TM 226 - MOTILITY MEDIUM S BASE

INTENDED USE

For detection of bacterial motility on the basis of TTC reduction.

PRODUCT SUMMARY AND EXPLANATION

Bacterial motility is an important determinant in making a final species identification. Bacteria translocate by means of flagella, the number and location of which may vary among different species. Interpretation of motility test is done by macroscopic examination of the motility medium for a diffused zone of growth flaring out from the line of inoculation. Motility Medium S Base is formulated as per Ball and Sellers, and is used to determine motility, gelatin liquefaction and nitrate reduction. All the tests can be determined using a single tube.

COMPOSITION

Ingredients	Gms / Ltr
Beef heart, infusion from	500.000
Tryptose	10.000
Gelatin	30.000
Sodium chloride	5.000
Dipotassium phosphate	2.000
Potassium nitrate	2.000
Agar	1.000

PRINCIPLE

Beef heart infusion and tryptose provide nitrogenous compounds, sulphur, carbon and other essential growth nutrients. Sodium chloride maintains osmotic equilibrium. 0.1% agar in presence of 3% gelatin is sufficient to preserve an intact stab line. Nitrate reduction is tested using nitrate reagents after recording motility results. Motility is observed as diffused growth away from the stab inoculation line while non-motile organisms grow along the stab line. The use of TTC aids in the visual detection of bacterial motility. Tetrazolium salts are colourless but are converted into insoluble red formazan complexes by the reducing properties of growing bacteria. Development of this red colour helps to trace the spread of bacteria from the inoculation line. However, these salts may inhibit certain fastidious bacteria and cannot be used in all cases. Potassium nitrate serves as a substrate for nitrate reaction. Organisms capable of reducing nitrate exhibit increased motility in presence of 0.2% potassium nitrate, especially nitrate-reducing obligate aerobes. Phosphate maintains buffering in the medium and it also has a stimulatory effect on motility of *Proteus* species. Organisms having the ability to produce gelatinase digest or liquefy gelatin. Gelatin liquefaction can be determined by placing the test medium tubes in a refrigerator or ice bath, after an incubation at 35-37°C.

INSTRUCTION FOR USE

- Dissolve 60 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at15 psi pressure (121°C) for 15 minutes.
- Cool to 45 - 50°C and add 10 ml of 1% solution of 2, 3, 5-Triphenyl Tetrazolium Chloride (TTC Solution 1%).
- Mix well and dispense in sterile tubes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Yellow coloured clear to slightly opalescent gel forms in tubes as butts.
pH (at 25°C) : 7.3±0.2

INTERPRETATION

Cultural characteristics observed with added 1% TTC solution after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Motility	TTC reduction	Incubation Temperature	Incubation Period
Enterobacter aerogenes	*13048*	50-100	Good-luxuriant	Positive, growth away from stabline causing turbidity	Positive reaction, red to maroon colour	35-37°C	18-24 Hours
Escherichia coli	*25922*	50-100	Good-luxuriant	Positive, growth away from stabline causing turbidity	Positive reaction, red to maroon colour	35-37°C	18-24 Hours
Klebsiella pneumoniae	*13883*	50-100	Good-luxuriant	Negative, growth along the stabline, surrounding medium remains clear	Positive reaction, red to maroon colour	35-37°C	18-24 Hours
Proteus mirabilis	*25933*	50-100	Good-luxuriant	Negative, motility is temperature dependent. It is more pronounced at 20°c and Almost absent at 35°c	Positive reaction, red to maroon colour	35-37°C	18-24 Hours

PACKAGING:

In pack size of 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.

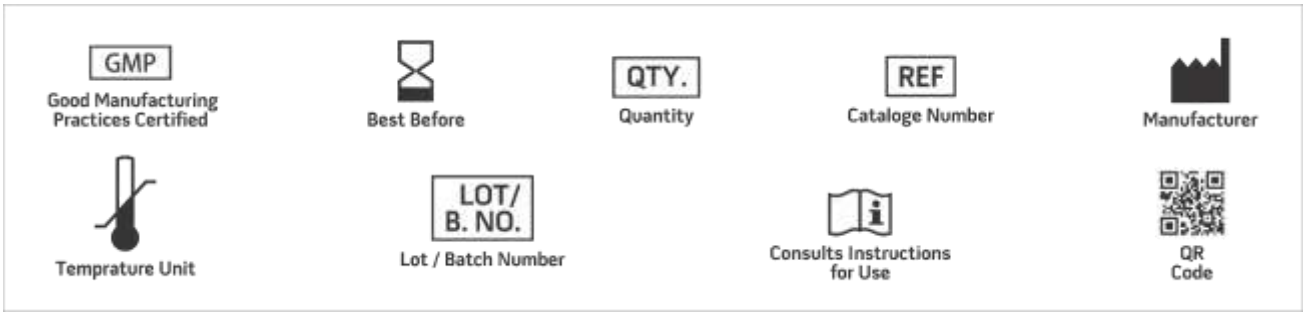
DISPOSAL

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

REFERENCES

1. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippinccott Company

2. Ball R. J. and Seller W., 1966, Appl. Microbiol., 14 (4): 670.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
4. MacFaddin J. F., 2000, Biochemical tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.



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

***For Lab Use Only**

Revision: 08 Nov., 2019