TM 796 – NITRATE AGAR

INTENDED USE
For detection of nitrate reducing bacteria.

PRODUCT SUMMARY AND EXPLANATION
Nitrate Agar is prepared in accordance with the formula published in Pure Culture Study of Bacteria of the Society of American Bacteriologist. The ability to reduce nitrate is valuable for differentiating and identifying various types of bacteria especially Enterobacteriaceae family. Non-fermenters and other miscellaneous gram-negative bacilli vary in their ability to reduce nitrates. Some members of this group are capable of denitrification which is the reduction of nitrate to nitrogen gas. For the glucose fermenting gram-negative bacilli, the production of nitrogen gas from nitrate is an important differential test.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Beef extract	3.000
Potassium Nitrate	1.000
Agar	12.000

PRINCIPLE
Potassium nitrate in the medium acts as a substrate for determining nitrate reduction by bacteria. Certain bacteria convert nitrate to nitrite, ammonia or nitrogen gas. The presence of nitrites can be detected by the addition of 0.5 ml each of sulphanilic acid and alpha-naphthylamine solution. The development of red violet colour, due to the formation of a red diazonium dye i.e. p-sulfobenzene-azo-a-naphthylamine, indicates nitrate reduction to nitrite.
Note: Nitrate reduction is not a confirmatory test. Complete identification of bacteria should include the morphology, gram reaction, biochemical and serological tests. Addition of excess zinc may result in false negative reaction. Also during performance of nitrate reduction test with a-naphthylamine, the colour produced in a positive reaction may fade quickly.

INSTRUCTION FOR USE
- Dissolve 21 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense in tubes and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Allow to cool to 45-50°C the tubes in slanted position.

QUALITY CONTROL SPECIFICATIONS
Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Light amber coloured clear to slightly opalescent gel forms in tubes as slants.
pH (at 25°C) : 6.8 ± 0.2

INTERPRETATION
Cultural characteristics observed after incubation.

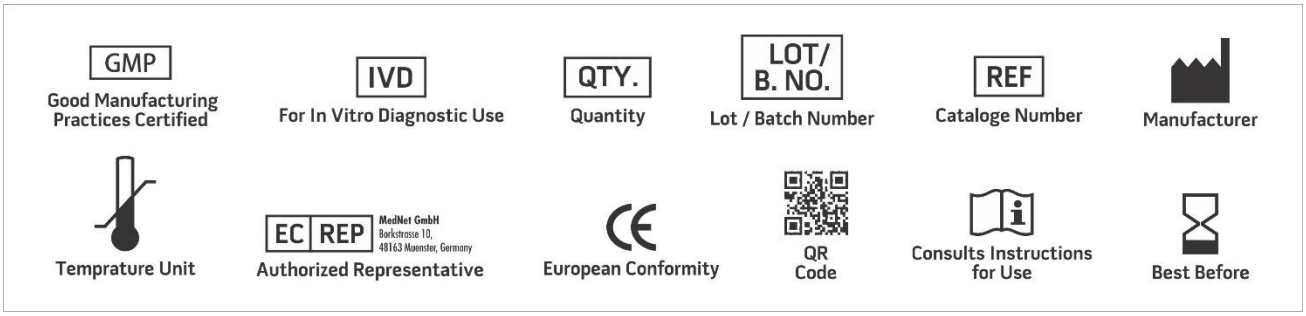
Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Nitrate reduction	Incubation Temperature	Incubation Period
Acinetobacter calcoaceticus	23055	50-100	Luxuriant	Negative reaction	35-37°C	18 - 24 Hours
Escherichia coli	25922	50-100	Luxuriant	Positive reaction, distinct red-pink colour developed within 1-2 minutes	35-37°C	18 - 24 Hours
Enterobacter aerogenes	13048	50-100	Luxuriant	Positive reaction, distinct red-pink colour developed within 1-2 minutes	35-37°C	18 - 24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	Positive reaction, distinct red-pink colour developed within 1-2 minutes	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 ed., Elsevier Science Pub. Co., Inc., N.Y.
2. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.
3. Society of American Bacteriologist, Pure Culture Study of Bacteria, 1944, 12 : Leaflet 11: 8.



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

***For Lab Use Only**

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