

Global In Vitro Antimicrobial Susceptibility Profiles of *Mycobacterium abscessus*: A Systematic Review and Meta-Analysis

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Supplementary Table 1. Keywords used for publication search in PubMed, Scopus, and Embase

Database	Keywords
Pubmed	(NTM OR MOTT OR atypical mycobacterium OR atypical mycobacteria OR atypical tuberculous mycobacterium OR non-tuberculous mycobacteria OR nontuberculous mycobacterium OR nontuberculous mycobacteria OR non-tuberculosis OR non-tuberculous OR rapidly growing mycobacteria OR "Mycobacterium abscessus"[Mesh] OR Mycobacterium abscessus subsp. Massiliense OR Mycobacterium abscessus subspecies massiliense) AND ("Anti-Bacterial Agents"[Mesh]) AND ("Microbial Sensitivity Tests"[Mesh])
Scopus	ALL ("atypical mycobacterium" OR "mycobacteria other than tuberculosis" OR "atypic mycobacteria" OR "atypic mycobacterium" OR "atypical mycobacterium" OR "atypical mycobacteria" OR "environmental mycobacteria" OR "environmental mycobacterium" OR "mycobacteria, atypical" OR "mycobacterium, atypical" OR "non-tuberculous mycobacteria" OR "non-tuberculous mycobacterium" OR "nontuberculous mycobacteria" OR "nontuberculous mycobacterium" OR "mycobacterium abscessus" OR "mycobacterium abscessus" OR "mycobacterium chelonae subsp. abscessus" OR "mycobacterium massiliense" OR "mycobacterium abscessus ssp. bolletii" OR "mycobacterium abscessus ssp. massiliense" OR "mycobacterium abscessus subsp. bolletii" OR "mycobacterium abscessus subsp. massiliense" OR "mycobacterium bolletii" OR "mycobacterium massiliense") AND ALL ("antiinfective agent" OR "anti bacterial agent" OR "anti bacterial agents" OR "anti infective agents" OR "anti infectives, otic" OR "anti-bacterial agents" OR "anti-infective agents" OR "anti-infectives, otic" OR "antibacterial" OR "antibacterial agent" OR "antibacterial drug" OR "antibacterial spectrum" OR "antiinfective agent" OR "antiinfectives, otic" OR "antimicrobial" OR "antimicrobial agent" OR "antimicrobial compound" OR "antimicrobial drug" OR "antimicrobial factor" OR "chemotherapeutic agent" OR "chemotherapeutic drug" OR "chemotherapeutica" OR "microbiological agent") AND ALL ("drug sensitivity" OR "drug sensitivity" OR "drug sensitivity test" OR "drug susceptibility" OR "susceptibility, drug")
Embase	('atypical mycobacterium'/exp OR 'mycobacteria other than tuberculosis' OR 'atypic mycobacteria' OR 'atypic mycobacterium' OR 'atypical mycobacterium' OR 'atypical mycobacteria' OR 'environmental mycobacteria' OR 'environmental mycobacterium' OR 'mycobacteria, atypical' OR 'mycobacterium, atypical' OR 'non-tuberculous mycobacteria' OR 'non-tuberculous mycobacterium' OR 'nontuberculous mycobacteria' OR 'nontuberculous mycobacterium' OR 'mycobacterium abscessus'/exp OR 'mycobacterium abscessus' OR 'mycobacterium chelonae subsp. abscessus' OR 'rapidly growing mycobacteria' OR 'mycobacterium massiliense'/exp OR 'mycobacterium abscessus ssp. bolletii' OR 'mycobacterium abscessus ssp. massiliense' OR 'mycobacterium abscessus subsp. bolletii' OR 'mycobacterium abscessus subsp. massiliense' OR 'mycobacterium bolletii' OR 'mycobacterium massiliense') AND ('antiinfective agent'/exp OR 'anti bacterial agent' OR 'anti bacterial agents' OR 'anti infective agents' OR 'anti-bacterial agents' OR 'anti-infective agents' OR 'antibacterial' OR 'antibacterial agent' OR 'antibacterial drug' OR 'antibacterial spectrum' OR 'antiinfective agent' OR 'antimicrobial' OR 'antimicrobial agent' OR 'antimicrobial compound' OR 'antimicrobial drug' OR 'chemotherapeutic agent' OR 'chemotherapeutic drug' OR 'chemotherapeutica' OR 'microbiological agent') AND ('drug sensitivity'/exp OR 'drug sensitivity' OR 'drug sensitivity test' OR 'drug susceptibility' OR 'susceptibility, drug')

Supplementary Table 2. Characteristics of 114 studies included in the systematic review and meta-analysis

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Wallace et al. 2001	2001	CAMHB	30	3	USA	Pulmonary and Extrapulmonary	PCR-RFLP analysis of <i>hsp65</i> gene
Yang et al. 2003	2003	CAMHB	30	3	Taiwan	Pulmonary and Extrapulmonary	Conventional biochemical tests and 16S rRNA sequencing
Han et al. 2007	2007	NCCLS guideline	NCCLS guideline	NCCLS guideline	USA	Pulmonary and Extrapulmonary	16S rRNA sequencing
Shen GH et al. 2007	2007	CAMHB	30	3 to 5	Taiwan	NA	Conventional biochemical tests and PRA of <i>hsp65</i> gene
Huang YC et al. 2010	2010	CAMHB	30	3 to 4	Taiwan	Pulmonary and Extrapulmonary	NA
Shen GH et al. 2010	2010	CAMHB	30	3 to 5	Taiwan	NA	Conventional biochemical tests and PRA of <i>hsp65</i> gene
Koh et al. 2011	2011	CLSI guideline	CLSI guideline	CLSI guideline	Korea	Pulmonary	PCR-RFLP analysis of <i>rpoB</i> gene and <i>rpoB</i> and <i>hsp65</i> sequencing for subspecies identification
Brown-Elliott et al. 2012	2012	Custom microtiter panel (CLSI guideline)	CLSI guideline	CLSI guideline	USA	Extrapulmonary	PCR-RFLP analysis of <i>hsp65</i> gene
van Ingen et al. 2012	2012	CAMHB	CLSI guideline	CLSI guideline	USA	NA	16S rRNA and <i>rpoB</i> sequencing
Lavollay et al. 2014	2014	CAMHB	30	3	France and Germany	Pulmonary and extrapulmonary	Multilocus sequence typing
Lee MR et al. 2014	2014	Sensititre RAPMYCOI plate (CLSI guideline)	NA	5	Taiwan	Extrapulmonary	Conventional biochemical methods and <i>erm</i> (41) PCR and <i>rpoB</i> and 23S rRNA sequencing
Lee SH et al. 2014	2014	CAMHB	30	3	Korea	NA	PCR of <i>erm</i> (41) gene

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Nie et al. 2014	2014	CLSI guideline	30	3	China	Pulmonary	16S rRNA, <i>rpoB</i> , and <i>hsp65</i> sequencing
Nunes et al. 2014	2014	CLSI guideline	CLSI guideline	CLSI guideline	Brazil	Extrapulmonary	PRA- <i>hsp65</i> restriction pattern and <i>rpoB</i> sequencing
Singh et al. 2014	2014	CAMHB	30	4	France	Pulmonary and extrapulmonary	GenoType Mycobacterium CM line probe assay and MLST
Chu et al. 2015	2015	CAMHB	30	3	Taiwan	Extrapulmonary	MLSA of <i>rpoB</i> , <i>hsp65</i> , and <i>secA</i> gene sequencing
Chua et al. 2015	2015	Sensititre RAPMYCOI plate (CLSI guideline)	CLSI guideline	3	Australia	Pulmonary and extrapulmonary	HPLC and real-time PCR targeting ITS region
Kim SY et al. 2015	2015	CAMHB	CLSI guideline	3	Korea	Pulmonary	MLSA
Pang H et al. 2015	2015	CAMHB	37	3	China	Pulmonary	<i>hsp65</i> , <i>rpoB</i> , and 16S–23S ITS sequencing
Ramírez et al. 2015	2015	CAMHB	30	3	Venezuela	Pulmonary and extrapulmonary	PCR-RFLP analysis of <i>hsp65</i> and <i>erm</i> (41)
Rubio et al. 2015	2015	Sensititre RAPMYCOI plate (CAMHB)	30	3	Spain	Pulmonary and extrapulmonary	<i>rpoB</i> , <i>secA1</i> , <i>sodA</i> , and <i>hsp65</i> sequencing
Tang SS et al. 2015	2015	CLSI guideline	CLSI guideline	CLSI guideline	Singapore	Pulmonary and extrapulmonary	INNOLiPA MYCOBACTERIA v2 assay
Brown-Elliott et al. 2016	2016	CLSI guideline	CLSI guideline	CLSI guideline	USA	NA	PRA of <i>hsp65</i> gene
Kim J et al. 2016	2016	Sensititre RAPMYCOI plate (CAMHB)	30	3	Korea	Pulmonary	GenoType Mycobacterium CM and GenoType Mycobacterium AS line probe assay and <i>hsp65</i> and <i>erm</i> (41) sequencing
Li YM et al. 2016	2016	CAMHB	CLSI guideline	CLSI guideline	China	Pulmonary	16S rRNA, <i>hsp65</i> , and <i>rpoB</i> sequencing

