

TBL 028 - NITRATE REAGENT DISCS (Double Pack)

INTENDED USE

For detection of nitrate reduction

Part I: Discs

Part II (a): Reagent A

Part II (b): Reagent B

PRODUCT SUMMARY AND PRINCIPLE

The test involves detection of the enzyme nitrate reductase which causes the reduction of nitrate in the presence of a suitable electron donor to nitrite, which can be tested by an appropriate colorimetric reagent. Almost all Enterobacteriaceae reduce nitrate. Nitrate reagent discs when placed on suspected colony turn red-pink in case of nitrate reduction (positive reaction), when a drop or two of Part B (Rehydrating fluid) is added to the disc. Reduction of nitrate (NO₃) to nitrite (NO₂) and subsequently to nitrogen gas (N₂) usually takes place under anaerobic conditions, in which an organism derives its oxygen from nitrate. Most facultative anaerobes can reduce nitrate in the absence of oxygen. This anaerobic respiration is an oxidation process in which inorganic substances furnish oxygen to serve as an electron acceptor to provide energy. The end product possibilities of nitrate reduction are many depending upon the bacterial species. The more common end product via nitrite reduction is molecular nitrogen. Depending upon environmental conditions, these products are usually not further oxidized or assimilated into cellular metabolism, but are excreted into the surrounding medium.

INSTRUCTION FOR USE

Grow test culture on suitable Agar medium plate containing nitrate substrate. Place Part A (disc) on suspected colony. Add a drop or two of Part B (Rehydrating fluid) on the disc.

QUALITY CONTROL SPECIFICATIONS

Appearance : Part A: Filter paper discs of 6 mm diameter bearing letters 'Nr' in continuous printing style.
Part B : Light brown coloured solution, may have black suspended particles.

INTERPRETATION

The Nitrate reduction reaction was observed after an incubation at 35-37°C for 18-24 hours, for various bacteria with Nitrate Reagent discs (Part A), soaked with a drop of Part B, using Nitrate Broth (TM 239).

Microorganism	ATCC	Growth	Nitrate Reduction
<i>Escherichia coli</i>	8739	Luxuriant	Positive reaction : red or pink colour formation on addition of nitrate reagent discs.
<i>Enterobacter aerogenes</i>	13048	Luxuriant	Positive reaction : red or pink colour formation on addition of nitrate reagent discs.



<i>Salmonella</i> Typhimurium	14028	Luxuriant	Positive reaction :red or pink colour formation on addition of nitrate reagent discs.
<i>Acinetobacter calcoaceticus</i>	43498	Luxuriant	Negative reaction

PACKAGING:

In pack size of 50 Discs/vl

STORAGE

Store at 2 - 8°C. Use before expiry date on the label.

REFERENCES

- 1.Pelczar M.J. Jr., Reid R.D. (1965), Microbiology, 2nd edn., McGraw-Hill, New York, 567.
- 2.Stanier R.Y., Douderoff M., Adelberg E.A. (1963), The Microbial World, 2nd edition, Prentice - Hall, 116-117.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

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

*For Lab Use Only
Revision: 08 Nov., 2019