

MR-VP BROTH

Medium for Gram-negative bacteria differentiation, recommended by ISO 6785: 2001 and IDF 93: 2001.

TYPICAL FORMULA (g/l)

Peptospecial	7.0
Dipotassium Phosphate	5.0
Glucose	5.0
Final pH = 7.0 ± 0.2 at 25 °C.	

DIRECTIONS

Suspend 17.0 g of powder in 1 liter of distilled or deionized water. Heat to boiling until completely dissolved.
Dispense into final tubes. Sterilize in autoclave at 121°C for 15 minutes.

DESCRIPTION

MR-VP BROTH is used for differentiating coliform organisms based on the Methyl Red and Voges-Proskauer tests, as recommended by ISO 6785: 2001 and IDF 93: 2001. The methyl red test is based on the use of a pH indicator to detect acidity when an organism ferments glucose. This is the reason of a development of a red color. The Voges-Proskauer test differentiates microorganisms which ferment carbohydrates to acids from those that ferment them by decarboxylation to acetylmethylcarbinol, which is oxidised to diacetyl by atmospheric oxygen in an environment made basic by KOH. Diacetyl, under the catalytic action of α -naphthol and creatine, is converted into a red complex.

TECHNIQUE

Inoculate MR-VP Broth with growth from a single colony. Incubate at 36 ± 1°C for 48 hours. Transfer 3 ml of MR-VP Broth culture to a clean tube.

VP Test

Prepare the following solutions:

- creatine monohydrate: 0.5 g in 100 ml of distilled water;
- 5% α -naphthol: 5 g in 100 ml of ethyl alcohol 96%.
- 40% KOH: 40 g in 100 ml of distilled water.

To 3 ml of broth culture add 2 drops of creatine solution, 3 drops of α -naphthol solution and 2 drops of KOH solution. Gently shake the tube to expose the medium to oxygen. A positive test is indicated by the development of a pink to bright red coloration 15 minutes after the addition of reagents.

Methyl Red Test

After 5 days of incubation, transfer 5 ml of broth into a clean test tube. Suspend 0.1 g of methyl red in 300 ml of 95% ethyl alcohol, and make up to 500 ml with distilled water. Add 5 drops of methyl red to the broth culture. The reaction is positive if a red coloration develops immediately. A negative reaction is indicated by a yellow color on the surface of the liquid medium.

QUALITY CONTROL

Dehydrated medium

Appearance: free-flowing, homogeneous.

Color: very light beige to light beige.

Prepared medium

Appearance: clear.

Color: light amber.

Incubation conditions: 36 ± 1°C for 24-48 hours.

Microorganism	ATCC	Growth	MR test	VP test
<i>Enterobacter aerogenes</i>	13048	good	-	+
<i>Klebsiella pneumoniae</i>	13883	good	-	+
<i>Escherichia coli</i>	25922	good	+	-



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STORAGE

The powder is very hygroscopic: store the powder at 10-30 °C, 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 tubes 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.

PRESENTATION

Product	REF	
MR-VP BROTH (29.4 l)	610032	500 g
MR-VP BROTH (5.8 l)	620032	100 g

TABLE OF SYMBOLS

LOT	Batch code	 Caution, consult accompanying documents	 Manufacturer	 Contains sufficient for <n> tests	IVD In Vitro Diagnostic Medical Device
REF	Catalogue number	 Fragile, handle with care	 Use by	 Temperature limitation	 Keep away from heat source



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