Niacin Detection Kit, Modified for *Mycobacteria*

K048

This kit is used as screening tool for the presumptive identification of *M.tuberculosis*

Composition**

Ingredients	Gms / Litre
Part A: Reagent (1 ml)	10.000
Part B : Reagent (1 ml)	10.000
R055 : Reagent P (4 ml)	1.000

**Formula adjusted, standardized to suit performance parameters

Directions

Test Sample Preparation:

1. Use only > 3 week old Mycobacterial culture grown on Lowenstein-Jensen Medium Slants showing heavy growth. Cultures grown on other types of media do not produce enough niacin to yield a positive result by this method.

Note : False negative test results, from the use of cultures, with too few organisms or from cultures grown on media other than Lowenstein-Jensen. Do not use this test on cultures that are mixed with other Mycobacteria .

2. Add 2 ml of sterile distilled water or saline to the slant.

3. Cut or stab the slant with a spade or needle.

4. Incubate the slant upright at 370C for 2 hrs.in a water bath. OR The bottle may be just kept horizontally for 20 minutes at room temperature to allow extraction. OR Place the bottle horizontally in the autoclave at 121°C for 30 minutes to allow extraction of niacin into the distilled water.

5. Retain the slant in an upright position for 5 minutes.

6. Use 1 ml of this solution as a test sample.

It is suggested to use1ml capacity syringes for transfer of solutions.

Test :

1. Transfer content of Part A (1ml) to Part B (1 ml). Use this as a reagent solution for further test.

2. Transfer test sample (1 ml) to reagent solution (Part A + Part B) using a syringe.

3. Positive reaction- Development of yellow colour within 5 minutes.

4. Negative reaction- No development of yellow colour within 5 minutes. Reagent solution remains colourless.

Positive control :

1. Transfer content of Part A (1ml) to Part B(1ml). Use this as a reagent solution for further test.

2. Transfer 1 ml of R055 Reagent P to reagent solution (Part A + Part B) using syringe.

3. Observe for development of yellow colour within 5 minutes.

Negative Control:

1. Transfer content of Part A (1 ml) to part B (1 ml) . Use this as a reagent solution for further test.

2. Transfer 1 ml of sterile distilled water or saline into reagent solution (Part A + Part B) using syringe.

3. Colour of solution remains colourless after 5 minutes.

Precautions :

1. The reagents being photosensitive should not be exposed to light.

2. The reagents in Part A and B are toxic and form poisonous gas. Be careful while handling. It is advisable to cover nostrils with a face mask.

3. Do not allow this reagent to come in contact with acid.

4. Part A is carcinogenic. Handle with care. Do not inhale fumes or allow to come in contact with skin.

5. Neutralize tubes by adding 10% NaOH to each tube before discarding.

Perform all work in biological safety cabinet.

Disposal :

Add 10% NaOH to each of the reagent vial and dispose by autoclaving or incineration.

Principle And Interpretation

Mycobacterium tuberculosis and some isolates of *Mycobacterium simiae* and *Mycobacterium chelonae* produce niacin during growth. These strains do not metabolize niacin further and therefore accumulate niacin which is excreted into the agar or slant. Niacin detection test kit detects the accumulated niacin and thus helps in the confirmation of *M.tuberculosis* .

Quality Control

Appearance
Each Kit contains Part A : Reagent (1 ml) 10 vials Part B : Reagent (1 ml) 10 vials R055 : Reagent P (4 ml) 1 vial

Colour and Clarity
Part A, Part B and R055 are clear colourless solutions free of insoluble particles.

Biochemical Test
Transfer 1 ml of R055 Reagent P to reagent solution (Part A + Part B) using syringe,Observe for development of yellow colour within 5 minutes

Biochemical Result
Yellow colour formation within 5 minutes No change in colour within 5 minutes Yellow colour formation within 5 minutes(Positive reaction)

Sterility test
Passes release criteria

Cultural Response

Organism

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label.

Reference

1. Koneman, W.E. etal.1992. Color Atlas and textbook of Diagnostic Microbiology, 4th ed., J.B. Lippincott company, Philadelphia.
2. Clinical Microbiology Procedures Handbook: Henry D. Isenberg, ASM.

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