

Oxidase Disc

Recommended for detection of oxidase production by microorganisms like *Neisseria*, *Alcaligenes*, *Aeromonas*, *Vibrio*, *Campylobacter* and *Pseudomonas* which give positive reactions and for excluding *Enterobacteriaceae*, which give negative reactions.

REF: BS.1/OX01.050.0050

50 Discs

METHOD PRINCIPLE

Certain bacteria possess either cytochrome oxidase or indophenol oxidase (an iron-containing haemoprotein), which catalyzes the transport of electrons from donor compounds (NADH) to electron acceptors (usually oxygen). In the oxidase test, a colourless dye such as N, N-dimethyl-p-phenylenediamine serves as an artificial electron acceptor for the enzyme oxidase (1). The dye is oxidized to form indophenol blue, a coloured compound. The test is useful in the initial characterization of aerobic gram-negative bacteria of the genera *Aeromonas*, *Plesiomonas*, *Pseudomonas*, *Campylobacter* and *Pasteurella*. Oxidase discs are sterile filter paper discs impregnated with N, N-dimethyl-p-phenylenediamine oxalate, ascorbic acid and α -naphthol. These discs overcome the necessity of daily preparation of fresh reagent. Gordon and McLeod (2) introduced oxidase test for identifying gonococci based upon the ability of certain bacteria to produce indophenol blue from the oxidation of dimethyl-p-phenylenediamine and α -naphthol. Gaby and Hadley (3) introduced a more sensitive method by using N,N-dimethyl-p-phenylenediamine oxalate where all staphylococci were oxidase negative. In a positive reaction the enzyme cytochrome oxidase combines with N,N-dimethyl-p-phenylenediamine oxalate and α -naphthol to form the dye, indophenol blue.

PROCEDURE

Oxidase reaction is carried out by touching and spreading a well isolated colony on the oxidase disc. The reaction is observed within 5-10 seconds at 25-30°C. A change later than 10 seconds or no change at all is considered negative reaction.

PRECAUTIONS AND WARNING

Media to be handled by entitled and professionally educated person. Do not ingest or inhale. Good Laboratory practices and appropriate precautions should be followed in:

Wearing personnel protective equipment (overall, gloves, glasses,).

Do not pipette by mouth.

In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately. Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environment contamination.

S61: avoid release in environment.

For further information, refer to the Oxidase Disc material safety data sheet.

STORAGE AND STABILITY

BioScien Oxidase Disc should be stored between 2 to 8 °C in a firmly closed container. Use before expiry date on the label. Product performance is best if used within stated expiry period.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile Petri dishes
- Sterile test tubes
- Sterile cotton swab
- Incubator
- Autoclave

QUALITY CONTROL

Appearance Filter paper discs of 10 mm diameter

Cultural response Typical oxidase reaction given by 18-48 hour culture observed within 5-10 seconds at 25-30°C.

Organism	Reaction Observed
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	positive : deep purplish blue colouration of disc
<i>Neisseria gonorrhoeae</i> ATCC 19424	positive : deep purplish blue colouration of disc
<i>Escherichia coli</i> ATCC 25922 (00013*)	negative : purplish blue colouration after 10 sec/ no colour change
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	negative : no colour change

REFERENCES

1. Bauer, Kirby, Sherris and Turck, 1966, Am. J. Clin. Path., 45: 493
2. Performance standards of Antimicrobial Disc Susceptibility Tests, M100S, 32nd Ed., CLSI Vol. 42 No.2, Feb-2022.
3. EUCAST, Breakpoint tables for interpretation of MIC's & zone diameters, version 12.0, valid from 01.01.2022.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use		Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		

