



# TB-SNPID

## Drug resistance detection and strain identification of *Mycobacterium tuberculosis* cultured isolates



KIT | Biomedical Research



The emerging epidemic of drug-resistant tuberculosis calls for improved diagnosis and monitoring of circulating *Mycobacterium tuberculosis* strains. The TB-SNPID assay combines detection of up to 47 drug-resistance associated and genotype-specific mutations in the mycobacterial genome in a single assay. Profiles obtained for strains of different genotypes are unique and mutually exclusive, allowing the detection of multiple genotypes in a single sample and offering additional quality control at the same time. The TB-SNPID assay is furthermore very suitable to track strains of particular interest that carry characteristic genetic signatures, e.g. outbreak or epidemic strains or strains that are likely to develop drug resistance. Output of the TB-SNPID assay is digital and thereby portable and compatible to data obtained by other sequence-based methods.

### Benefits

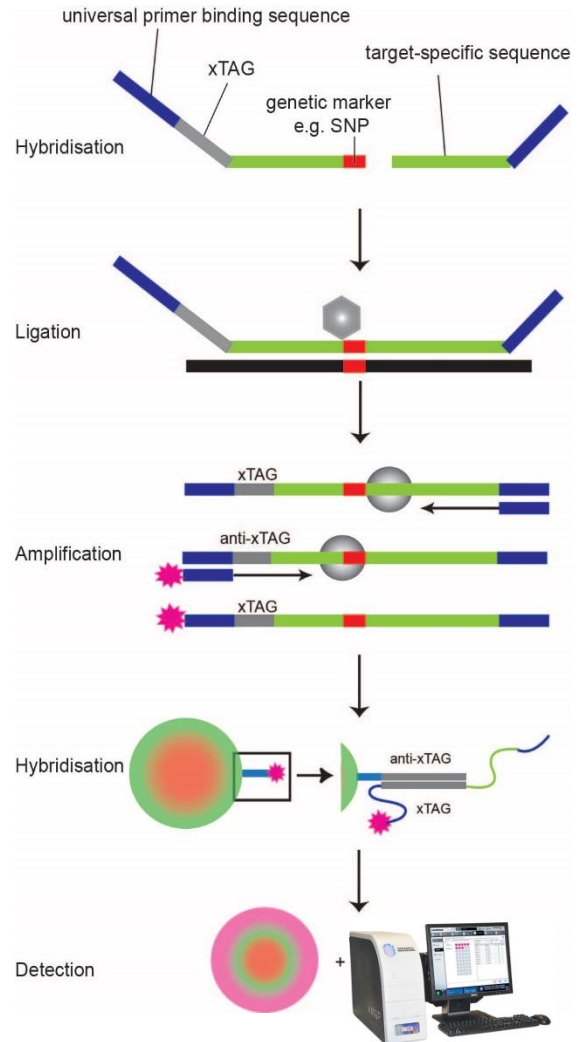
- Detection of first- and second line drug resistance mutations, bacterial lineage and epidemic signature combined in a single assay
- Possibility to detect multiple genotypes in one sample (e.g. mixed infections)
- Obtained data can be easily compared between laboratories and to sequence-based molecular techniques (e.g. next generation sequencing)
- High level of internal quality control by inclusion of multiple assay controls and mutually exclusive unique profiles
- 4-5 hours hands-on-time, < 2 days turn-around-time
- Internal assay controls included (e.g. for DNA quantity and assay performance)

### Applications

- Strain identification of and within the *M. tuberculosis* complex
- Further discrimination within the Beijing genotype
- Identification of non-tuberculous mycobacteria
- Tracking of epidemiologically interesting strains
- Quality control of cultured strains

### Kit composition

- SALSA® MLPA Buffer (MRC-Holland)
- Ligase Buffer A (MRC-Holland)
- Ligase Buffer B (MRC-Holland)
- SALSA® Ligase-65 (MRC-Holland)
- SALSA® Polymerase (MRC-Holland)
- TB-SNPID PCR Primer mix (KIT)
- TB-SNPID Probemix (KIT)
- TB-SNPID Beadmix (KIT)
- TB-SNPID Positive Control (KIT)
- TB-SNPID Negative Control (KIT)



**Principles of the TB-SNPID assay.** Presence of targeted markers in the mycobacterial DNA is represented by conditional amplification of sequence-specific probes and detected by dedicated beads carrying unique xTAGs and colors.