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Mougari et al. 2016	2016	Sensititre RAPMYCOI plate (CLSI guideline)	CLSI guideline	5	France	Pulmonary and extrapulmonary	GenoType Mycobacterium CM line probe assay and <i>hsp65</i> and <i>erm</i> (41) sequencing
Dupont et al. 2017	2017	CAMHB	30	3 to 5	France	NA	NA
Jeong et al. 2017	2017	CAMHB	CLSI guideline	3	South Korea	Extrapulmonary	Reverse blot hybridization assay of the <i>rpoB</i> gene, MSLA 16S rRNA, 16-23S rRNA ITS sequencing
Hatakeyama et al. 2017	2017	CAMHB	37	3 to 5	Japan	Pulmonary and Extrapulmonary	MALDI-TOF MS and 16S rRNA, <i>rpoB</i> , and <i>hsp65</i> gene sequencing
Lee MC et al. 2017	2017	Sensititre RAPMYCOI plate (CLSI guideline)	CLSI guideline	CLSI guideline	Taiwan	Extrapulmonary	<i>secA1</i> , <i>rpoB</i> , and <i>hsp65</i> sequencing
Li B et al. 2017	2017	CLSI guideline	CLSI guideline	3	China	Pulmonary	WGS analysis
Li G et al. 2017	2017	CAMHB	37	3 to 6	China	NA	Multilocus PCR and <i>rpoB</i> , <i>hsp65</i> , ITS, <i>gnd</i> , <i>glpK</i> , <i>secA</i> , and <i>sodA</i> sequencing
Pang Y et al. 2017	2017	CAMHB	37	3	China	NA	MLSA of 16S rRNA, <i>rpoB</i> , <i>hsp65</i> , and 16S-23S rRNA ITS gene sequencing
Vesenbeckh et al. 2017	2017	Middlebrook 7H10 agar	37	NA	Germany	Pulmonary	NA
Zhang Z et al. 2017	2017	CAMHB	37	3	China	Pulmonary	MLST of 16S rRNA, <i>rpoB</i> , <i>hsp65</i> , and ITS gene
Ananta et al. 2018	2018	Sensititre RAPMYCOI plate (CLSI guideline)	30	3 to 5	Thailand	Pulmonary and extrapulmonary	<i>erm</i> (41) sequencing
Compain et al. 2018	2018	CAMHB	30	3 to 5	France	NA	10 housekeeping sequencing
Kobayashi et al. 2018	2018	CAMHB	CLSI guideline	3	Japan	Pulmonary	<i>hsp65</i> , <i>rpoB</i> , and <i>erm</i> (41) sequencing
Kusuki et al. 2018	2018	Dry plate Eiken (KDB1) (CLSI guideline)	30	3	Japan	Pulmonary and extrapulmonary	DDH Mycobacterium kit and MALDI-TOF MS

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Li B et al. 2018	2018	CLSI guideline	CLSI guideline	CLSI guideline	China	Pulmonary	<i>rpoB</i> and <i>erm</i> (41) sequencing
Luo et al. 2018	2018	CAMHB	37	3	China	Pulmonary	16S rRNA, <i>hsp65</i> , <i>rpoB</i> , and 16-23S rRNA ITS sequencing
Shen Y et al. 2018	2018	CAMHB	37	3	China	NA	<i>rrs</i> sequencing
Tang YW et al. 2018	2018	CLSI guideline	30	3 to 5	Singapore	NA	NA
Aono et al. 2019	2019	CAMHB	CLSI guideline	CLSI guideline	Japan	Pulmonary	DDH Mycobacterium "Kyokuto" kit and DNA-DNA hybridization using 16S rRNA, <i>hsp65</i> , and <i>rpoB</i> .
Brown-Elliott et al. 2019	2019	CAMHB	30	3 to 5	USA	Pulmonary and extrapulmonary	<i>rpoB</i> and <i>erm</i> (41) sequencing
Cheng et al. 2019	2019	CAMHB	CLSI guideline	3 to 5	Taiwan	Pulmonary and extrapulmonary	<i>secA1</i> , <i>rpoB</i> , <i>hsp65</i> , <i>erm</i> (41), and <i>rrl</i> sequencing
Cho et al. 2019	2019	CAMHB	CLSI guideline	3	South Korea	Pulmonary	MolecuTech REBA Myco-ID (based on <i>rpoB</i> gene) and nested multiplex PCR and a reverse-hybridization assay (AdvanSure™ Mycobacteria GenoBlot Assay) of the ITS region and PCR of <i>erm</i> (41) gene
Kaushik et al. 2019 (a)	2019	CAMHB	30	3	USA	Pulmonary	16S rDNA sequencing, biochemical testing, or MALDI-TOF MS
Kaushik et al. 2019 (b)	2019	CAMHB	30	3 to 5	USA	NA	<i>erm</i> (41) and <i>rpoB</i> sequencing
Kim DH et al. 2019	2019	CLSI guideline	CLSI guideline	CLSI guideline	South Korea	Pulmonary	NA
Philips et al. 2019	2019	CLSI guideline	CLSI guideline	CLSI guideline	USA	Extrapulmonary	MALDI-TOF MS and 16S rRNA sequencing
Shoen et al. 2019	2019	NA	37	5	USA	NA	<i>rpoB</i> and <i>erm</i> sequencing
Sorayah et al. 2019	2019	Middlebrook 7H9 medium + ADS	32	2	South Korea	NA	NA
Yu et al. 2019	2019	CAMHB	37	3	China	NA	NA
Andrews et al. 2020	2020	Sensititre RAPMYCOI plate (CLSI guideline)	CLSI guideline	CLSI guideline	Canada	Pulmonary and extrapulmonary	NA

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Da Mata-Jardín et al. 2020	2020	CAMHB	30	3	Venezuela	Extrapulmonary	PRA of <i>hsp65</i> gene
Gumbo et al. 2020	2020	NA	NA	NA	USA	NA	NA
Guo Y et al. 2020	2020	Sensititre RAPMYCOI plate (CLSI guideline)	37	3	China	Pulmonary	16S rRNA, <i>rpoB</i> , and <i>hsp65</i> gene sequencing
Kim JH et al. 2020	2020	CLSI guideline	CLSI guideline	CLSI guideline	Korea	Extrapulmonary	MolecuTech REBA Myco-ID kit and 16S rRNA gene, 16S-23S rRNA ITS, <i>hsp65</i> , and <i>rpoB</i> sequencing
Özdemir et al. 2020	2020	Sensititre RAPMYCOI plate (Middlebrook 7H9)	30	3	Europe	Pulmonary	GenoType Mycobacterium CM/AS (Ver 1.0) kit
Shirata et al. 2020	2020	CLSI guideline	30	3	Japan	Pulmonary	<i>hsp65</i> and <i>rpoB</i> sequencing
Teri et al. 2020	2020	Sensititre RAPMYCOI plate (CAMHB)	CLSI guideline	5	Italy	Pulmonary	<i>rpoB</i> sequencing
Wetzstein et al. 2020	2020	Sensititre RAPMYCOI plate (CLSI guideline)	30	3 to 5	Germany	Pulmonary and extrapulmonary	GenoType NTM-DR line probe assay
Zhang H et al. 2020	2020	CAMHB	CLSI guideline	CLSI guideline	China	Pulmonary and extrapulmonary	NA
Asami et al. 2021	2021	CAMHB	30	5	Japan	Pulmonary	DDH mycobacteria "Kyokuto" kit and 16S rRNA, <i>hsp65</i> , and <i>rpoB</i> sequencing
Brown-Elliott et al. 2021	2021	CAMHB	30	3	USA	NA	<i>rpoB</i> and <i>erm</i> (41) sequencing
Chew et al. 2021	2021	Sensititre RAPMYCOI plate (CAMHB)	30	3 to 5	Singapore	Pulmonary and extrapulmonary	MALDI-TOF MS
Fujiwara et al. 2021	2021	CAMHB	CLSI guideline	CLSI guideline	Japan	Pulmonary	MALDI TOF-MS and multiplex PCR
Guo Q et al. 2021	2021	CAMHB	30	3	China	Pulmonary	16S rRNA, ITS, <i>hsp65</i> , and <i>rpoB</i> sequencing

