Reviewer’s report

Title: Association of SARS susceptibility with single nucleic acid polymorphisms of OAS1 and MxA genes: A Case-Control Study

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Reviewer: Maria R. R Capobianchi

Reviewer’s report:

The authors show that antiviral genes that are induced by interferon may be related to host susceptibility to SARS-CoV infection. They investigated the association among genetic polymorphisms of OAS-1 or MxA genes, and susceptibility to SARS in the Chinese Han population. The results show that one polymorphism in the OAS-1 3'-UTR gene region, and also a GT genotype in the MxA gene promoter, were associated with increased susceptibility to SARS infection. Moreover, the associations of the MxA and OAS-1 genotypes remained significant in multivariate analysis after controlling for SARS protective measures.

General comments
The manuscript shows interesting information about the relationship between host genetics and infection, with sufficient support by the experimental and statistical data presented. The methods are appropriate and well described, and sufficient details are provided to replicate the work. The discussion and conclusions are rather balanced and adequately supported by data. The paper is well and clearly written.

- Major Compulsory Revisions
1) In the Results section, the authors should show the data regarding combined genotypes. Since both genes are involved in the response to IFN stimulation, it is expected that combined action between mutations could affect the susceptibility to SARS-CoV infection (stronger than the single mutation). The groups under study are apparently of sufficient size for such analyses; it would be useful to study the interaction between the mutations in OAS-1 and MxA.
2) It is difficult to understand whether the real significance of table 3; I suggest to modify and clarify it.
3) In the discussion, it is hypothesized that the polymorphisms in 3'UTR may be related to the expression of the two isoforms; however, the role of E16 and E18 proteins in SARS-CoV infection has yet to be investigated. Why did the authors mention this? This statement should be modified to decrease the emphasis. This is not a hypothesis; there are no indications for this.
4) In the Background, is not clear why the authors tested the Chinese Han population for the association of cited mutations in the OAS-1 and MxA genes with the susceptibility to SARS-CoV; instead, this is well described in the discussion. Therefore, it is recommended to move this explanation from the Discussion to the Background.

- Minor Essential Revisions
In the methods, the symbol of centigrade (°C) is missing.
In table 3, "goggles" should be plural.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests