

1 **Additional table 1:** Study of the state of the art

Authors	Country	Cas enzyme	Sensitivity	Specificity	Limit of Detection	Samples	Target gene	Previous amplification	Detection	Assay time (min)	Ref.
Present study	Spain	Cas12a and Cas13a	88.7% and 67.7%	100%	10 copies/ μ L	n=76 sputum, BALF, BAS, urine, biopsies, abscess, bones, ...	IS6110	LAMP ^a	Fluorescence and LFA	90	-
Dunkley et al. 2025	USA	Cas12a and Cas13a	100%	100%	170 copies/ μ L and 1 copy/ μ L respectively	n=14 sputum	IS6110 and IS1081	RPA ^a	Fluorescence and LFA	105	[43]
Li et al. 2024	China	Cas13a	69%	100%	10 copies/ μ L	n=151 sputum	IS6110	RAA ^a	Fluorescence	90	[20]
Ren et al. 2023	China	Cas13a	97.4%	95.5%	1 copy/ μ L	n=401 sputum, BALF and pus samples.	IS1081	Conventional PCR	Fluorescence	120	[21]
Thakku et al. 2023	USA	Cas13a	90%	100%	0.05 Mtb GE/reaction (0.25 fg DNA)	n=46 plasma	IS6110 and IS1081	RPA ^a	Fluorescence and LFA	180	[22]
Wu et al. 2024	China	Cas13a	88%	78.1%	NR	n=180 sputum, BALF	IS1081	Conventional PCR	Fluorescence	NR	[23]
Peng et al. 2023	China	Cas12b	67.2%	96.7%	0.8 copies/ μ L	n=293 sputum	IS6110	CPA ^a	Fluorescence	80	[24]
Yang et al. 2023	China	Cas12b	81%	100%	5 fg/ μ L	n=90 sputum	IS6110	MCDA ^a	Fluorescence	70	[25]
Sam et al. 2021	China	Cas12b	86.8%	95.2%	1.3 copies/ μ L	n=237 sputum BALF and plasma	IS6110	LAMP ^a	Fluorescence	120	[26]

Zhang et al. 2023	China	Cas12a	88%	94%	53 copies/μL	n= 504 (sputum, urine, CSF, ascitic fluid, BALF, ...)	IS6110 and IS1081	RAA ^a	Fluorescence	75	[27]
Jia et al. 2023	China	Cas12a	100%	100%	8 copies/μL	n=96 sputum	<i>sdaA</i>	MCDA ^a	Fluorescence	60	[28]
Huang et al. 2022	China	Cas12a	89%	96%	0.06 copies/μL	n=73 Serum	IS6110	Conventional PCR	Fluorescence and LFA	120	[29]
Wang et al. 2021	China	Cas12a	80%	100%	10 copies/μL	n=44 sputum	IS6110	LAMP ^a	Fluorescence and LFA	60	[30]
Xiao et al. 2020	China	Cas12a	100%	Not stated	From 1 pg - 100 fg (500-10,000 CFU/mL)	n=73 <i>Mycobacterium</i> spp. strains.	<i>rpoB</i>	Conventional PCR	Fluorescence	120	[31]
Xu et al. 2020	China	Cas12a	99.3%	100%	4.48 fmol/L (2 copies/μL)	n=193 sputum	IS6110 and IS1081	RPA ^a	Fluorescence	240	[32]
Li et al. 2020	China	Cas12a	80%	100%	1 copy/μL	n= 69 sputum, BALF, biopsies.	IS6110	RPA ^a	Fluorescence and LFA	120	[33]
Ai et al. 2019	China	Cas12a	78%	98%	5 copies/μL	n=179 sputum, BALF, CSF, ...	IS6110	RPA ^a	Fluorescence	90	[34]
Xiao et al. 2023	China	Cas12a	95.5%	100%	4 copies/μL	n=107 sputum	IS6110 and IS1081	RPA ^a	Fluorescence and LFA	60	[35]
Gan et al. 2024	China	Cas12a	100% (Fluorescence)	100% (Fluorescence)	9 copies/μL (Fluorescence) 90 copies/μL (LFA)	n=60 sputum	IS1081	ERA ^a	Fluorescence and LFA	60	[36]

			93.8% (LFA)	100% (LFA)							
Sun et al. 2024	China	Cas12a	96%	100%	10 ³ aM	n=38 sputum, BALF	<i>rpoB</i>	MRCA ^a	Fluorescence	180	[37]
Cheng et al. 2023	China	Cas12a	100%	100%	1 copy/reaction	n=20 MTB clinical samples	IS1081	RPA ^a	LFA	50	[38]
Kaushik et al. 2025	India	Cas12a	98.27%	100%	1 copy/reaction	n=232 sputum, urine, serum	IS6110	RT-LAMP ^a	LFA	134	[39]
Compiro et al. 2025	Thailand	Cas12a	100%	100%	1-100 copies/reaction	n=20 sputum	<i>rpoB</i>	RPA ^a	Fluorescence	60	[40]

2 Mtb GE: *Mycobacterium tuberculosis* genome equivalent; CPA: cross-primer amplification; MCDA: multiple cross displacement amplification; RAA: recombinase-aided
3 amplification; RPA: recombinase polymerase amplification; ERA: Enzymatic Recombinase Amplification; MRCA: Multi-primed-RCA; BALF: bronchoalveolar lavage fluid; CSF:
4 cerebrospinal fluid; NR: not reported.

5 ^a: isothermal amplification

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