

Catalase Reagent

Rapid test for the detection of the catalase enzyme.

REF: BS.1/CR06.005.0030

30 test

REF: BS.1/CR01.030.0030

30 test

CLINICAL SIGNIFICANCE

Catalase testing is a rapid technique that can be used for the detection of catalase and can be used in microbiology for the identification and differentiation of catalase producing bacteria, such as *staphylococci*, from non-catalase producing bacteria such as *streptococci*.

METHOD PRINCIPLE

Catalase facilitates the breakdown of hydrogen peroxide into oxygen and water. The presence of catalase in a bacterial isolate is apparent when a small inoculum is introduced into hydrogen peroxide, and the rapid elaboration of oxygen bubbles occurs. The lack of catalase is evident by a lack of or weak bubble production. The culture should not be more than 24 hours old.

REAGENT COMPOSITION

3% H₂O₂ reagent

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using 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 environmental contamination.

S61: avoid release in environment.

For further information, refer to the Catalase Reagent material safety data sheet.

STORAGE AND STABILITY

BioScien Catalase Reagent is stable until expiration date stated on label when properly stored at 2-8°C and kept away from light and changes in temperature. Upon opening the vial, the **BioScien** Catalase Reagent becomes stable for 8 hours ONLY.

PROCEDURE

A- Tube test method

1- Add 1.0 mL of the **BioScien** Catalase Reagent directly to an overnight, inoculated pure agar slant culture. (Do not use blood agar since erythrocytes contain catalase/peroxidase)

2- Observe the bubbles formation for a positive test result.

B- Slide test method

1- Using a sterile inoculating loop or wooden applicator stick, pick the center of a colony obtained from an overnight culture plate and place it on a clean glass slide.

2- Place a drop of the **BioScien** Catalase Reagent (50 µl) onto the smear.

3- Observe immediate bubbles formation. It may be necessary to use a hand lens to detect weakly positive reactions.

SPECIMEN

Sample consists of bacterial growth obtained from a clinical sample or non-clinical sample.

EQUIPMENT REQUIRED NOT PROVIDED

- Inoculating loop/wooden applicator stick
- 18-24 hour inoculated culture media
- Glass slide

RESULT INTERPRETATION

Observation	Test result
Bubbles formation (Oxygen is released)	Positive
No bubbles formation	Negative

QUALITY CONTROL

To ensure adequate quality control, it is recommended that a positive and a negative control should be included.

Organism	Bubbles
<i>Escherichia coli</i> (ATCC 25922)	Negative
<i>Staphylococcus aureus</i> (ATCC 25923)	Positive
<i>Pseudomonas aeruginosa</i> (ATCC 27853)	Positive
<i>Streptococcus pyogenes</i> (ATCC 19615)	Negative

REFERENCES

- 1- MacFaddin JF. Biochemical tests for identification of medical bacteria. 3rd ed. Philadelphia: Lippincott Williams & Wilkins, 2000.
- 2- Isenberg HD, Ed. Clinical microbiology procedures handbook, Vol I. Washington, DC: ASM, 1992.
- 3- Mitchell RL, Anderson IC. Catalase photoactivation. Science 1965; 150:74.
- 4- Chester B, Moskowitz LB. Rapid catalase supplemental test for identification of members of the family Enterobacteriaceae. J Clin Micro 1987; 25:439-41.
- 5- Funada H, Hattori K-I, Kosakai N. Catalase-negative *Escherichia coli* isolated from blood. J Clin Micro 1978; 7:474-8.

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