

# Review of: "The $\alpha 7$ Nicotinic Acetylcholine Receptor: a Key Molecule in Post-COVID Syndrome?"

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Potential competing interests: No potential competing interests to declare.

**Overall, this review article is well-stated. This reviewer considers that this document has certain shortcomings that must be overcome prior to publication:**

## **Specific comments:**

The addition of a graphical abstract would be very helpful to the readers.

The manuscript should be thoroughly revised for grammatical and spelling errors.

Incomplete references and errors in the reference style should be fixed. For example, (Lykhmus et al., submitted) and (Hilmas et al., 2001).

The author should adopt a consistent style of writing the abbreviations and the protein fragment name. For example, the representation of Covid-19 in abstract.

Please add a discussion about the snake venom toxin-like sequence of SARS-CoV-2 protein (fragment 381-386) to connect its relevance to this manuscript.

Please add citations to the following statements:

1- "smoking people are rare among patients with severe COVID".

2- "In our case, the antigen is SARS(674-685), which binds to  $\alpha 7$ (179-190); therefore, anti-idiotypic antibody should also bind  $\alpha 7$ (179-190) that is actually observed".

3- "We found both SARS(674-685)-specific and  $\alpha 7$ (179-190)-specific antibodies in the blood of people who experienced COVID-19 two to six months ago; many of them complained for the cognitive impairment including memory loss".

The manuscript can be further improved by adding a critical evaluation of the data available from the existing studies.

