



pNPG DISKS

- For in vitro use only -

Catalogue No. DP55

Our pNPG Disks are used to identify and differentiate between *Mycobacterium* species based on their ability to hydrolyze the substrate, p-nitrophenyl- β -D-glucopyranoside (pNPG). This rapid test is useful in differentiating:

- *Mycobacterium tuberculosis* (+) from *M. bovis*, including BCG strains (-)
- *Mycobacterium scrofulaceum* (-) from other Runyon group II species (+)

The disk substrate, pNPG, can be cleaved by various *Mycobacterium* enzymes resulting in the release of the yellow chromogenic compound p-nitrophenol.

Recommended Procedure

1. Aseptically add a pNPG Disk to 0.5 mL of sterile de-ionized water (pH=7.0) in a sterile test tube.
2. Heavily inoculate the tube using a 3-week old *Mycobacterium* culture obtained from Lowenstein-Jensen medium.
3. Incubate tube at 37°C.
4. Check for color change hourly for up to four hours.

Interpretation of Results

Positive: Yellow color

Negative: No color change

- *The pNPG substrate tends to be unstable during storage and may undergo spontaneous hydrolysis. Examine disks and initial solution for discoloration*
- *Do not incubate longer than the recommended time period or false positives may occur*

- *Run positive and negative controls to ensure efficacy of the test. The negative control should be a uninoculated tube with a pNPG disk*
- *If the test organism is chromogenic (yellow) centrifuge the suspension prior to interpretation*

Quality Control

| <u>Organism</u> | <u>Expected Results</u> | |
|---|-------------------------|--------------------|
| <i>Mycobacterium fortuitum</i> ATCC 6841 | +ve | Yellow color |
| Uninoculated pNPG solution | -ve | No color change |

Storage and Shelf Life

pNPG Disks should be stored at 4°C to 8°C and protected from light. Under these conditions they have a shelf life of 32 weeks from the date of manufacture.

References

1. David HL, Jahan MT. β -Glucosidase activity in mycobacteria. *J. Clin. Micro.* 5 (1977):3.
2. MacFaddin, JF. *Biochemical Tests for the Identification of Medical Bacteria*, 3rd ed. Philadelphia: Lippincott Williams & Wilkins, 2000.

Original: September 2000

Revised / Reviewed: October 2014