Swabzyme™-Oxidase

Oxidase Reagent Swab
Cat. No.: 13-106-50

Intended Use

Swabzyme™-Oxidase is intended for the use in the detection of cytochrome oxidase from colonies grown on selective media, as an aid in the differentiation of oxidase-positive and oxidase-negative bacteria.

Description

Swabzyme™-Oxidase is a swab impregnated with a chromogenic substrate for use in the detection of cytochrome oxidase, a bacterial intracellular enzyme. The **Swabzyme™-Oxidase** is a useful tool when used as a part of an overall scheme for the presumptive identification of *Neisseria* species, which are oxidase-positive.

Principle

The oxidase test is based on the presence of cytochrome oxidase. This enzyme activates the oxidation of reduced cytochrome by molecular oxygen, which in turn acts as the electron acceptor in the terminal stage of the electron transfer system. The oxidation of the chromogenic substrate forms a BLUE/DARK BLUE indophenol compound, which is indicative of a positive result.

Materials Supplied

50 **Reagent Swabs** impregnated with 0.5 % solution of N,N,N',N'-tetramethyl-p-phenylene-diamine-dihydrochloride (TMPD) and 0.1 % ascorbic acid.
1 Material Safety Data Sheet (MSDS)

Recommended Quality Control Organisms and Expected Results

Good laboratory practices include the use of control specimens to ensure proper kit performance. Positive and negative organisms should be tested according to the laboratory's established Quality Control program.

ORGANISM (not supplied)	ATCC#	EXPECTED RESULT
Pseudomonas aeruginosa	27853	Blue/Dark Blue color change
Escherichia coli	25922	No color change

Precautions

Swabzyme™-Oxidase is intended for *IN VITRO* DIAGNOSTIC USE only and should be used by properly trained, qualified laboratory personnel. Normal precautions should be taken against dangers of microbial hazards. Sterilization of all materials used during testing is recommended. The active ingredient, TMPD, may cause local irritation. Avoid contact with skin. Refer to enclosed Material Safety Data Sheet for further information. DO NOT use **Swabzyme™-Oxidase** if visibly wet or dark blue in color.

Sample Only

Storage

Store **Swabzyme™-Oxidase** desiccated and in the original container at 2-8°C. This product should not be used past the expiration date. Protect from light and moisture. Do not use if visibly wet or dark blue in color.

Procedure

1. Allow the **Swabzyme™-Oxidase Reagent Swabs** to come to room temperature (20°-28°C) before using.
2. Remove **Reagent Swab** from its container. Locate a well isolated colony or an area of pure growth and sweep top of growth firmly with top of **Reagent Swab**. Be careful not to scrape up media.
3. Press **Reagent Swab** against wall of petri dish to spread inoculum into the fibers of the swab. Incubate at room temperature (20°-28°C) for up to 60 seconds. View for color formation.
4. A POSITIVE result is indicated by the formation of a BLUE/DARK BLUE color at the area of the swab which contacted the bacteria within 10 seconds. A NEGATIVE result is recorded if there is no color change after 60 seconds.

Note: A positive result with typical *Neisseria* will develop within 10 seconds. A delayed positive result (color development in 10 to 60 seconds) is not typical *Neisseria*.

Interpretation of Results

ORGANISM (not supplied)	ATCC#	EXPECTED RESULT
Pseudomonas aeruginosa	27853	Blue/Dark Blue color change
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Limitations

Oxidase testing should be used as a part of an overall scheme for the presumptive identification of *Neisseria* species. A gram stain must be performed on oxidase positive colonies. Certain oxidase-positive, gram-negative bacilli may grow on selective media and produce colonies similar in morphology to gonococci. Atypical strains or AHU auxotypes of gonococci grow slowly. Examine culture plates daily for at least 72 hours. Typical gonococci cultures should be tested after 24 to 48 hours. Older cultures are not recommended, the color reaction may develop at a slower rate and could be misidentified. The source of the specimen and clinical symptoms are important in proper identification.

