AUTOIMMUN DIAGNOSTIKA GMBH

Supplied by:
Oxford BioSystems
Tel: +44(0)1235 431390
sales@oxfordbiosystems.com
www.oxfordbiosystems.com

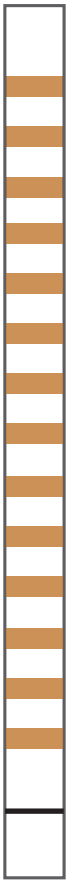
AID GmbH
Ebinger Str. 4
D-72479 Strassberg
Germany
Tel. +49-7434 93640
Fax +49-7434 936440
www.aid-diagnostika.com

TB Resistance Assays

A modular system to detect pathogens of the *Mycobacterium tuberculosis* complex and its most important resistance genes (MDR-, XDR-TB)

Tuberculosis (TB) is the leading cause of death in the world due to bacterial infection. Emerge and spread of resistant strains, such as multidrug-resistant (MDR-TB) or even extreme drug-resistant strains (XDR-TB), pose a serious threat for tuberculosis control efforts. Resistant TB is more difficult to treat than drug-susceptible TB, there are stronger adverse effects, therapy is more expensive and the patient is more likely to stay infectious for a longer period of time. To prevent the spread of resistant TB, fast susceptibility tests are essential since standard tests can take up to several weeks.

TB Resistance Module Isoniazid/Rifampicin (RDB2185)



Conjugate control
Amplification control
***Mycobacterium universal* control**
***Mycobacterium tuberculosis* complex**
Isoniazid wt (*inh*A -16, -15, -8)
Isoniazid mut (*inh*A -16, -15, -8)
Isoniazid wt (KatG 315)
Isoniazid mut (KatG S315T)
Rifampicin wt (RpoB 513-516)
Rifampicin mut (RpoB D516V, D516Y)
Rifampicin wt (RpoB 522-526)
Rifampicin mut (RpoB H526Y, H526D, H526R)
Rifampicin wt (RpoB 529-533)
Rifampicin mut (RpoB S531L, S531W)

The assay was evaluated against a series of clinical *M. tuberculosis* strains:

	resistant	susceptible	others
Isoniazid/Rifampicin	57	13	-
Amikacin/Capreomycin/ Streptomycin/Kanamycin	17	5	5
Fluoroquinolones	43	12	-

The AID TB Resistance kit detected resistance mutations in the clinical strains with **a 100 % accuracy**.

M. tuberculosis strains were isolated from: sputum, tracheal bronchial secret, aspirate, tissue, gastric fluid, BAL, lymph node and urin (Poster Böttger, IMM, University of Zurich, 2011)

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TB Resistance Module Aminoglycoside (RDB2184)

- Conjugate control
- Amplification control
- *Mycobacterium* universal control
- *Mycobacterium tuberculosis* complex
- AMK/CAP wt (*rrs* 1401/02)
- AMK mut (*rrs* A1401G)
- AMK/CAP mut (*rrs* C1402T)
- AMK/CAP wt (*rrs* 1484)
- AMK/CAP mut (*rrs* G1484C/T)
- Streptomycin wt (RpsL 43)
- Streptomycin mut (RpsL A43G)
- Streptomycin wt (RpsL 88)
- Streptomycin mut (RpsL A88G)
- Streptomycin mut (RpsL A88C)
- Streptomycin wt (*rrs* 513-517)
- Streptomycin mut (*rrs* C513T)
- Streptomycin mut (*rrs* A514C)
- Streptomycin mut (*rrs* G515C)
- Streptomycin mut (*rrs* C517T)

TB Resistance Module Fluoroquinolone/ Ethambutol (RDB2187)

- Conjugate control
- Amplification control
- *Mycobacterium* universal control
- *Mycobacterium tuberculosis* complex
- Fluoroquinolone wt (GyrA 90, 91, 94)
- Fluoroquinolone mut (GyrA A90V)
- Fluoroquinolone mut (GyrA S91P)
- Fluoroquinolone mut (GyrA D94A)
- Fluoroquinolone mut (GyrA D94N)
- Fluoroquinolone mut (GyrA D94Y)
- Fluoroquinolone mut (GyrA D94G)
- Ethambutol wt (EmbB 306)
- Ethambutol mut (EmbB M306V)
- Ethambutol mut (EmbB M306I; G918A)
- Ethambutol mut (EmbB M306I; G918C)
- Ethambutol mut (EmbB M306I; G918T)

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References:

Böttger EC. (2011) The AID modular line probe assay for rapid detection of drug resistance against isoniazid, rifampicin, amikacin, capreomycin, streptomycin and fluoroquinolones in *Mycobacterium tuberculosis*. Poster (2011)