

Oxidase Disks

355-3834

DEFINITION

Test for the detection of cytochrome oxidase. This test enables presumptive identification of certain Gram-negative bacteria producing this enzyme (e.g. *Neisseria*, *Pseudomonas* and *Aeromonas*).

PRINCIPLE

In the presence of the cytochrome oxidase, colorless *N,N,N',N'*-Tetramethyl-phenylenediamine dihydrochloride forms a **blue colored** compound.

PRESENTATION

2 x vials of 50 oxidase disk **code 355-3834**

COMPOSITION

Oxidase disks (OX): absorbent-paper disk impregnated with *N,N,N',N'*-Tetramethyl-phenylenediamine dihydrochloride.

STORAGE

The disks stored in the vial, in a dry environment at 2 to 8°C, in the absence of contamination, are stable until the expiration date indicated on the label.

The expiration date only applies to disks contained in intact vials stored as per the manufacturer's instructions. The expiration date and batch number are shown on each packaging.

USE

Using forceps, place an oxidase disk onto a suitable surface e.g. a microscope slide and impregnate with 1 drop of sterile normal saline. Choose a well-separated and representative colony from fresh culture under test.

Remove the chosen colony using a disposable stick or loop. **DO NOT USE metal** loop (except platinum) as this may produce falsely positive reactions.

Gently rub the colony onto the disk and observe for the development of a purple color **within 30 seconds**

READING

- Positive reaction: **dark blue to purple coloration** appearing within 30 seconds.
- Negative reaction: no coloration or coloration after more than 30 seconds.

Distribution of oxidase reaction in bacteria studied:

OXIDASE POSITIVE	OXIDASE NEGATIVE	VARIABLE OXIDASE (positive or negative depending on strain)
<i>Aeromonas</i>	<i>Acinetobacter</i>	<i>Actinobacillus</i>
<i>Alcaligenes</i>	<i>Enterobacteriaceae</i>	<i>Brucella</i>
<i>Branhamella</i>	<i>Xanthomonas</i>	<i>Haemophilus</i>
<i>Bordetella</i>		<i>Pasteurella</i>
<i>Flavobacterium</i>		
<i>Moraxella</i>		
<i>Neisseria</i>		
<i>Pseudomonadaceae</i>		
<i>Vibrionaceae</i> (*)		

(*) With the exception of *V. metschnikovii* oxidase-negative

PERFORMANCE / QUALITY CONTROL TEST

The performance of Oxidase disks is controlled with the aid of the following strains:

STRAINS	RESULTS
<i>Neisseria meningitidis</i> ATCC 13090	+
<i>Pseudomonas aeruginosa</i> ATCC 27853	+
<i>Escherichia coli</i> ATCC 25922	-
<i>Staphylococcus aureus</i> ATCC 25923	-

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MANUFACTURER'S QUALITY CONTROL

Every product manufactured and sold by Bio-Rad is subject to a procedure of quality assurance at all stages, from reception of raw materials through to supply of the end-product. Each batch of finished product undergoes quality control and is sold only if it satisfies the criteria of acceptability.

Records relating to the production and control of each batch are kept on file.

LIMITATIONS OF USE

- Complementary tests are necessary for identification of a precise species
- Insufficient inoculum may generate weak or delayed coloration.
- Use of a metallic loop may cause a false positive reaction (oxidation of reagent). It is recommended that a platinum loop or a fine Pasteur pipette be used for contact with the impregnated disk.
- A false positive may be obtained if the inoculum originates from a coloured medium
- To obtain exploitable results it is essential to work with pure, fresh cultures.

PRECAUTIONS

Respect of Good Laboratory Practice.

BIBLIOGRAPHY

- **MAC FADDIN, J.F.**, Oxidase test, Biochemical Tests for Identification of Medical Bacteria, 154-162.
- **JURTSHUK, P., and Mc QUITTY, D.**, Use of a Quantitative Oxidase Test for Characterizing Oxidative Metabolism in Bacteria. Applied and Environmental Microbiology, 1976, 668-679.
- **NOBRE, G.N., CHARRUA, M.J., and SILVA, M.M.**, The oxidase test in yeasts of medical importance., Med. Microbiol., 1987, 23, 359-361.