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Kamada et al. 2021	2021	CAMHB	30	3 to 5	Japan	Pulmonary and extrapulmonary	<i>hsp65</i> , <i>rpoB</i> , and <i>sodA</i> sequencing and PCR-based typing of <i>erm</i> (41)
Kim DH et al. 2021	2021	CAMHB	36	3 to 5	Korea	Pulmonary	MLSA of <i>hsp65</i> , the 16S-23S rRNA gene ITS, <i>erm</i> (41), and <i>rpoB</i>
Kwak et al. 2021	2021	Middlebrook 7H9 medium	37	4	Korea	Pulmonary	NA
Liu et al. 2021	2021	Sensititre RAPMYCOI plate (CAMHB)	CLSI guideline	3	China	Pulmonary	MALDI-TOF MS and 16S rRNA, <i>hsp65</i> , <i>rpoB</i> , and ITS sequencing
Wang Y et al. 2021	2021	CAMHB	37	3	China	NA	MLST of 16S rRNA, <i>hsp65</i> , <i>rpoB</i> and 16S-23S rRNA ITS sequencing
Wen et al. 2021	2021	CAMHB	37	3	China	NA	16S rRNA, <i>hsp65</i> , <i>rpoB</i> , and 16–23S rRNA ITS sequencing
Yoshida et al. 2021	2021	CAMHB	30	3	Japan	NA	<i>erm</i> (41) sequencing
Borek et al. 2022	2022	Sensititre RAPMYCOI plate (CAMHB)	30 ± 2	3 to 5	Poland	Pulmonary	GenoType Mycobacterium CM ver. 2.0 and GenoType NTM-DR line probe assays
Brown-Elliott et al. 2022	2022	CAMHB	30	3 to 5	USA	NA	<i>rpoB</i> and <i>erm</i> (41) sequencing
Chen et al. 2022	2022	CAMHB	37	3 to 4	China	Pulmonary and extrapulmonary	<i>rpoB</i> sequencing
He et al. 2022	2022	Sensititre RAPMYCOI plate (CLSI guideline)	30 ± 2	3 to 5	China	Pulmonary	Boao gene chip method or 16S rRNA and <i>hsp65</i> sequencing
Misawa et al. 2022	2022	CAMHB	30	3 to 5	Japan	NA	KANEKA DNA Chromatography Rapidly Growing Mycobacteria Identification Kit
Nicklas et al. 2022	2022	CAMHB	30	3	USA	NA	16S rDNA sequencing, biochemical testing, or MALDI-TOF MS
Schulthess et al. 2022	2022	CAMHB	37	3 to 5	Switzerland	Pulmonary and extrapulmonary	16S rRNA, <i>rpoB</i> , and <i>erm</i> (41) sequencing

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Tsai et al. 2022	2022	NA	NA	NA	USA	Pulmonary and extrapulmonary	NA
Tu et al. 2022	2022	Sensititre RAPMYCOI plate (CAMHB)	30	3 to 5	Taiwan	Pulmonary and extrapulmonary	PRA of <i>hsp65</i> gene
Wang D et al. 2022	2022	Microplates (YK-909) (CLSI guideline)	CLSI guideline	CLSI guideline	China	Pulmonary	MeltPro Myco assay, 16S-23S rRNA ITS sequencing, and MALDI-TOF MS
Zhang H et al. 2022	2022	CAMHB	30, 37	3 to 5	China	Pulmonary and extrapulmonary	16S rRNA sequencing
Zheng H et al. 2022	2022	CLSI guideline	CLSI guideline	3 to 5	China	NA	MALDI-TOF MS
Zhu et al. 2022	2022	CAMHB	37	3	China	NA	16S rRNA, <i>hsp65</i> , <i>rpoB</i> , and 16-23S rRNA ITS sequencing
Burke et al. 2023	2023	Sensititre RAPMYCOI plate (CAMHB)	30	3	Australia	Pulmonary	WGS, 16S rRNA sequencing, and MALDI-TOF MS
Cao et al. 2023	2023	Sensititre RAPMYCOI plate (CAMHB)	30	3	Spain	Pulmonary	GenoType Mycobacteria CM and GenoType NTM-DR line probe assays
Carneiro et al. 2023	2023	CAMHB	CLSI guideline	CLSI guideline	Portugal	NA	GenoType Mycobacterium CM and GenoType NTM-DR line probe assay and WGS analysis
Fröberg et al. 2023	2023	CAMHB	30	3 to 5	Sweden (92) and Germany (6)	NA	GenoType NTM-DR line probe assay
Fujiwara et al. 2023	2023	CAMHB	30	3 to 5	Japan	Pulmonary	DDH method, multiplex PCR, and <i>rpoB</i> sequencing
Gao T et al. 2023	2023	CAMHB	37	3	China	NA	MLSA
Hershko et al. 2023	2023	Sensititre RAPMYCOI plate (CLSI guideline)	30	3 to 5	Israel	NA	MALDI-TOF MS or <i>hsp65</i> sequencing
Kania et al. 2023	2023	Sensititre RAPMYCO2 plate (CAMHB)	30 ± 2	3 to 5	Poland	Pulmonary and extrapulmonary	GenoType NTM-DR VER. 1.0 line probe assay

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Kim KJ et al. 2023	2023	CAMHB	CLSI guideline	3	Korea	Pulmonary and extrapulmonary	AdvanSure Mycobacteria GenoBlot assay, 16S rRNA, <i>rpoB</i> , and <i>hsp65</i> sequencing, and ERM-plus real-time PCR kit
Li A et al. 2023	2023	CAMHB	30	3	China	Pulmonary	NA
Ruedas-Lopez et al. 2023	2023	Sensititre RAPMYCOI plate (CLSI guideline)	CLSI guideline	3	Spain	Pulmonary and extrapulmonary	GenoType NTM-DR line probe assay
Sukmongkolchai et al. 2023	2023	Sensititre RAPMYCOI plate (CAMHB)	30	3 to 5	Thailand	Pulmonary and extrapulmonary	GenoType NTM-DR line probe assay and WGS analysis
Ying et al. 2023	2023	Sensititre RAPMYCOI plate (CLSI guideline)	37	3 to 5	China	Pulmonary	Gene sequencing (Zeesan Biotech)
Zhang R et al. 2023	2023	Middlebrook 7H9 medium + OADC	CLSI guideline	3 to 5	China	Pulmonary and extrapulmonary	PCR-reverse spot hybrid method
Zhang T et al. 2023	2023	CAMHB	37	3	China	Pulmonary	16S rRNA, <i>hsp65</i> , <i>rpoB</i> , and 16S–23S rRNA ITS sequencing
Azranyi et al. 2024	2024	Sensititre RAPMYCOI plate (CLSI guideline)	CLSI guideline	CLSI guideline	Malaysia	Pulmonary and extrapulmonary	GenoType Mycobacterium CM and GenoType Mycobacterium AS line probe assays
Guo W et al. 2024	2024	CLSI guideline	30	3	China	Pulmonary	<i>hsp65</i> and <i>rpoB</i> sequencing
Hu Y et al. 2024	2024	CAMHB	37	3	China	NA	MLSA of 16S rRNA, <i>rpoB</i> , <i>hsp65</i> , and 16S–23S rRNA ITS gene sequencing
Liu X et al. 2024	2024	CLSI guideline	CLSI guideline	5	China	Pulmonary and extrapulmonary	PCR of 16S-23S rDNA ITS and <i>rpoB</i>
Mazzarelli et al. 2024	2024	CAMHB	30	3	Italy	NA	GenoType NTM-DR line probe assay
Ren et al. 2024	2024	Sensititre RAPMYCOI plate (CAMHB)	30	3 to 5	China	Pulmonary and extrapulmonary	<i>rpoB</i> and <i>hsp65</i> sequencing
Wang X et al. 2025	2025	CAMHB	37	3 to 7	China	Pulmonary and extrapulmonary	Capital Bio Mycobacterial Species Identification Array Kit

