TM 2077 – FERMENTATION MEDIUM FOR NEISSERIA

INTENDED USE

For studying fermentation reaction of fastidious microorganism such as *Neisseriae*.

PRODUCT SUMMARY AND EXPLANATION

Neisseria species are oxidative i.e. they produce acid from carbohydrate by oxidation. Because these species are oxidative and produce less acid from carbohydrates than do fermentative organisms and because they also produce ammonia from peptones which may neutralize any acid produced from carbohydrates, acid production is determined in a medium with a low protein/carbohydrate ratio and a sensitive indicator such as phenol red.

Fermentation Medium for *Neisseriae* is recommended for studying the fermentation reactions of fastidious organisms such as *Neisseria*. This medium is the modification of the medium originally formulated by Vera. *Neisseria* species oxidize the added carbohydrates to yield acids. The acids thus formed change the colour of the pH indicator, phenol red form orange to yellow. The organism also degrades the peptone source to yield ammonia. The alkalinity thus formed causes the phenol red to change to pink. However, if the acidity formed by carbohydrate metabolism is greater than the alkalinity formed by peptone degradation, the medium remains yellow in colour.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	20.000
L-Cystine	0.500
Sodium chloride	5.000
Sodium sulphate	0.500
Phenol red	0.017
Agar	3.500

PRINCIPLE

The medium consists of Tryptone which supplies the necessary nitrogenous nutrients to the organisms. L-Cystine acts as an amino acid source as well as a reducing agent, which can remove (bind) molecular oxygen thereby preventing the accumulation of peroxides which are lethal to certain microorganisms. Small amount of agar in the medium reduces convection currents in the medium and hence contributes to maintaining anaerobic conditions in the depth of the tubes. Sodium chloride maintains the osmotic equilibrium in the medium. Phenol red is the pH indicator, which turns yellow at acidic pH. Observe the inoculated tubes after every 4 hours.

INSTRUCTION FOR USE

- Dissolve 29.52 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense and Sterilize by autoclaving at 118°C for 15 minutes. The pressure should not exceed 12psi.
- Cool to around 40-45°C and add membrane filter sterilized sugar solutions to final concentration of 1%. (i.e. 5 ml of 20% sugar solution per 100 ml of medium).

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to light pink homogeneous free flowing powder.
Appearance of prepared medium : Straw coloured, clear to slightly opalescent gel forms in tubes as butts.
pH (at 25°C) : 7.5 ± 0.1

INTERPRETATION

Cultural characteristics observed with added 1% dextrose after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Acid with added dextrose	Motility	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	Positive reaction, yellow colour	Positive, growth away from stabline causing turbidity	35-37°C	18-24 Hours
Neisseria gonorrhoeae	19424	50-100	Luxuriant	Positive reaction, yellow colour	Negative, growth along the stabline, surrounding medium remains clear	35-37°C	18-24 Hours
Streptococcus pneumoniae	6303	50-100	Luxuriant	Positive reaction, yellow colour	Negative, growth along the stabline, surrounding medium remains clear	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. Atlas R. M., 2004, Handbook of Microbiological Media, 3rd Ed., CRC Press.
2. Knapp J. S., 1988, Clin. Microbiol., Rev. 1 : 415-431
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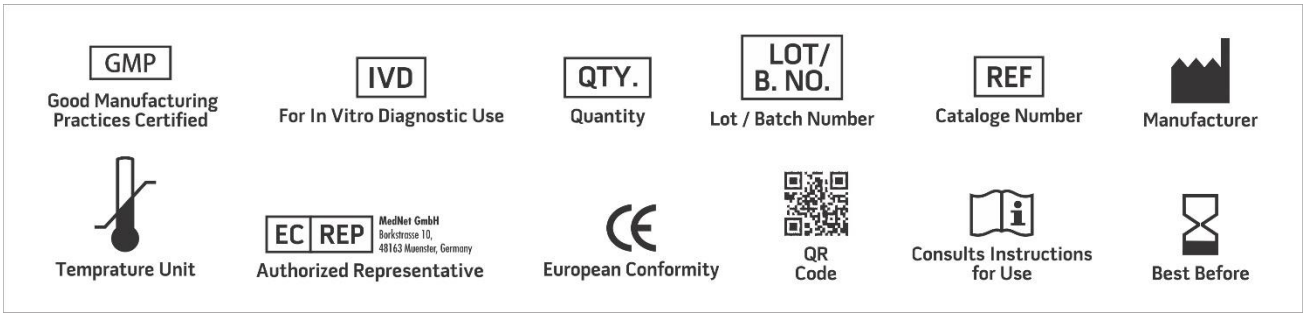
5. Vera, 1948, J. Bacteriol., 55:531.
6. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.



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

***For Lab Use Only**

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