes up to 1 hour after the addition of reagents.

Refer appropriate references for recommended test procedure.

• QUALITY CONTROL FOR USE

Dehydrated medium
Appearance: free-flowing, homogeneous
Color: light beige
Prepared medium
Appearance: clear
Color: light amber
Incubation conditions: 35 ± 2°C / 5 days for MR Test
35 ± 2°C / 48 hours for VP Test

Microorganism	ATCC	MR Test	VP Test EP VP Test-Reagent
Enterobacter aerogenes	13048	-	+
Enterobacter cloacae	7256	-	+
Klebsiella pneumoniae	27736	-	+
Citrobacter freundii	8090	+	-
Escherichia coli	25922	+	-

• 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. Barn, M.M. (1986). J. Pathot. Bacteriol. , 42 : 441.
2. Edwards, P.R., and V.H. Ewing (1965). Identification of Enterobacteriaceae.
3. ISO 6785: 2001. IDF 93: 2001. Milk and milk products- Detection of Salmonella spp

• PACKAGE

Cat. No : MB-M1032 MR-VP Broth	500 G