

## **Reviewer's report**

**Title:** Improved Performance of Xpert® MTB/RIF Assay on Sputum Sediment Samples Obtained from Presumptive Pulmonary Tuberculosis Cases at Kibong'oto Infectious Diseases Hospital, Tanzania

**Version: 1 Date:** 24 Oct 2017

**Reviewer:** Gideon Kofi Helegbe

### **Reviewer's report:**

REPORT ON THE PAPER 'IMPROVED PERFORMANCE OF XPERT® MTB/RIF ASSAY ON SPUTUM SEDIMENT SAMPLES OBTAINED FROM PRESUMPTIVE PULMONARY TUBERCULOSIS CASES AT KIBONG'OTO INFECTIOUS DISEASES HOSPITAL, TANZANIA'

#### **Abstract:**

It was well structured with all the components for a good abstract. However, there were a couple of sentences that were not clear and will need some restructuring. Again some sentences were not well structured, thus authors will need a native English speaker to assist them in the editing.

#### **Background:**

The authors were brief, concise and comprehensive. The authors took the reader through the burden/epidemiology of TB globally then to the situation in Ethiopia, and the need for the use of an improved methods in detecting TB cases. The authors also argued that Xpert® MTB/RIF considerably increases TB detection among culture-confirmed cases. Authors also reviewed briefly the principles/mechanism underlying the Xpert® MTB/RIF performance.

#### **Concern:**

Authors need to edit the write up by consulting a native English person. Some of their sentences were not clear and grammar was an issue. It was also observed that references were not attached to some statements being made, which I suggest the authors address.

#### **Methodology:**

Even though study area description as done in the present write up is good, it will have been much clearer for the reader if a map of the study area, in relation to Ethiopia and Africa as a whole was included. I suggest the authors include the map. This will clear up the confusion concerning the regional demarcation in Ethiopia and relating to the study area.

Furthermore, the authors made a good attempt in describing some of the procedures used in the study. However, there were some flaws, which the authors need to work on. It is not clear why the authors decide to use Xpert® MTB/RIF only for the unprocessed and did not include the LJ culture as done for the processed one. Another point for clarification is that, the authors failed to describe the process for 1:3 dilution and compare with the 1:2 as described. Yes, the authors talked of the 1:3 as the standard by the manufacturers. Having the data for 1:3 alongside will have made the story a complete one. Other comments are in the pdf manuscripts with comments.

#### Results:

Data for the positive and negative controls used in the study not reported. Some data collected were also not reported, e.g. absolute CD4+ T cells.

#### Discussion:

The authors made a good attempt to discuss the results of the study. It was brief and concise. However, there are few areas for concern. These are:

The authors were discussing data that were not provided in the study (e.g. 1:3 dilution).

Again a couple of sentences were not clear suggesting that the authors will need a native English speaking person to edit their work.

As indicated in the article the authors failed to discuss some interesting findings that authors placed at conclusion. This will have made the discussion much more interesting. I suggest the authors take note of that to fine tune their discussion.

#### References:

References were relevant and not outdated. However, one had two dates, which should be corrected.

#### Final Comments

On the whole it's a good piece of study. Even though it does not have a novelty in their findings, it add up to the literature to strengthen the use of Xpert® MTB/RIF to enhance TB detection. However, the article as it is lacks some informations for it to be published in this present form. Data for 1:3 dilution not available, making the conclusion skewed towards the 1:2 dilution. Also Table 2 not available for analysis. The reason why only Xpert® MTB/RIF was used to screen TB for the unprocessed sputum also raised concerns. Again, there were some inconsistencies too in the results presentation, e.g. Table 3 where it was captured as results for different dilutions, meanwhile it was for 1:2 dilution. All these data not captured question the title further on the use on the word 'IMPROVEMENT', suggesting there is an existing data either in this report or referenced for the Xpert® MTB/RIF on the two dilutions for TB detection. As it stands now it appears to be comparing the Xpert® MTB/RIF with the LJ culture method. Based on these observations I recommend rejection of the article in this format but can be resubmitted if the major concerns are addressed.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**

If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**

Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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