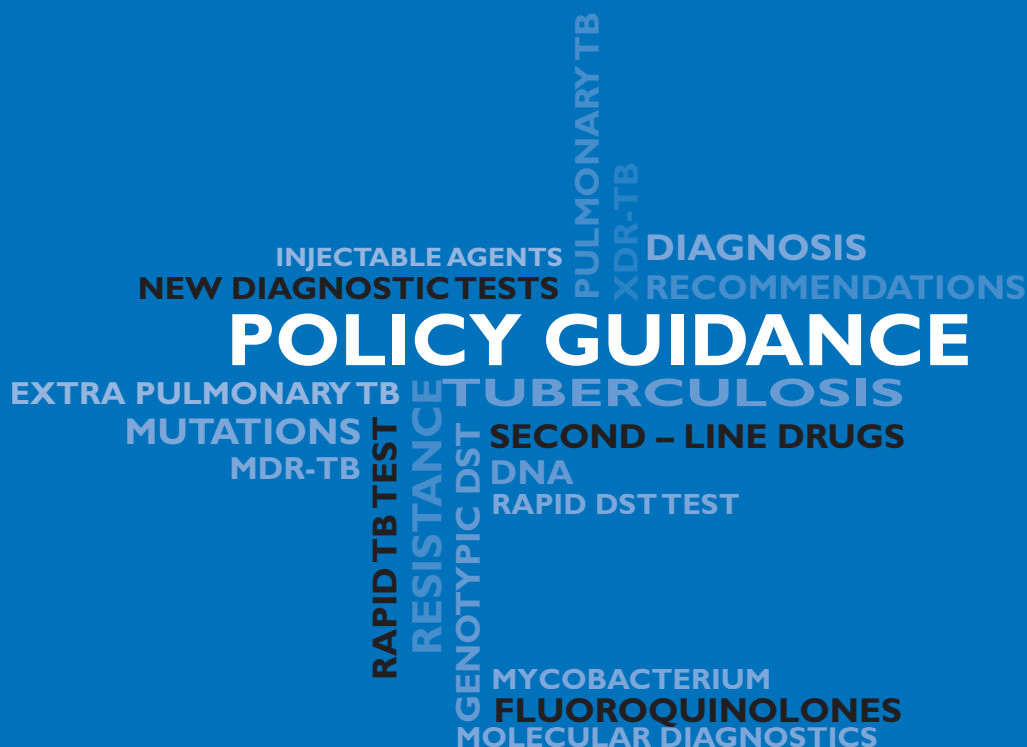


The use of molecular line probe assays for the detection of resistance to second-line anti-tuberculosis drugs



**The use of molecular line probe
assays for the detection of resistance
to second-line anti-tuberculosis
drugs**

Policy guidance

WHO Library Cataloguing-in-Publication Data

The use of molecular line probe assays for the detection of resistance to second-line anti-tuberculosis drugs. Policy guidance.

I. World Health Organization.

ISBN 978 92 4 151613 6

This publication was originally published under ISBN 978 92 4 151056 1

Subject headings are available from WHO institutional repository

© World Health Organization 2016

All rights reserved. Publications of the World Health Organization are available on the WHO web site (www.who.int) or can be purchased from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int).

Requests for permission to reproduce or translate WHO publications –whether for sale or for non-commercial distribution– should be addressed to WHO Press through the WHO website (www.who.int/about/licensing/copyright_form/en/index.html).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Designed by GPS Publishing