Study	Year	DST medium/Kit ^a	Incubation temperature (°C)	Incubation duration (Day)	Country	Specimen type	<i>M. abscessus</i> /subspecies identification method
Huang Y et al. 2025	2025	CAMHB	30	3 to 5	USA	Pulmonary and extrapulmonary	PCR
Terschlüssen et al. 2025	2025	CAMHB	30	3 to 7	Europe	Pulmonary and extrapulmonary	WGS analysis
					Japan		
Zheng J et al. 2025	2025	CAMHB	37	3	China	NA	MLSA and comparison, including <i>hsp65</i> , <i>rpoB</i> , and <i>erm(41)</i> gene

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

Abbreviations: DST, drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical and Laboratory Standards Institute; NA, not applicable; MALDI-TOF MS, matrix-assisted laser desorption ionization–time-of-flight mass spectrometry; MLSA, multilocus sequence analysis; MLST, multilocus sequence typing; NCCLS, National Committee for Clinical Laboratory Standards; PCR-RFLP, polymerase chain reaction–restriction fragment length polymorphism; PRA, PCR-restriction analysis; WGS, whole-genome sequencing; DDH, DNA-DNA hybridization.

Supplementary Table 3. In vitro antimicrobial resistance among clinical isolates of *Mycobacterium abscessus* subspecies, with numbers of studies and isolates ^a

Antimicrobial agent	MAB-A			MAB-M			MAB-B			Publication bias (<i>p</i> value)	Heterogeneity test ^b	
	No. of study	No. of isolates	Pooled resistance (95% CI)	No. of study	No. of isolates	Pooled resistance (95% CI)	No. of study	No. of isolates	Pooled resistance (95% CI)		I ² (%)	<i>p</i> value
AMK	30	1896	3.2 (2.0 - 4.4)	29	1312	2.6 (1.5 - 3.6)	13	172	10.0 (1.1 - 18.9)	0.0000	38.34	0.248
CFX	26	1668	13.4 (5.5 - 21.3)	26	1050	16.2 (7.4 - 25.0)	14	207	2.0 (0.2 - 3.8)	0.0020	97.83	0.000
CIP	21	1352	84.1 (76.8 - 91.3)	21	1073	80.1 (71.6 - 88.7)	12	176	77.4 (64.3 - 90.4)	0.0005	95.29	0.704
CLA	32	2011	11.3 (7.8 - 14.7)	27	1291	5.9 (4.0 - 7.8)	15	223	5.3 (1.6 - 9.0)	0.0000	87.34	0.042
ICR	35	2021	77.9 (72.9 - 83.0)	28	1225	5.6 (3.6 - 7.7)	15	183	66.6 (45.8 - 87.5)	0.2935	99.05	0.000
DOX	22	1324	95.8 (93.9 - 97.7)	23	907	93.9 (91.2 - 96.6)	9	126	93.5 (87.6 - 99.4)	0.0000	65.89	0.601
IMP	31	1835	32.4 (20.9 - 43.8)	30	1132	37.2 (24.9 - 49.4)	13	159	32.7 (17.5 - 47.9)	0.4871	98.47	0.835
LZD	29	1655	26.0 (16.2 - 35.8)	28	1007	23.0 (15.0 - 30.9)	14	158	16.9 (6.8 - 27.1)	0.0285	98.01	0.46
MFV	27	1750	78.2 (68.6 - 87.8)	26	1200	82.5 (74.6 - 90.5)	13	198	71.9 (55.9 - 87.8)	0.0382	97.95	0.052
MPM	6	331	70.4 (49.5 - 91.2)	6	150	92.6 (85.2 - 100.0)	0	0	NA	0.0942	96.44	0.049
TMP-SMX	17	1106	90.2 (84.7 - 95.6)	18	797	87.0 (80.3 - 93.6)	8	120	87.4 (75.6 - 99.2)	0.0031	92.63	0.747
TOB	12	817	71.1 (55.5 - 86.7)	12	509	87.1 (78.0 - 96.1)	4	73	98.2 (95.3 - 101.2)	0.0048	98.13	0.000

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b Heterogeneity test between subspecies.

Abbreviations: 95% CI, 95% confidence interval; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; No., number; AMK, amikacin; CFX, cefoxitin; CIP, ciprofloxacin; CLA, clarithromycin; ICR,

inducible clarithromycin resistance; DOX, doxycycline; IMP, imipenem; LZD, linezolid; MFX, moxifloxacin; MPM, meropenem; TMP-SMX, trimethoprim–sulfamethoxazole; TOB, tobramycin.

Supplementary Table 4. In vitro antimicrobial resistance among clinical isolates of *Mycobacterium abscessus* according to World HealthOrganization (WHO) regions, with numbers of studies and isolates ^a

Antimicrobial agent	Region of the Americas			European Region			South-East Asia Region			Western Pacific Region			Publication bias (p value)	Heterogeneity test ^b	
	No. of study	No. of isolates	Pooled resistance (95% CI)	No. of study	No. of isolates	Pooled resistance (95% CI)	No. of study	No. of isolates	Pooled resistance (95% CI)	No. of study	No. of isolates	Pooled resistance (95% CI)		I ² (%)	p value
AMK	7	321	1.6 (0.3 - 3.0)	11	834	3.0 (1.1 - 4.9)	2	211	4.4 (1.2 - 7.7)	35	3990	2.9 (1.9 - 3.8)	0.0000	65.51	0.302
CFX	6	285	8.2 (0.7 - 15.7)	12	876	15.9 (3.5 - 28.2)	2	211	53.7 (-5.1 - 112.6)	28	3198	12.2 (6.9 - 17.6)	0.0000	98.93	0.351
CIP	6	291	87.6 (78.5 - 96.7)	9	602	83.2 (73.3 - 93.2)	2	211	94.3 (84.1 - 104.6)	23	3017	84.0 (77.5 - 90.5)	0.0001	96.48	0.35
CLA	6	242	7.8 (-1.2 - 16.8)	9	765	11.0 (4 - 18.1)	2	211	27.8 (-0.2 - 55.9)	34	3838	9.2 (6.6 - 11.8)	0.0000	95.34	0.572
ICR	3	113	37.4 (22.9 - 52.0)	10	760	66.7 (59.6 - 73.8)	2	211	50.2 (34.4 - 66.0)	27	2757	49.6 (44.4 - 54.9)	0.7237	87.13	0.000
DOX	5	201	98.3 (96.6 - 100.0)	8	506	94.2 (90.3 - 98.1)	2	211	91.5 (87.7 - 95.2)	27	2933	94.2 (92.3 - 96.2)	0.0000	82.03	0.001
IMP	8	349	21.1 (12.3 - 29.8)	13	935	30.4 (15.9 - 44.9)	2	211	78.1 (36.4 - 119.9)	29	2943	36.7 (24.3 - 49.2)	0.8091	99.2	0.019
LZD	6	328	32.1 (11.2 - 53.1)	12	838	12 (4.4 - 19.6)	2	211	54.4 (41.2 - 67.6)	30	3152	25.3 (17.6 - 33.1)	0.0007	98.88	0.000
MFX	6	241	86.7 (73.2 - 100.3)	9	602	79.5 (69.9 - 89.0)	2	211	96.7 (94.3 - 99.1)	29	3043	75.4 (65.6 - 85.2)	0.0014	98.94	0.000
MPM	3	169	73.3 (56.1 - 90.4)	0	0	NA	0	0	NA	5	405	75.5 (55.7 - 95.2)	0.1383	95.62	0.868
TMP-SMX	4	166	91.3 (81.6 - 101.1)	7	440	89.3 (81.7 - 96.9)	2	211	99.3 (98.2 - 100.4)	22	2408	87.4 (82.3 - 92.4)	0.0002	96.22	0.000
TOB	4	145	46.8 (4.7 - 88.8)	3	170	76.7 (57.3 - 96.1)	2	211	96.3 (91.6 - 101.0)	22	2422	67.4 (55.2 - 79.7)	0.0665	99.65	0.000

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.^b Heterogeneity test across WHO regions.

