TMV 225 - MOTILITY-INDOLE-LYSINE MEDIUM (MIL MEDIUM) (VEG.)

INTENDED USE

For identification of members of *Enterobacteriaceae* on the basis of motility, lysine decarboxylase, lysine deaminase and indole production.

PRODUCT SUMMARY AND EXPLANATION

This medium is prepared by completely replacing animal based peptone with vegetable peptones making the medium free of BSE/TSE risks. MIL Veg Medium is the modification of MIL Medium which is formulated according to Reller and Merrett. It provides 4 differential reactions in a single culture tube. It is recommended to use along with Triple Sugar Iron (TSI) Veg Agar and Urea Veg Agar Base so as to enable initial identification of members of *Enterobacteriaceae*. Cultures are stab-inoculated and incubated at 37°C for 18-24 hours. Motility, lysine deamination and lysine decarboxylation reactions are read before testing indole reaction. Motility is indicated by diffused growth. Non- motile cultures grow along with stab line. Lysine deamination is observed as red or red-brown colour at the top of the medium while decarboxylation shows a purple colour throughout the medium. This colour may vary in intensity, may be a light colour due to reduction of indicator. For testing indole production add 3-4 drops of Kovac's reagent to the medium. A pink to red coloured ring indicates a positive reaction.

COMPOSITION

Ingredients	Gms / Ltr
Veg peptone	10.0
Veg hydrolysate	10.0
Yeast extract	3. 0
L-Lysine hydrochloride	10.0
Dextrose	1. 0
Ferric ammonium citrate	0. 5
Bromo cresol purple	0.02
Agar	2. 0

PRINCIPLE

Veg peptone, veg hydrolysate provides amino acids and other complex nitrogenous substances. Yeast extract is added to supply the B-complex vitamins. Dextrose is a source of energy. Bromocresol purple is a pH indicator which facilitate detection of decarboxylase activity. Due to dextrose fermentation the colour of the medium changes from purple to yellow. The acidic pH also stimulates enzyme activity. The production of amines due to degradation of amino acid elevates the pH and turns the medium at the bottom of the tube to purple. Due to the higher oxygen tension, the upper portion of the tube remains acidic (yellow). Oxidative deamination of lysine yields a compound which reacts with ferric ammonium citrate, giving reddish colour at the top of the medium.

INSTRUCTION FOR USE

- Dissolve 36.52 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense into tubes in 5 ml amounts. Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool the tubes to 45-50°C in an upright position.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder :Yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Appearance of prepared medium :Reddish purple coloured clear to slightly opalescent gel forms in tubes as butts.

pH (at 25°C) :6.6±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Motility	Indole production	Lysine Deaminase	Lysine decarboxylase	Incubation Temperature	Incubation Period
Enterobacter aerogenes	13048	50-100	Positive, growth away from stabline	Negative reaction	Negative	Positive reaction, purple colour	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Positive, growth away from stabline	Positive, red ring at the interface of the medium on addition of kovac's reagent	Negative	Positive reaction, purple colour	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Negative, growth along the stabline	Occasional reaction	Negative	Positive reaction, purple colour	35-37°C	18-24 Hours
Proteus mirabilis	25933	50-100	Positive, growth away from stabline	Negative reaction	Positive reaction, red-brown colour reaction at the top	Negative reaction	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Positive, growth away from stabline	Positive, red ring at the interface of the medium on addition of kovac's reagent	Positive reaction, red-brown colour reaction at the top	Negative reaction	35-37°C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Positive, growth away from stabline	Negative reaction	Negative	Positive reaction, purple colour	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Negative, growth along the stabline	Occasional reaction	Negative	Negative reaction	35-37°C	18-24 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for

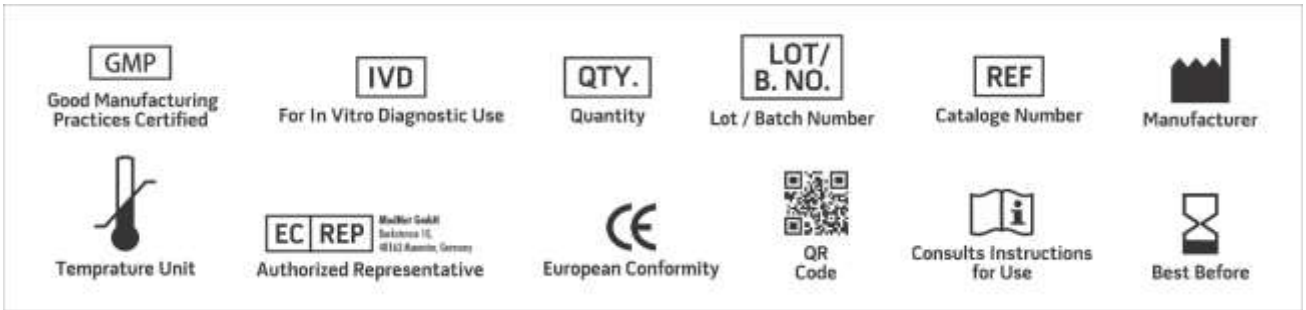
the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Reller and Merrett, 1975, J. Clin. Microbiol., 2:247.
2. Forbes, Salin and Weissfeld, 1998, Bailey and Scott's, Diagnostic Microbiology, 10th ed., Mosby, Inc, St. Louis, MO.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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