

Dear Editor and Reviewers:

Thank you for your letter and for the reviewers' comments for the manuscript entitled " Can a radioimmunoassay kit be developed for the accurate detection of the S protein of severe acute respiratory syndrome coronavirus 2?"(ID: 69172). We have studied comments carefully and have made correction which we hope meet with approval. Revised portion are marked in red in the paper. The main corrections in the paper and the responds to the reviewers' comments are as following:

Reviewer: 1

1. The manuscript, a Letter to the Editor, reports an alternative method for COVID-19. The central idea of the manuscript is clear, nevertheless the manuscript reports that RT-PCR for the detection has a low sensitivity (as low as 38%), and this information should be further discussed, such as targets, sequences, methods and variants. Please also further explain the low sensitivity described, several reports with RT-PCR report close to 100% sensitivity (10.1016/j.bjid.2020.04.003).

Thank you for your comments. We've revised that sentence as "However, RT-PCR requires certified laboratories, expensive equipment and trained technicians. Therefore, it is necessary to develop simpler and more convenient methods."

We note that low sensitivity of RT-PCR was commented by 10.1016/j.cca.2020.03.009. The reason may be partly due to most of the COVID-19 cases in China being mild with low viral load.

Reviewer: 2

1. The Abstract needs to be critically revised.

Thank you for your comments. We have made some changes for this section.

2. Page 2: “Reverse transcription-PCR (RT-PCR) is the main method for the in vitro detection of SARS-CoV-2 in China.” This statement is not correct because this is used throughout the world.

Thank you for your comments. We have revised the sentence.

3. Please add more strong keywords.

We’ve added the new keyword “Detection.”

4. Page 2: Souza PFN et al. [4,5] showed that 8 antibacterial peptides...” Please revise it. It is not the right way to insert two references after ‘et al.’ of a single author name.

Thank you for your comments. We deleted ‘et al.’

5. Page 2: The whole introduction section is poor and general. Authors are advised to revise the introduction section carefully and add relevant data to support the problem statement and make a connection between each paragraph. Authors are jumped from one discussion to another without any authentic information, please revise it carefully.

We have made many changes to the introduction section, which are highlighted in red in the text.

6. Page 3: “Requiring only 10 amino acids for synthesis at a low cost.” Can you please add the names of that amino acids?

Thank you for your comments. We have added the peptide sequence in this paper.

7. Page 3: “RIA kits were prepared in the same manner as other kits on the market.” This is not the right way to report the method, please briefly explain.

We have described in detail the process of making the kit.

8. Page 3: “COVID-19 is highly infectious and pathogenic..... consideration of the infectivity of SARS-CoV-2” This paragraph should be moved to the introduction section to create a research gap.

Thank you for your comments. We have made further modifications to this section.

9. How much better results were/will be observed with the RIA assay? What is the cost of this method? What is the accuracy of this method compared to RT-PCR?

Thank you for your comments. We’ve added some of the advantages of RIA to discussion section.

10. Authors are advised to proofread the manuscript to overcome grammatical mistakes.’

Thank you for your comments. We repolished the paper again by AJE.

11. The discussion needs professional English editing, please revise it carefully to make it standard. Please focus on the main topic during the discussion.

We revised the discussion section. The entire paper has been repolished.

12. The authors need to summarize their manuscript in a single sentence at the end.

Thank you for your comments. We added a concluding sentence at the end of the paper.

We tried our best to improve the manuscript and made some changes in the manuscript. These changes will not influence the content and framework of the paper. We appreciate for Editor/Reviewers' warm work earnestly, and hope that the correction will meet with approval.

Once again, thank you very much for your comments and suggestions.