TM 2068 – ENTERIC FERMENTATION BASE

INTENDED USE

Used with added carbohydrate and indicator for differentiating microorganisms based on fermentation reactions.

PRODUCT SUMMARY AND EXPLANATION

Bacteria are differentiated by the carbohydrates they utilize and the types and quantities of acid produced. These differences in enzymatic activity serve as one of the important characteristic by which different species are recognized. This serves as an important criterion in their identification. A variety of different liquid or agar media can be used to measure the ability of test organism to fermentatively utilize carbohydrates. The principle of carbohydrate fermentation is based on Pasteurs studies of bacteria and yeasts, which state that the action of many species of microorganisms on a carbohydrate substrate results in acidification of the medium. The term fermentation is also used in reference to the utilization of carbohydrates by bacteria. Fermentation is an oxidation- reduction metabolic process that takes place in an anaerobic environment, and an organic substrate serves as the final hydrogen (electron) acceptor. This process is detected by observing colour changes in the pH indicator, as acid products are formed.
A basal medium for determining the fermentation reactions of microorganisms must be capable of supporting growth of test organisms and be free from fermentable carbohydrates. Enteric Fermentation Base is prepared according to the formula described by Edwards and Ewing.

COMPOSITION

Ingredients	Gms / Ltr
Beef extract	3.000
Peptic digest of animal tissue	10.000
Sodium chloride	5.000

PRINCIPLE

The medium consists of Beef extract and peptic digest of animal tissue which provides the carbon and nitrogen sources required for good growth of a wide variety of organisms. Sodium chloride maintains the osmotic balance of the medium. The microorganisms tested are differentiated by their ability to ferment a particular carbohydrate that has been added to the Enteric Fermentation Base.

INSTRUCTION FOR USE

- Dissolve 18.0 grams in 1000 ml purified / distilled water.
- Add 10 ml of Andrade's indicator. Heat if necessary to dissolve the medium completely.
- Add the test carbohydrate in desired quantity (0.5% or 1%). Mix well and dispense into tubes containing inverted Durham's tube.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to light tan homogeneous free flowing powder.
Appearance of prepared medium : Light pink coloured, clear solution in tubes.
pH (at 25°C) : 7.2 ± 0.1

INTERPRETATION

Cultural characteristics observed under anaerobic condition after incubation.

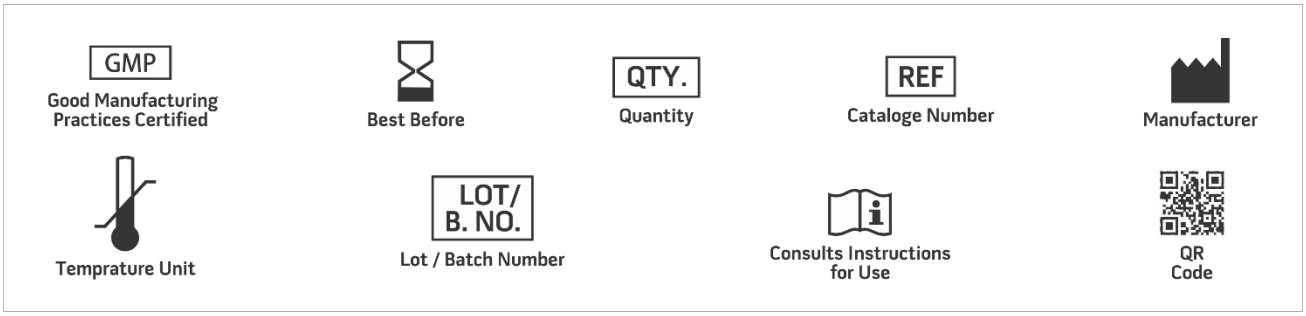
Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Acid without dextrose	Gas without dextrose	Acid with dextrose	Gas with dextrose	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Good	Negative reaction, no colour change or pinkish amber	Negative reaction	Positive reaction, red colour	Positive reaction	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Good	Negative reaction, no colour change or pinkish amber	Negative reaction	Positive reaction, red colour	Positive reaction	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Good	Negative reaction, no colour change or pinkish amber	Negative reaction	Positive reaction, red colour	Negative reaction	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. Ewing, 1986, Edwards and Ewings Identification of Enterobacteriaceae, 4th Edition, Elsevier Science Publishing Co., Inc., New York, N.Y.
2. Forbes B. A., Sahm A. S., and Weissfeld D. F., Bailey & Scotts Diagnostic Microbiology, 10th Ed., 1998, Mosby, Inc., St. Louis, Mo.
3. Holt, Krieg, Sneath, Staley and Williams (Ed.), 1994, Bergeys Manual of Determinative Bacteriology, 9th Ed., Williams & Wilkins, Baltimore, Md.
4. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
5. Edwards and Ewing, 1972, Identification of Enterobacteriaceae, 3rd Ed., Burgess Publishing Co., Minneapolis, Minn.



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

***For Lab Use Only**
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