

Bactident® Oxidase

for the detection of cytochrome oxidase in microorganisms

Not intended for clinical *in vitro* diagnostic use.

Principle

Microbiological method.

Mode of Action

The cytochrome oxidase is an enzyme of the iron porphyrine group which is very widely distributed in nature. It oxidizes the reduced cytochrome c and is thus transformed itself into the reduced and inactive form. Through transfer of the electrons to molecular oxygen the reduced cytochrome oxidase is transformed again into the active form.

In the presence of molecular oxygen the cytochrome oxidase/ cytochrome c-system can oxidize a whole series of organic substances, among them the so-called NaDi reagent (1-naphthol + dimethylparaphenylene diamine) with formation of the condensation molecule indophenol blue.

This reaction is used for the classification and identification of bacteria.

Typical Composition

The reaction zone of a test-strip contains:
N,N-dimethyl-1,4-phenylene diammonium dichloride
0.1 µmol; 1-naphthol 1.0 µmol.

Application

The separate colonies grown on a culture medium or, in the case of pure cultures, an inoculation loop full are being tested. Instead with bacterial mass the reaction may also be performed with a dense bacterial suspension.

See also General Instruction of Use.

Stability

See expiry date.

Only remove the amount of strips needed at the time!
Do not touch the reaction zones of the test strips.
Close receptacle firmly immediately after use. The strips with deep brown coloured reaction zone are unusable. Please store at the specified temperature.

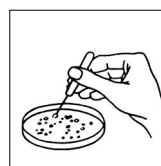
Storage

Store tightly closed in a cool dry place at +2 °C to +8 °C.

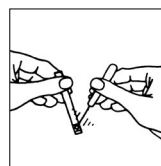
Safe removal

The test strip is to be removed safely after use like bacteria containing material. This may be done by burning, autoclaving or by placing into a 5 to 6% disinfectant solution - for at least 6 hours.

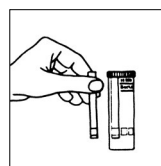
Experimental Procedure



With an inoculating loop take a separate, wellgrown colony from the culture medium.



Apply the colony to the reaction zone and spread with the inoculating loop.



After approx. 20 to 60 seconds compare with the colour scale.

Evaluation

In the case of cytochrome oxidase-positive germs the reaction zone is coloured blue to blue-violet.

Medically important oxidase-positive microorganisms

<i>Neisseria</i> (all species)	<i>Actinobacillus ligniereslii</i>
<i>Aeromonas spp.</i>	<i>Actinobacillus equuli</i>
<i>Pasteurella spp.</i>	<i>Bordetella pertussis</i>
<i>Vibrio spp.</i>	<i>Bac. anthracis</i>
<i>Cardiobacterium hominis</i>	<i>Bac. subtilis</i>
<i>Pseudomonas spp.</i>	<i>Brucella spp.</i>
<i>Flavobacterium spp.</i>	<i>Chromobacterium spp.</i>
<i>Alcaligenes spp.</i>	<i>Eikenella corrodens</i>
<i>Moraxella spp.</i>	<i>Plesionmonas spp.</i>
<i>Campylobacter spp.</i>	<i>Branhamella catarrhalis</i>
<i>Micrococcus spp.</i>	

Oxidase-negative microorganisms

<i>Staphylococcus spp.</i>	<i>Pseudomonas mallei</i>
<i>Streptococcus spp.</i>	<i>Pseudomonas maltophilia</i>
<i>Gemella haemolysans</i>	<i>Bordetella parapertussis</i>
<i>Peptococcus spp.</i>	<i>Actinobacillus</i>
<i>Peptostreptococcus spp.</i>	<i>Actinomycetem-comitans</i>
<i>Leuconostoc spp.</i>	<i>Anaerobier</i> (all species)
<i>Corynebacterium spp.</i>	<i>Haemophilus spp.</i>
<i>Listeria spp.</i>	<i>Pasteurella haemolytica</i>
<i>Lactobacillus spp.</i>	<i>Type T</i>
<i>Bacillus spp.</i>	<i>Streptobacillus</i>
<i>Enterobacteriaceae</i> (all kinds)	<i>Mycoplasma spp.</i>
<i>Acinetobacter spp.</i>	<i>Acholeplasma spp.</i>

Note

It is always recommended to carry out a control test with a negative culture (e.g. *E. coli*), with a weakly positive culture (e.g. *Pasteurella*) and with a strongly positive culture (e.g. *Pseudomonas* or *Aeromonas*). The most suitable cultures for this test are those from culture media without dyes, indicators or inhibitors. Should the bacteria culture itself have a colour, this must be taken into consideration in the assessment of the tests.

Bacterial colonies taken from media with pH values below 5.5 (e.g. after the metabolism of carbohydrates with subsequent acidification of the culture medium) can give a false negative oxidase reaction. In such cases, the microorganisms should be subjected to an intermediate passage on a medium on which the bacteria concerned cannot reduce the pH value below 6.0.

Ordering Information

Product	Ordering No.	Pack contents
Bactident® Oxidase	1.00181.0002	50 test strips

To place an order or receive technical assistance

Order/Customer Service:
SigmaAldrich.com/order

Technical Service:
SigmaAldrich.com/techservice

SigmaAldrich.com/bactident