Printed in Spain

WHO/HTM/TB/2016.07

Contents

Executive summary.....	1
1. Background	4
2. Methods	8
2.1 Evidence synthesis	8
2.2 Guideline Development Group meeting	10
2.3 External Review Group	11
3. Scope	12
3.1 Target audience.....	12
4. Evidence base for policy formulation.....	13
4.1 Assessment of methodological quality	16
4.2 Accuracy for the detection of fluoroquinolone resistance	17
4.2.1 Direct testing MTBDRs/ version 1.0.....	17
4.2.2 Direct testing MTBDRs/ version 2.0.....	18
4.2.3 Indirect testing MTBDRs/ version 1.0	19
4.2.4 Indirect testing MTBDRs/ version 2.0	22
4.3 Accuracy for the detection of second-line injectable drug (SLID) resistance .	22
4.3.1 Direct testing MTBDRs/ version 1.0.....	22
4.3.2 Direct testing MTBDRs/ version 2.0.....	24
4.3.3 Indirect testing MTBDRs/ version 1.0	24
4.3.4 Indirect testing MTBDRs/ version 2.0	27
4.4 Accuracy for the detection of XDR-TB.....	28
4.4.1 Direct testing MTBDRs/ version 1.0.....	28
4.4.2 Direct testing MTBDRs/ version 2.0.....	28
4.4.3 Indirect testing MTBDRs/ version 1.0	28
4.4.4 Indirect testing MTBDRs/ version 2.0	29
5. Summary of evidence to recommendations.....	30
5.1 SL-LPA for the detection of resistance to fluoroquinolones	30
5.2 SI-LPA for the detection of resistance to SLIDs.....	31
5.3 SL-LPA for the detection of XDR-TB.....	31
6. WHO Policy recommendations	33
7. Implementation considerations	34
7.1 Plans for disseminating the WHO policy guidance on the use of SL-LPA	34

8. Research needs..... 35

9. References to studies for the review of the diagnostic accuracy of SL-LPA 36

10. Annexes..... 38

Annex 1. Meeting participants 38

Annex 2. Members of the External Review Group 39

Annex 3. WHO Steering Group..... 39

Annex 4. Declarations of Interests 40

Tables

Table 1 Characteristics of MTBDRs/ versions 1.0 and 2.0 5

Table 2 Accuracy of MTBDRs/ (version 1.0) for fluoroquinolone and second-line injectable drug resistance and XDR-TB, indirect and direct testing (smear-positive specimens), phenotypic culture-based DST reference standard..... 14

Figures

Figure 1	Examples of different GenoType® MTBDRs/ strip readouts.....	7
Figure 2	Selection of studies evaluating the accuracy of the MTBDRs/ assay for the detection of resistance to the fluoroquinolones and second-line injectable drugs (SLIDs).....	15
Figure 3	Risk of bias and applicability concerns graph: review authors' judgments about each domain presented as percentages across included studies ..	16
Figure 4	Forest plots of MTBDRs/ sensitivity and specificity for fluoroquinolone resistance by direct testing in comparison with a culture-based DST reference standard	17
Figure 5	Forest plots of MTBDRs/ sensitivity and specificity for ofloxacin and moxifloxacin resistance, test performed directly, phenotypic culture-based DST reference standard	18
Figure 6	Forest plots of MTBDRs/ sensitivity and specificity for fluoroquinolone resistance, test performed indirectly, different reference standards	20
Figure 7	Forest plots of MTBDRs/ sensitivity and specificity for ofloxacin, moxifloxacin, and levofloxacin resistance, the test performed indirectly, culture-based DST reference standard	21
Figure 8	Forest plots of MTBDRs/ sensitivity and specificity for SLID resistance, test performed directly, phenotypic culture-based DST reference standard	22
Figure 9	Forest plots of MTBDRs/ sensitivity and specificity for resistance to amikacin, kanamycin, and capreomycin, test performed directly, phenotypic culture-based DST reference standard	23
Figure 10	Forest plots of MTBDRs/ sensitivity and specificity for SLID resistance, test performed indirectly, different reference standards	25
Figure 11	Forest plots of MTBDRs/ sensitivity and specificity for resistance to amikacin, kanamycin, and capreomycin, test performed indirectly, phenotypic culture-based DST reference standard	26
Figure 12	Forest plots of MTBDRs/ sensitivity and specificity for detection of XDR-TB, the test performed directly, culture-based DST reference standard.	27
Figure 13	Forest plots of MTBDRs/ sensitivity and specificity for detection of XDR-TB, test performed indirectly, different reference standards	29

Abbreviations

AFB	acid-fast bacilli
CI	confidence interval
CRS	composite reference standard
DOI	Declaration of Interests
DST	drug-susceptibility testing
GRADE	Grading of Recommendations Assessment, Development and Evaluation
GDG	Guideline Development Group
HIV	human immunodeficiency virus
MDR-TB	multidrug-resistant tuberculosis
NAAT	nucleic acid amplification test
PCR	polymerase chain reaction
PICO	Population, Intervention, Comparator, Outcome
QUADAS	Quality Assessment of Diagnostic Accuracy Studies
RR-TB	rifampicin-resistant tuberculosis
SLID	Second-line injectable drug
SL-LPA	Second-line lineprobe assays

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_26881