Abbreviations: 95% CI, 95% confidence interval; No., number; AMK, amikacin; CFX, cefoxitin; CIP, ciprofloxacin; CLA, clarithromycin; ICR, inducible clarithromycin resistance; DOX, doxycycline; IMP, imipenem; LZD, linezolid; MFX, moxifloxacin; MPM, meropenem; TMP-SMX, trimethoprim-sulfamethoxazole; TOB, tobramycin.

Supplementary Table 5. In vitro susceptibility of tedizolid and linezolid against clinical *Mycobacterium abscessus* isolates

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	TZD (µg/mL)			LZD (µg/mL)		
						MIC range	MIC50	MIC90	MIC range	MIC50	MIC90
Compain et al. 2018	CAMHB	30	France	MAB	44	1 to 16	2	8	4 to 64	16	64
				MAB-A	15	1 to 16	2	8	8 to 64	16	64
				MAB-B	14	1 to 4	2	4	8 to 64	16	32
				MAB-M	15	1 to 8	4	8	4 to 32	16	32
Tang YW et al. 2018	CLSI guideline	30	Singapore	MAB	130	0.0625 to 8	1	4	0.0625 to >32	8	>32
				MAB-A	43	0.0625 to 8	1	4	0.0625 to >32	8	>32
				MAB-B	5	1 to 8	4	4	8 to >32	32	>32
				MAB-M	82	0.0625 to 8	1	4	0.5 to >32	8	>32
Gumbo et al. 2020	NA	NA	USA	MAB-A	19	>32 to >32	>32	>32	NA	NA	NA
Wen et al. 2021	CAMHB	37	China	MAB ^b	84	0.25 to 32	1	4	0.25 to 32	8	16
				MAB-A	49	0.25 to 4	1	2	1 to 16	8	16
				MAB-M	35	0.25 to 32	1	32	0.25 to 32	8	32
Zhang H et al. 2022	CAMHB	30 and 37	China	MAB	35	0.125 to 8	2	4	0.125 to 8	2	4
Burke et al. 2023	CAMHB	30	Australia	MAB	46	0.5 to 32	2	4	NA	NA	NA
				MAB-A	40	0.5 to 4	2	4	NA	NA	NA
				MAB-M	6	2 to 4	4	4	NA	NA	NA
Fujiwara et al. 2023	CAMHB	30	Japan	MAB-A	40	0.13 to >8	4	>8	NA	NA	NA
Gao T et al. 2023	CAMHB	37	China	MAB	65	0.25 to 8	1	4	1 to 32	4	16
				MAB-A	44	0.25 to 8	1	4	1 to 16	8	16
				MAB-M	21	0.25 to 8	1	2	1 to 32	4	8

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b MIC50 and MIC90 were calculated from reported MIC data.

Abbreviations: TZD, Tedizolid; LZD, Linezolid; DST, Drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical & Laboratory Standards Institute; No., number; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; MIC, Minimal inhibitory concentration; NA, not available; MIC50, Minimal inhibitory concentration required to inhibit the growth of 50% of organisms; MIC90, Minimal inhibitory concentration required to inhibit the growth of 90% of organisms.

Supplementary Table 6. In vitro susceptibility of bedaquiline against clinical *Mycobacterium abscessus* isolates

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Dupont et al. 2017	CAMHB	30	France	MAB ^b	27	0.031 to 0.125	0.062	0.125
				MAB-A	9	0.031 to 0.125	0.062	0.125
				MAB-B	8	0.062 to 0.125	0.125	0.125
				MAB-M	10	0.062 to 0.125	0.062	0.125
Pang Y et al. 2017	CAMHB	37	China	MAB ^b	381	0.016 to >16	0.13	>16
				MAB-A	218	0.016 to >16	0.13	>16
				MAB-M	163	0.016 to >16	0.13	>16
Vesenbeckh et al. 2017 ^c	Middlebrook 7H10 agar	NA	Germany	MAB ^b	20	0.12 to 1	0.5	1
				MAB-A	16	0.25 to 1	0.5	1
				MAB-B	4	0.12 to 0.5	0.25	0.5
Li B et al. 2018	CLSI guideline	CLSI guideline	China	MAB ^b	197	0.007 to 1	0.062	0.25
				MAB-A	163	0.007 to 1	0.125	0.25
				MAB-M	34	0.007 to 0.25	0.062	0.125
Brown-Elliott et al. 2019	CAMHB	30	USA	MAB ^b	104	0.004 to 0.25	0.06	0.12
				MAB-A	76	0.004 to 0.25	0.06	0.12
				MAB-M	10	0.015 to 0.12	0.12	0.12
Kim DH et al. 2019	CLSI guideline	CLSI guideline	South Korea	MAB ^b	132	≤0.016 to 0.5	0.062	0.125
				MAB-A	61	≤0.016 to 0.25	0.062	0.125
				MAB-M	71	≤0.016 to 0.5	0.062	0.25
Sorayah et al. 2019	Middlebrook 7H9 broth	32	South Korea	MAB	17	0.0167 to 0.3777	0.0556	0.2055
Yu et al. 2019	CAMHB	37	China	MAB-A	40	0.008 to >32	0.5	2
Gumbo et al. 2020	NA	NA	USA	MAB-A	19	0.25 to 1	1	1
Asami et al. 2021	CAMHB	30	Japan	MAB-A	70	0.06 to 0.25	0.13	0.25
Chew et al. 2021	CAMHB	30	Singapore	MAB	211	0.008 to 0.25	0.06	0.12

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Nicklas et al. 2022	CAMHB	30	USA	MAB ^b	31	≤0.06 to ≤0.06	≤0.06	≤0.06
				MAB-A	12	≤0.06 to ≤0.06	≤0.06	≤0.06
				MAB-M	9	≤0.06 to ≤0.06	≤0.06	≤0.06
Schulthess et al. 2022	CAMHB	37	Switzerland	MAB	61	≤0.025 to 0.8	0.1	0.2
				MAB-A	32	NA	0.05	0.1
				MAB-M	12	NA	0.1	0.4
				MAB-B	17	NA	0.1	0.2
Zheng H et al. 2022	CLSI guideline	CLSI guideline	China	MAB ^b	74	0.015 to >16	0.125	0.125
				MAB-A	45	0.03125 to >16	0.125	0.25
				MAB-M	29	0.015 to 0.25	0.125	0.125
Zhu et al. 2022	CAMHB	37	China	MAB	40	0.0312 to 0.5	0.125	0.25
Gao T et al. 2023	CAMHB	37	China	MAB	65	<0.031 to 1	0.125	0.25
				MAB-A	44	<0.031 to 1	0.125	0.25
				MAB-M	21	0.031 to 0.13	0.125	0.125
Ying et al. 2023	CLSI guideline	37	China	MAB	46	≤0.12 to 1	≤0.12	0.25
Zhang R et al. 2023	Middlebrook 7H9 broth	CLSI guideline	China	MAB	30	0.004 to 2.048	0.256	1.024
Guo W et al. 2024	CLSI guideline	30	China	MAB-A	139	NA	0.125	0.25
				MAB-M	39	NA	0.125	0.25
Hu Y et al. 2024	CAMHB	37	China	MAB-A	82	NA	0.0625	32
				MAB-M	39	NA	0.0625	32
Wang X et al. 2025	CAMHB	37	China	MAB ^b	189	NA	0.12	0.5
				MAB-A	100	NA	0.12	0.5
				MAB-M	89	NA	0.12	0.5
Zheng J et al. 2025	CAMHB	37	China	MAB ^b	39	0.03 to 0.63	0.06	0.13
				MAB-A	32	0.03 to 0.63	0.06	0.13
				MAB-M	7	0.03 to 0.13	0.06	0.13

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b MIC50 and MIC90 were calculated from reported MIC data.

^c Drug susceptibility testing was performed using the agar proportion method.

Abbreviations: DST, Drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical & Laboratory Standards Institute; No., number; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; MIC, Minimal inhibitory concentration; NA, not available; MIC50, Minimal inhibitory concentration required to inhibit the growth of 50% of organisms; MIC90, Minimal inhibitory concentration required to inhibit the growth of 90% of organisms.

