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-naphtol 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-naphtol: 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-naphtol 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 in 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
Enterobacter aerogenes	13048	good	-	+
Klebsiella pneumoniae	13883	good	-	+
Escherichia coli	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	Σ
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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