Technical Data

Catalase Test Kit for Mycobacteria K044

Intended Use:

Recommended to study catalase activity of Mycobacteria.

Kit contains

1. SL122-HiCatalase™ glass tubes w/ 5ml of L.J. medium	5 nos.
2. R057- Catalase buffer 0.5ml (for heat stable catalase study)	5 nos.
3. R058,Catalase Reagent	
Part A : H_2O_2 (30%) &	5ml
Part B : Tween 80 (10%)	5ml

Directions

Reagent preparation :

Mix equal volume of R058, Part A and Part B just before use. Shake gently.

I. Semiquantitative Test

1. Inoculate the surface of SL122, Hicatalase glass tube w/5ml of L.J. Medium with 0.1ml of 7 day liquid culture of the test organism.
2. Incubate at 37°C for two weeks.
3. Note that the caps of the tubes should be slight loose to permit adequate exchange of air.
4. Add one ml of freshly prepared R058, catalase reagent, and leave upright for 5 minutes.
5. Measure the height of column of bubbles/ effervescence above the surface of culture medium and record.

II. Heat stable catalase

The determination of heat stable catalase is a very helpful characteristic in identifying the nonpigmented mycobacteria. Heat labile catalase is a characteristic of *M.tuberculosis*, *M.bovis, M.gastri* and occasional strains of the *M. avium* complex.

1. Emulsify several colonies of test organism in 0.5ml of R057, Catalase buffer provided. Screw the tube.
2. Place the tubes in a waterbath at 68° C for 20 mins.
3. Remove the tube and allow it to cool at room temperature.
4. Add 0.5 ml of freshly prepared catalase reagent, R058.
5. Watch for bubbles on the surface of the fluid.
6. Do not discard as negative until 20 minutes.

Principle And Interpretation

Catalase test kit is an easy test kit used to study catalase activity of Mycobacteria which requires simple addition of the catalase reagent and visual interpretation. Most Mycobacteria produce the enzyme catalase, but they vary in the quantity produced. Heat stable catalase can be detected by inactivating at 68°C for 20 minutes. The semiquantitation of catalase and susceptibility to heating at 68°C, at pH 7.0 are both useful characteristics in identifying Mycobacteria. Organisms producing the enzyme catalase have the ability to decompose hydrogen peroxide into water and free oxygen.

$2H2\ O2 \longrightarrow 2H2O + O2$

The test for mycobacterial catalase differs from that used to detect catalase in other types of bacteria by using 30% hydrogen peroxide in a strong detergent solution (10% Tween 80) instead of the usual 3% hydrogen peroxide solution. The detergent helps to disperse the hydrophobic tightly clumped Mycobacteria from large aggregates to individual bacilli maximizing the detection of catalase.

Type of specimen

Clinical samples : Sputum

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (1,2).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/ eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Well isolated colonies must be used.

Performance and Evaluation

Performace of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Each Kit contents : i) SL122, HiCatalase™ glass tubes w/ 5ml of L.J. Medium 5nos.
ii) R057, Catalase buffer (for heat stable catalase study) 5 nos.
iii) R058, Catalase Reagent; Part A - H_2O_2 (30%) 5 ml Part B - Tween 80 (10%) 5 ml

For Semiquantitative Catalase Test

Add 1 ml of freshly prepared R058 (Part A + Part B), just before use to the test culture inoculated onto on SL122, HiCatalase™ glass tube w/5 ml of L.J.Medium, incubated at 37°C for two weeks.

For Heat Stable Catalase Test

Emulsify several colonies/growth on surface of medium in SL122, in 0.5ml of R057.
Place the tubes in water bath at 68°C for 20min. Remove the tube and allow it to cool to room temp. Add 0.5 ml of freshly prepared R058

Sterility Testing

Passes release criteria

Interpretation

In each of the tests, presence of catalase is indicated by bubbles. Do not shake the tube because a false impression of bubbles can develop from presence of detergent in mixture.

I Semiquantitative

1. A column of bubbles 5 to 50 mm : weakly positive
2. A column of bubbles greater than 50 mm : strongly positive
3. Lack of bubbles : Negative.

II. Heat stable catalase

Development of bubbles : Positive reaction
No Bubbles : Negative reaction

Biochemical Results	For Semiquantitative Catalase Test	For Semiquantitative Catalase Test
Positive	Effervescence seen, column of bubbles (>50 mm)	Effervescence (formation of bubbles) seen on surface of fluid
Weakly Positive	Effervescence seen, column of bubbles (5-50 mm)	
Negative	No effervescence(Lack of bubbles	No Effervescence (lack of bubbles)

Storage and Shelf Life

On receipt store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (1,2).

Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
3. Koneman, W.E et. al. 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott company, Philadelphia.
4. Kubica,CP etal. Differential identification of Mycobacteria: I. tests on catalase activity. Am. Rev. Respir Dis, 95:400-405, 1966.

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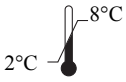
IVD — In vitro diagnostic medical device

CE — CE Marking



Storage temperature

Do not use if package is damaged

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