Supplementary Table 7. In vitro susceptibility of clofazimine against clinical *Mycobacterium abscessus* isolates

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Shen GH et al. 2010	CAMHB	30	Taiwan	MAB	117	<0.03125 to 2	0.25	0.5
van Ingen et al. 2012	CAMHB	CLSI guideline	USA	MAB-A	342	NA	≤0.5	1
				MAB-B	48	NA	≤0.5	1
Singh et al. 2014	CAMHB	30	France	MAB	67	2 to 8	2	4
				MAB-A	42	2 to 8	2	4
				MAB-B	4	2 to 4	2	4
				MAB-M	21	2 to 8	2	4
Pang H et al. 2015	CAMHB	37	China	MAB	55	0.06 to >32	0.25	8
Li YM et al. 2016	CAMHB	CLSI guideline	China	MAB	22	0.06 to 16	0.25	4
Li G et al. 2017	CAMHB	37	China	MAB-A	53	NA	0.25	8
				MAB-M	9	NA	128	256
Li B et al. 2018	CLSI guideline	CLSI guideline	China	MAB ^b	197	0.062 to 1	0.5	1
				MAB-A	163	0.062 to 1	0.5	1
				MAB-M	34	0.125 to 1	0.5	1
Luo et al. 2018	CAMHB	37	China	MAB	40	0.031 to >8	4	>8
Shen Y et al. 2018	CAMHB	37	China	MAB	20	0.25 to 128	NA	32
Aono et al. 2019	CAMHB	CLSI guideline	Japan	MAB	85	0.25 to 2	0.5	1
Cheng et al. 2019	CAMHB	CLSI guideline	Taiwan	MAB-A	13	0.5 to 2	1	2
				MAB-M	13	0.5 to 2	2	2
Da Mata-Jardín et al. 2020	CAMHB	30	Venezuela	MAB	63	NA	0.125	0.25
Chew et al. 2021	CAMHB	30	Singapore	MAB	211	0.008 to 1	0.12	0.25
Fujiwara et al. 2021	CAMHB	CLSI guideline	Japan	MAB	86	0.06 to >2	0.5	1
				MAB-A	46	0.06 to 1	0.5	1
				MAB-M	40	0.25 to >2	0.5	1
Kim DH et al. 2021	CAMHB	36	South Korea	MAB-A	64	0.125 to 0.5	0.5	0.5
				MAB-M	67	≤0.062 to 0.5	0.25	0.5

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Kwak et al. 2021	Middlebrook 7H9 broth	NA	Korea	MAB	40	0.31 to 16	4	8
Wang Y et al. 2021	CAMHB	37	China	MAB-A	218	NA	1	8
				MAB-M	163	NA	1	64
Nicklas et al. 2022	CAMHB	30	USA	MAB ^b	31	0.093 to 1	0.25	0.375
				MAB-A	12	0.125 to 0.375	0.25	0.375
				MAB-M	9	0.093 to 1	0.25	1
Schulthess et al. 2022	CAMHB	37	Switzerland	MAB	61	≤0.125 to 2	≤0.125	0.5
				MAB-A	32	NA	≤0.125	0.5
				MAB-M	12	NA	0.25	0.5
				MAB-B	17	NA	≤0.125	0.5
Sukmongkolchai et al. 2023	CAMHB	30	Thailand	MAB	143	0.12 to 0.5	0.25	0.5
				MAB-A	72	0.12 to 0.5	0.25	0.5
				MAB-B	7	0.12 to 0.5	0.25	0.5
				MAB-M	63	0.12 to 0.5	0.25	0.5
Ying et al. 2023	CLSI guideline	37	China	MAB	46	0.12 to >2	0.25	0.5
Zhang R et al. 2023	Middlebrook 7H9 broth	CLSI guideline	China	MAB	26	0.25 to >8	2	8
Guo W et al. 2024	CLSI guideline	30	China	MAB-A	139	NA	0.25	0.5
				MAB-M	39	NA	0.25	2
Hu Y et al. 2024	CAMHB	37	China	MAB-A	82	NA	0.0625	4
				MAB-M	39	NA	0.0625	0.25
Huang Y et al. 2025	CAMHB	30	USA	MAB ^b	43	0.125 to 16	0.5	8
				MAB-A	18	0.125 to 16	0.25	8
				MAB-M	13	0.25 to 8	0.5	8
Terschlüssen et al. 2025 (EU panel)	CAMHB	30	NA	MAB-A	169	NA	0.5	1
				MAB-M	24	NA	0.5	1
Terschlüssen et al. 2025 (Japan panel)	CAMHB	30	Japan	MAB-A	57	NA	1	2
				MAB-M	46	NA	0.5	1

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Wang X et al. 2025	CAMHB	37	China	MAB ^b	189	NA	0.25	0.5
			China	MAB-A	100	NA	0.25	0.5
			China	MAB-M	89	NA	0.25	0.5
Zheng J et al. 2025	CAMHB	37	China	MAB ^b	39	0.13 to 0.5	0.25	0.5
			China	MAB-A	32	0.13 to 0.5	0.25	0.25
			China	MAB-M	7	0.25 to 0.5	0.25	0.5

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b MIC50 and MIC90 were calculated from reported MIC data.

Abbreviations: DST, Drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical & Laboratory Standards Institute; No., number; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; MIC, Minimal inhibitory concentration; NA, not available; MIC50, Minimal inhibitory concentration required to inhibit the growth of 50% of organisms; MIC90, Minimal inhibitory concentration required to inhibit the growth of 90% of organisms.

Supplementary Table 8. In vitro susceptibility of eravacycline, sarecycline, omadacycline, and tigecycline against clinical***Mycobacterium abscessus* isolates**

Study	DST medium ^a	DST temp. (°C)	Country	Subsp.	No. of isolates	TGC (µg/mL) ^c			OMC (µg/mL) ^d			ERC (µg/mL) ^d			SAC (µg/mL) ^d		
						MIC range	MIC50	MIC90	MIC range	MIC50	MIC90	MIC range	MIC50	MIC90	MIC range	MIC50	MIC90
Shoen et al. 2019	CAMHB	37	USA	MAB	14 (TGC)/24 (OMC)	0.06 to 8	1	2	0.06 to 8	1	2	NA	NA	NA	NA	NA	NA
Kaushik et al. 2019 (b)	CAMHB	30	USA	MAB	28	0.5 to 4	1	2	0.5 to 4	1	2	0.125 to 2	0.5	1	NA	NA	NA
				MAB-A	16	1 to 4	1	2	0.5 to 4	2	4	0.25 to 2	0.5	2	NA	NA	NA
				MAB-M	7	0.5 to 2	1	2	0.5 to 2	1	2	0.125 to 0.5	0.25	0.5	NA	NA	NA
Gumbo et al. 2020	NA	NA	USA	MAB-A	17	NA	NA	NA	4 to 256	16	128	NA	NA	NA	NA	NA	NA
Brown-Elliott et al. 2021	CAMHB	30	USA	MAB-A	20	≤0.015 to 1	0.12	0.25	0.06 to 0.5	0.12	0.25	NA	NA	NA	NA	NA	NA
				MAB-M	3	0.06 to 0.25	0.25		0.06 to 0.25	0.12		NA	NA	NA	NA	NA	NA
Chew et al. 2021	CAMHB	30	Singapore	MAB	218 TGC)/211(ERC)	0.06 to 4	0.5	1	NA	NA	NA	0.015 to 0.5	0.12	0.25	NA	NA	NA
Brown-Elliott et al. 2022	CAMHB	30	USA	MAB-A	8	≤0.06 to 0.25	0.12	0.25	NA	NA	NA	≤ 0.06 to 0.5	0.12	0.5	NA	NA	NA
				MAB-M	5	0.06 to 0.25	0.25	0.25	NA	NA	NA	0.03 to 0.5	0.12	0.5	NA	NA	NA
Nicklas et al. 2022	CAMHB	30	USA	MAB ^b	31	0.06 to 1	0.125	0.375	0.06 to 1	0.25	0.5	NA	NA	NA	NA	NA	NA
				MAB-A	12	0.06 to 1	0.188	0.25	0.125 to 1	0.25	0.5	NA	NA	NA	NA	NA	NA
				MAB-M	9	≤0.06 to 0.5	0.188	0.5	0.06 to 1	0.25	1	NA	NA	NA	NA	NA	NA
Li A et al. 2023	CAMHB	30	China	MAB ^b	193	0.063 to 4	0.5	2	0.25 to 8	1	4	0.063 to 8	1	4	4 to >8	>8	>8
				MAB-A	147	0.063 to 4	0.5	2	0.25 to 4	1	4	0.063 to 4	1	4	4 to >8	>8	>8
				MAB-M	46	0.125 to 4	1	2	0.5 to 8	2	4	0.125 to 8	1	4	8 to >8	>8	>8
Zhang T et al. 2023	CAMHB	37	China	MAB ^b	73	0.0313 to 1	0.25	0.5	0.0625 to 1	0.25	0.5	0.0156 to 0.25	0.0625	0.125	0.125 to >8	>8	>8
				MAB-A	44	0.0625 to 1	0.25	0.5	0.0625 to 1	0.25	0.5	0.0156 to 0.25	0.0625	0.125	0.125 to >8	>8	>8
				MAB-M	29	0.0313 to 1	0.25	0.5	0.125 to 1	0.5	1	0.0156 to 0.25	0.0625	0.125	2 to >8	>8	>8
Guo W et al. 2024	CLSI guideline	30	China	MAB ^b	178	NA	0.5	2	≤ 0.125 to 8	1	2	NA	NA	NA	NA	NA	NA
				MAB-A	139	NA	0.5	2	≤ 0.125 to 4	0.5	2	NA	NA	NA	NA	NA	NA
				MAB-M	39	NA	1	2	0.25 to 8	1	2	NA	NA	NA	NA	NA	NA

