

Supplementary Table S4: Comparison of rt-LAMP with recommendations of TAG group 2009

Test Specification	Recommendations of Treatment action group 2009 from TAG report ¹	rt-LAMP
Medical decision	Treatment initiation	Treatment initiation
Sensitivity- Adults (for pulmonary TB)	95% smear positive, MRS positive 60-80% smear negative, MRS positive	100% 73.66%
Specificity- Adults	95% compared to MRS	94.06%
Time to results	3 hours maximum	1.5 hours
Throughput	20 tests/day	48 or 96 or 384 tests/run - possible to conduct more than 4 runs per day. LAMP-PCR machines can run 16 tests/run - possible to conduct more than 4 runs per day.
Specimen type	Urine, oral, breath, venous blood, Sputum	Sputum
Sample preperation	-3 steps max -Safe- biosafety 1 -Ability to use -approximate volume -Preparation that is not highly time sensitive	- 2 steps - Biosafety 1 - No need of accurate pipetting - Not highly time sensitive
Number of samples	One sample per test	One sample for test
Readout	Easy to read, unambiguous	Exponential amplification of positive samples, easy to read
Waste disposal	-Simple burning -Environmentallly acceptable disposal	- Environmentally acceptable disposal
Controls	-Positive control included in the test kit -Quality control simpler and easier	- Positive control included in the kit - Quality control is with positive and negative controls - easy to perform
Reagents	-All reagents in self contained kit -Kit contains sample collection device	- All reagents in self contained kit - Sample collection tube included in the kit
Storage/stability	-Shelf life of 24 months, including reagents -Stable at 30° C and at higher temperature for shorter period of time -Stable in high humidity environment	- Accelerated shelf like shows >24 months - Stable at room temperature for 1-2 hours - Kit worked at 80-90% humidity
Instrumentation	-Instrument works in tropical conditions	- Utilizes open qPCR machines. These machines have been used in tropical conditions
Power requirement	-Can work on battery	Depends on qPCR machine models - battery operated qPCR machines, if available, can be used
Training	1 day max. Training time Can be performed by any health worker	Half a day training
Cost	<US\$10 per test after scale-up	< US\$5 per test after scale-up

Ref. 1. Treatment Action Group experts meeting report on defining specifications for TB Point of Care test. https://www.msfaccess.org/sites/default/files/MSF_assets/TB/Docs/TB_event_POC_fullsurveyreport_ENG_2008.pdf (2009).