Bibliography

1. Lennette, E.H., Barlows, Al, Hausler, W. J., and Truandt, J.P. Manual of Clinical Microbiology 5th. ed. American Society for Microbiology, Washington D.C. 1991.

EY LABORATORIES, INC.
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Orders: 1-800-821-0044
(Outside CA only)
Rev. 6 (3/06)

MATERIAL SAFETY DATA SHEET

Effective Date: March 31, 2006
Revision 6

PRODUCT IDENTIFICATION

Name: Swabzymes™-Oxidase
Catalog Number: 13-106-50

EMERGENCY INFORMATION

EY Laboratories, Inc.
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San Mateo, CA 94401

EMERGENCY PHONE: 650-342-3296

HAZARDOUS COMPONENTS

MATERIAL	CONCENTRATION
N,N,N',N' - tetramethyl-*p*-phenylenediamine Dihydrochloride (TMPD)	< 750 µg / swab

Molecular Formula : $C_{10}H_{16}N_2 \cdot 2HCl$
Formula Weight : 237.2
CAS # : 637-01-4

HEALTH HAZARD INFORMATION

EXPOSURE LIMITS	None established. The toxicological properties of these chemicals have not been thoroughly investigated.
EFFECTS OF OVER EXPOSURE	The chemical may cause local irritation if allowed to contact skin. Irritation may result if affected skin is allowed to contact the eyes or mucous membranes of the nose or mouth.
ROUTES OF EXPOSURE	TMPD may be harmful by inhalation, ingestion, or absorption through the skin. Since the chemical is embedded on the swab the primary route of exposure would be by skin contact with the swab. Contact with the hands may lead to subsequent contact the eyes or mucous membranes.
ADDITIONAL INFORMATION	Specific hazards are also associated with the bacteria being tested. Follow appropriate safety procedures for the handling of micro-organisms.

PHYSICAL CHARACTERISTICS

APPEARANCE	Chemicals dried on a cotton swab.
FORM	White to pale gray-blue swab.
MELTING POINT	222 - 224°C

FIRE AND EXPLOSION HAZARDS

Not considered to be a fire hazard.

EXTINGUISHING MEDIA	Water spray, CO_2, or dry chemical powder.
SPECIAL FIRE FIGHTING NOTE PRECAUTIONS	Wear protective equipment to prevent contact with skin, eyes, and respiratory tract.

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REACTIVITY DATA

STABILITY	Stable. Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and HCl gas are the primary combustion or decomposition products.
HAZARDOUS POLYMERIZATION	Will **NOT** occur.
INCOMPATIBILITY	Strong oxidizing agents and strong bases.

SPILL / LEAK PROCEDURES

MATERIAL RELEASE / SPILL	Avoid contact with material. Clean up spill and place all waste in a bag for disposal. Ventilate area.
WASTE DISPOSAL	Mix material with a combustible solvent and incinerate in a chemical incinerator equipped with an afterburner and scrubber according to all Local, State and federal regulations.

EMERGENCY FIRST AID PROCEDURES

May be harmful if swallowed, inhaled, or allowed to absorb through the skin. Wash contacted area with water for 15 minutes. If inhaled remove to fresh air. Report exposure to the appropriate safety official. Consult physician as necessary. Consult the appropriate medical authority if contact is made with the test bacteria.

SPECIAL HANDLING PRECAUTIONS

VENTILATION	Mechanical exhaust recommended.
EYE PROTECTION	Safety glasses required.
RESPIRATORY PROTECTION	OSHA approved respirator.
PROTECTIVE GLOVES	Required.
ADDITIONAL INFORMATION	Avoid skin contact.

SPECIAL PRECAUTIONS

This material is for in vitro diagnostic use only. It is not intended for food, drug, household, agricultural, or cosmetic use. All materials should be handled only by technically qualified individuals experienced with working with potentially hazardous chemicals. The above information is correct to the best of our knowledge. The user should make independent decisions regarding completeness of the information, based on all sources available. EY Laboratories, Inc. shall not be held liable for any damage resulting from handling or contact with the above product.

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