

## TMS 08 – TUBERCULOSIS SECOND LINE KIT

### PRODUCT INFO

With seven antitubular drugs (Kanamycin, Amikacin, Ethionamide, D-Cycloserine, Clarithromycin Ciprofloxacin, p-Amino salicylic acid) + 3 controls

### PRODUCT SUMMARY AND EXPLANATION

Anti-tuberculosis drugs have been used for many decades and resistance to them is now widespread. *M. tuberculosis* may be resistance to one or more drugs. Anti-tuberculosis drug resistance is a major public health problem which arises due to improper and irrational use of anti-tuberculosis drugs in chemotherapy of drug-susceptible tuberculosis patients. This improper use is a result of a number of actions including administration of improper treatment regimens, and failure to ensure that patients complete the whole course of treatment. A patient who develops active disease with a drug resistant tuberculosis strain can transmit this form of tuberculosis to other individuals.

Based on invitro correlation between the clinical response to antimicrobial agent and the result of invitro susceptibility testing kit helps in diagnosing the sensitivity pattern of *M. tuberculosis* affected patient and accordingly provide treatment, drug therapy for the patients.

Mycobacteria susceptibility test can be inoculated either directly from digested and concentrated smear positive sputum (direct test) or from a pure culture of Mycobacteria isolated from a clinical specimen (indirect test). The direct test is usually done only on specimens showing Mycobacteria on smear and give the best results when large no. of Mycobacteria are present. The advantage of the direct test is that a much earlier report of susceptibility studies (3 to 4 weeks) can be made than with indirect test which may take up to 5 to 7 weeks, but can be frequently be complicated by over growth with other bacteria that have survived.

### COMPOSITION

Proprietary

### PRINCIPLE

The seven anti tubular drug slants help in determining resistance of the pathogen against the second line of antibiotics, which are Kanamycin, Amikacin, Ethionamide, D-Cycloserine, Clarithromycin Ciprofloxacin and p-Amino salicylic acid.

### INSTRUCTION FOR USE

Perform all work in Biological safety cabinet. Follow good laboratory procedures when working with Mycobacteria cultures and specimens. For inoculations use calibrated loop or micropipette. Ensure that all the specimen and used slants are immersed in suitable disinfectant or preferably 2% glutaraldehyde for minimum two hours before disposal. The Drug Susceptibility Test is carried out for:

1. Either sputum sample previously subjected to decontamination and concentration process. Inoculate 10- of the processed specimen on slants. OR
2. Pure culture of Mycobacteria isolated from a clinical sample.

### Preparation of inoculum:

- 1) Inoculum is taken from the *M. tuberculosis* growth, primarily isolated on L. J. medium slant.
- 2) Take a loopful of inoculum (aseptically).
- 3) Prepare a suspension of the sample in 1.0ml of sterile distilled water in a screw capped bottle.
- 4) Use the glass beads of 3.0mm diameter for better homogenization and declumping of cells.
- 5) Homogenize the mixture on a vortex mixture up to 10 minutes.
- 6) Make sure the suspension is evenly dispersed.
- 7) Keep the tubes for standing about 10 minutes, before opening the bottle.



- 8) Find out the Optical density of suspension to match McFarland 0.5 standard with saline giving approximately  $1.5 \times 10^8$  cfu/ml.  
9) Later, dilute this suspension to 1:10000.

### QUALITY CONTROL SPECIFICATIONS

|                        |   |                                                                                |
|------------------------|---|--------------------------------------------------------------------------------|
| <b>Appearance</b>      | : | Pale bluish green coloured, smooth slants containing seven antitubular slants. |
| <b>Sterility Check</b> | : | Passes release criteria                                                        |

### INTERPRETATION

Cultural characteristics observed within 2-4 weeks after Incubation at 35-37°C with 5-10% CO<sub>2</sub>.

| Microorganism                           | ATCC  | Inoculum                                                  | Growth on control slant | Colony characteristics on control slants      | Growth on slant w/ antibiotic | Incubation Temperature | Incubation Time |
|-----------------------------------------|-------|-----------------------------------------------------------|-------------------------|-----------------------------------------------|-------------------------------|------------------------|-----------------|
| <i>Mycobacterium tuberculosis</i> H37RV | 25618 | Standardized inoculum giving approximately 1000000 cfu/ml | Luxuriant               | Granular, rough, warty, dry, friable colonies | Inhibited                     | 35-37°C                | 2-4 weeks       |

### PACKAGING:

In pack size of 1 kit

### STORAGE

On receipt, store vials in the dark at 2-8° C. Avoid freezing and overheating. The medium may be used up to the expiration date and incubated for the recommended incubation times. Vials from unopened packages can be used up to the expiration date. Opened vials must be used immediately.

**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, or any other signs of deterioration.

### DISPOSAL

After use, prepared media, specimen/sample containers and other contaminated materials must be sterilized before discarding.

### REFERENCES

- Guidelines for Drug Susceptibility Testing for second - line Antituberculosis drugs for Dots- Plus. WHO/CDS/TB/2001.288.
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- Koneman, E.W et.al., 1992, Color Atlas and Text book of Diagnostic Microbiology, 4th edition, p: 736, J.B. Lippincott Company, Philadelphia.
- John Bernard Henry (ed). 1984, Clinical Diagnosis and Management by Laboratory Methods, Todd, Sandord, Davidsohn, 17th ed., W.B. Saunders, Philadelphia.
- Lutwick L.I. 1995, Tuberculosis; A Clinical Handbook, 1st Edition, Chapman & Hall Medical, New York.
- Collee J.G. Marmin, B.P., Fraser, A.G and Simmons A (eds) Mackie and McCartney, Practical Medical Microbiology, (1996) 14th ed., Churchill Livingstone, New York.



**QTY.**  
Quantity

**LOT/  
B. NO.**  
Lot / Batch Number

  
Temperature Unit

  
Manufacturer

  
Best Before

**GMP**  
Certification of  
Good Manufacturing Practices

**REF**  
Catalogue No.

**EC REP** MedNet GmbH  
Buckhorn 10,  
48163 Münster, Germany  
Authorized Representative

**CE**  
European Conformity

  
Consults Instructions for use :

  
QR  
Code

**IVD**  
For In Vitro Diagnostic Use

**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*For Lab Use Only**  
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