Study	DST medium ^a	DST temp. (°C)	Country	Subsp.	No. of isolates	TGC (µg/mL) ^c			OMC (µg/mL) ^d			ERC (µg/mL) ^d			SAC (µg/mL) ^d		
						MIC range	MIC50	MIC90	MIC range	MIC50	MIC90	MIC range	MIC50	MIC90	MIC range	MIC50	MIC90
Huang Y et al. 2025	CAMHB	30	USA	MAB ^b	46 (TGC)/47 (OMC)	0.125 to 2	1	2	0.125 to 2	1	1	NA	NA	NA	NA	NA	NA
				MAB-A	31	0.125 to 2	1	2	0.125 to 2	1	1	NA	NA	NA	NA	NA	NA
				MAB-M	14	0.5 to 2	1	2	0.5 to 2	1	2	NA	NA	NA	NA	NA	NA
Terschlüssen et al. 2025 (EU panel)	CAMHB	30	NA	MAB-A	169	0.06 to 4	0.5	2	0.12 to 8	1	4	NA	NA	NA	NA	NA	NA
				MAB-M	24	0.125 to 4	1	2	0.25 to 8	2	4	NA	NA	NA	NA	NA	NA
Terschlüssen et al. 2025 (Japan panel)	CAMHB	30	Japan	MAB-A	57	0.06 to 2	0.5	1	0.25 to 1	0.5	1	NA	NA	NA	NA	NA	NA
				MAB-M	46	0.03 to 1	0.125	0.25	≤0.015 to 2	0.25	0.5	NA	NA	NA	NA	NA	NA

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b MIC50 and MIC90 values were calculated from MIC data.

^c Studies that reported susceptibility results for TGC together with OMC, ERC, or SAC were included in this table.

^d OMC, ERC, and SAC MICs were read at 100% inhibition.

Abbreviations: TGC, Tigecycline; OMC, Omadacycline; ERC, Eravacycline; SAC, Sarecycline; DST, Drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical & Laboratory Standards Institute; temp., temperature; No., number; Subsp., subspecies; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; MIC, Minimal inhibitory concentration; MIC50, Minimal inhibitory concentration required to inhibit the growth of 50% of organisms; MIC90, Minimal inhibitory concentration required to inhibit the growth of 90% of organisms; NA, not available.

Supplementary Table 9. In vitro susceptibility of tigecycline against clinical *Mycobacterium abscessus* isolates

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Huang YC et al. 2010	CAMHB	30	Taiwan	MAB	40	0.064 to 2	0.5	2
Lee MR et al. 2014	Sensititre RAPMYCOI plate (CLSI)	NA	Taiwan	MAB ^b	14	0.06 to 4	1	2
				MAB-A	4	0.25 to 1	0.5	1
				MAB-B	10	0.06 to 4	1	2
Singh et al. 2014	CAMHB	30	France	MAB	67	2 to 16	4	8
				MAB-A	42	2 to 16	4	8
				MAB-B	4	2 to 8	2	8
				MAB-M	21	2 to 16	4	16
Chua et al. 2015	Sensititre RAPMYCOI plate (CLSI)	CLSI guideline	Australia	MAB ^b	38	0.5 to >4	2	4
				MAB-A	20	1 to >4	2	4
				MAB-M	18	0.5 to >4	2	4
Pang H et al. 2015	CAMHB	37	China	MAB	55	<0.25 to 8	2	2
Li YM et al. 2016	CAMHB	CLSI guideline	China	MAB	22	0.06 to 16	1	8
Mougari et al. 2016	Sensititre RAPMYCOI plate (CLSI)	CLSI guideline	France	MAB ^b	136	≤0.015 to 2	0.25	1
				MAB-A	96	0.06 to 1	0.25	0.5
				MAB-B	21	0.12 to 2	0.5	1
				MAB-M	19	≤0.015 to 2	0.25	1
Hatakeyama et al. 2017	CAMHB	37	Japan	MAB	13	≤0.12 to 0.5	0.25	0.5
Lee MC et al. 2017	Sensititre RAPMYCOI plate (CLSI)	CLSI guideline	Taiwan	MAB ^b	66	0.25 to 2	0.5	1
				MAB-A	28	0.25 to 2	0.5	1
				MAB-M	38	0.25 to 2	0.5	1
Li B et al. 2017	CLSI guideline	CLSI guideline	China	MAB	162	0.25 to 4	1	4
Li G et al. 2017	CAMHB	37	China	MAB-A	53	NA	32	128
Zhang Z et al. 2017	CAMHB	37	China	MAB-A	20	0.12 to 64	4	16
				MAB-M	20	0.13 to 4	0.5	2

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Ananta et al. 2018	Sensititre RAPMYCOI plate (CLSI)	30	Thailand	MAB	68	0.12 to 4	1	4
Shen Y et al. 2018	CAMHB	37	China	MAB	20	0.0625 to 16	NA	8
Brown-Elliott et al. 2019	CAMHB	30	USA	MAB-A	76	0.06 to 1	0.25	0.5
				MAB-M	10	0.06 to 0.25	0.25	0.25
Cheng et al. 2019	CAMHB	CLSI guideline	Taiwan	MAB-A	13	0.25 to 1	0.5	1
				MAB-M	13	0.06 to 1	0.5	1
Kaushik et al. 2019 (b)	CAMHB	30	USA	MAB	28	0.5 to 4	1	2
				MAB-A	16	1 to 4	1	2
				MAB-M	7	0.5 to 2	1	2
Shoen et al. 2019	CAMHB	37	USA	MAB	14	0.06 to 8	1	2
Da Mata-Jardín et al. 2020	CAMHB	30	Venezuela	MAB	63	NA	0.25	1
Guo Y et al. 2020	Sensititre RAPMYCOI plate (CLSI)	37	China	MAB-A	97	0.12 to >4	1	4
				MAB-B	19	0.25 to 4	2	4
				MAB-M	13	0.5 to 4	2	4
Özdemir et al. 2020	Sensititre RAPMYCOI plate (Middlebrook 7H9)	30	Europe	MAB	36	0.25 to 4	0.5	1
Wetzstein et al. 2020	Sensititre RAPMYCOI plate (CLSI)	30	Germany	MAB	29	0.25 to 1	0.5	0.5
Brown-Elliott et al. 2021	CAMHB	30	USA	MAB-A	20	≤0.015 to 1	0.12	0.25
				MAB-M	3	0.06 to 0.25	0.25	NA
Chew et al. 2021	Sensititre RAPMYCOI plate (CAMHB)	30	Singapore	MAB	218	0.06 to 4	0.5	1
Guo Q et al. 2021	CAMHB	30	China	MAB-A	32	0.125 to 32	1	16
				MAB-M	11	0.5 to 32	8	16
Kamada et al. 2021	CAMHB	30	Japan	MAB	313	0.25 to >8	1	4
				MAB-A	178	0.25 to >8	1	4

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Wang Y et al. 2021	CAMHB	37	China	MAB-M	130	0.25 to >8	2	8
				MAB-A	218	NA	4	16
				MAB-M	163	NA	8	64
Borek et al. 2022	Sensititre RAPMYCOI plate (CAMHB)	30 ± 2	Poland	MAB ^b	23	0.06 to 1	0.5	1
				MAB-A	16	0.06 to 1	0.5	1
				MAB-M	7	0.12 to 1	0.5	1
Brown-Elliott et al. 2022	CAMHB	30	USA	MAB-A	8	≤0.06 to 0.25	0.12	0.25
				MAB-M	5	0.06 to 0.25	0.25	0.25
Nicklas et al. 2022	CAMHB	30	USA	MAB ^b	31	0.06 to 1	0.125	0.375
				MAB-A	12	0.06 to 1	0.188	0.25
				MAB-M	9	≤0.06 to 0.5	0.188	0.5
He et al. 2022	Sensititre RAPMYCOI plate (CLSI)	30 ± 2	China	MAB	24	0.25 to 2	0.5	2
Tsai et al. 2022 ^c	NA	NA	USA	MAB	27	0.06 to 2	0.12	0.25
Tu et al. 2022	Sensititre RAPMYCOI plate (CAMHB)	30	Taiwan	MAB	22	0.03 to 1	0.12	1
Burke et al. 2023	Sensititre RAPMYCOI plate (CAMHB)	30	Australia	MAB	46	0.12 to 1	0.25	0.5
				MAB-A	40	0.12 to 1	0.25	0.5
				MAB-M	6	0.25 to 0.5	0.5	0.5
Kania et al. 2023	Sensititre RAPMYCO2 plate (CAMHB)	30 ± 2	Poland	MAB ^b	11	0.12 to 2	0.5	2
				MAB-A	8	0.12 to 2	0.5	2
				MAB-M	2	0.25 to 0.5	0.25	0.5
Li A et al. 2023	CAMHB	30	China	MAB ^b	193	0.063 to 4	0.5	2
				MAB-A	147	0.063 to 4	0.5	2
				MAB-M	46	0.125 to 4	1	2
Ruedas-López et al. 2023	Sensititre RAPMYCOI plate (CLSI)	CLSI guideline	Spain	MAB ^b	96	≤0.06 to 8	0.25	0.5
				MAB-A	50	≤0.06 to 8	0.25	0.5
				MAB-B	13	0.12 to 0.5	0.25	0.5
				MAB-M	33	≤0.06 to 0.5	0.25	0.5

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Sukmongkolchai et al. 2023	Sensititre RAPMYCOI plate (CAMHB)	30	Thailand	MAB	143	0.25 to >4	1	2
				MAB-A	72	0.25 to >4	1	2
				MAB-B	7	0.25 to >4	0.5	>4
				MAB-M	64	0.25 to >4	1	2
Ying et al. 2023	Sensititre RAPMYCOI plate (CLSI)	37	China	MAB	46	0.06 to >4	1	4
Zhang T et al. 2023	CAMHB	37	China	MAB ^b	73	0.0313 to 1	0.25	0.5
				MAB-A	44	0.0625 to 1	0.25	0.5
				MAB-M	29	0.0313 to 1	0.25	0.5
Guo W et al. 2024	CLSI guideline	30	China	MAB	178	NA	0.5	2
				MAB-A	139	NA	0.5	2
				MAB-M	39	NA	1	2
Hu Y et al. 2024	CAMHB	37	China	MAB-A	82	NA	0.5	0.5
				MAB-M	39	NA	0.5	1
Liu X et al. 2024	CLSI guideline	CLSI guideline	China	MAB	44	0.015 to 4	0.5	2
Mazzarelli et al. 2024	CAMHB	30	Italy	MAB	12	0.06 to 2	0.5	1
Huang Y et al. 2025	CAMHB	30	China	MAB ^b	46	0.125 to 2	1	2
				MAB-A	31	0.125 to 2	1	2
				MAB-M	14	0.5 to 2	1	2
Terschlüsen et al. 2025 (EU panel)	CAMHB	30	Europe	MAB-A	169	0.06 to 4	0.5	2
				MAB-M	24	0.125 to 4	1	2
Japan			MAB-A	57	0.06 to 2	0.5	1	
			MAB-M	46	0.03 to 1	0.125	0.25	
Wang X et al. 2025	CAMHB	37	China	MAB-A	100	NA	0.5	1
				MAB-M	89	NA	0.5	2

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b MIC50 and MIC90 values were calculated from MIC data.

^c The method used for drug susceptibility testing was not reported.

Abbreviations: BMD, Broth microdilution method; DST, Drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical & Laboratory Standards Institute; No., number; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; MIC, Minimal inhibitory concentration; NA, not available; MIC50, Minimal inhibitory concentration required to inhibit the growth of 50% of organisms; MIC90, Minimal inhibitory concentration required to inhibit the growth of 90% of organisms.

Supplementary Table 10. In vitro susceptibility of rifabutin against clinical *Mycobacterium abscessus* isolates

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Pang H et al. 2015	CAMHB	37	China	MAB	55	0.03 to >32	1	16
Li G et al. 2017	CAMHB	37	China	MAB-A	53	NA	1	8
				MAB-M	9	NA	32	>64
Shen Y et al. 2018	CAMHB	37	China	MAB	20	0.5 to 8	NA	4
Cheng et al. 2019	CAMHB	CLSI guideline	Taiwan	MAB	26	2 to 32	NA	NA
				MAB-A	13	8 to 32	16	32
				MAB-M	13	2 to 16	16	16
Chew et al. 2021	CAMHB	30	Singapore	MAB	211	0.12 to >64	16	32
Kamada et al. 2021	CAMHB	30	Japan	MAB	313	<0.125 to >8	8	>8
				MAB-A	178	<0.125 to >8	4	>8
				MAB-M	130	1 to >8	8	>8
Wang Y et al. 2021	CAMHB	37	China	MAB-A	218	NA	8	16
				MAB-M	163	NA	8	32
Chen et al. 2022	CAMHB	37	China	MAB	194	0.125 to 16	2	4
				MAB-A	148	0.125 to 8	2	4
				MAB-M	46	0.5 to 16	2	4
Wang D et al. 2022	CLSI guideline	CLSI guideline	China	MAB	31	<0.5 to 2	2	32
Burke et al. 2023	CAMHB	30	Australia	MAB	46	1 to 32	16	32
				MAB-A	40	1 to 32	16	16
				MAB-M	6	8 to 32	32	32
Fujiwara et al. 2023	CAMHB	30	Japan	MAB-A	40	≤0.5 to 32	8	16
Nicklas et al. 2022	CAMHB	30	USA	MAB ^b	31	1.5 to 32	8	16
				MAB-A	12	8 to 16	8	16
				MAB-M	9	4 to 16	8	16
Guo W et al. 2024	CLSI guideline	30	China	MAB-A	139	NA	4	8
				MAB-M	39	NA	4	8

Study	DST medium ^a	DST temperature (°C)	Country	Subspecies	No. of isolates	MIC range (µg/mL)	MIC50 (µg/mL)	MIC90 (µg/mL)
Terschläsen et al. 2025 (EU panel)	CAMHB	30	NA	MAB-A	169	1 to >16	16	>16
				MAB-M	24	2 to >16	16	>16
Terschläsen et al. 2025 (Japan panel)	CAMHB	30	Japan	MAB-A	57	≤0.5 to >16	>16	>16
				MAB-M	46	2 to >16	16	>16

^a Drug susceptibility testing in all studies was performed using the broth microdilution method.

^b MIC50 and MIC90 values were calculated from MIC data.

Abbreviations: DST, Drug susceptibility testing; CAMHB, Cation-Adjusted Mueller-Hinton Broth; CLSI, Clinical & Laboratory Standards Institute; No., number; MAB, *Mycobacterium abscessus*; MAB-A, *M. abscessus* subsp. *abscessus*; MAB-B, *M. abscessus* subsp. *bolletii*; MAB-M, *M. abscessus* subsp. *massiliense*; MIC, Minimal inhibitory concentration; NA, not available; MIC50, Minimal inhibitory concentration required to inhibit the growth of 50% of organisms; MIC90, Minimal inhibitory concentration required to inhibit the growth of 90% of organisms.