Reviewer's report

Title: Association of HLA Class I with Severe Acute Respiratory Syndrome Coronavirus Infection

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Reviewer: Alicia Sanchez-Mazas

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Unable to decide on acceptance or rejection until the authors have responded to the compulsory revisions

Answers to points 1-7:
1. Is the question posed by the authors new and well defined? Yes
2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work? Not completely, see comments
3. Are the data sound and well controlled? Yes (patient sample sizes are low, but the authors cannot improve them)
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? To moderate, see comments
6. Do the title and abstract accurately convey what has been found? Yes
7. Is the writing acceptable? Yes

Discretionary revisions:

1. The "patients" section in materials and methods is very confusing and should be shorten or the information put in a table. In fact, the first paragraph of the Results is a summary of that section and could practically replace the latter.

Compulsory revisions:

2. The authors used the powerful Fisher's exact test for their analyses, which is a reasonable choice with low sample sizes (patients). On the other hand, it's not clear whether the tests are done on the
number of individuals or on the number of alleles detected. If it's on the number of alleles, the fact to assume no blanks, i.e. to consider two identical alleles in individuals showing only one allele (e.g. case no 33) at typing may bias the results, especially when serological typing is used, which is the case for HLA class I in the Taiwanese control sample B. As the P values are not highly significant (often equal to 0.05), such a bias could dramatically change the conclusions.

3. Line 7 of page 4 "Both control A and B showed significant odds ratios (OR=0.16, P=0.05)"; in fact one P-value is 0.04 according to table 2.

4. Lines 10-11 of the Discussion should be revised (not clear).

5. Line 6 of page 5: replace "Caucasian" by "Europeans" or "of European origin", otherwise specify better.

6. What justifies saying, on line 7 of page 5, that many peoples in Beijing are "genetically different to southern Chinese"?

7. Also, in line 2 of the second paragraph of page 5, "Taiwan indigenous peoples are genetically distinct from Taiwanese": Lin has shown that Taiwanese tribes were very distinct from each other, so we cannot consider them together to compare them to Taiwanese.

8. Next line, "HLA-B*4601 is a southern Asian gene": we are not allowed to assign specific genes to specific populations as sample sizes are never very high. What the authors mean is probably that southern Asians exhibit a higher frequency of this allele or that the allele has only been detected in those populations thus far. Please specify.

9. Seven lines below, "Asian peoples (...) also have less variation in their immune repertoires than European or African populations": explain what justifies this sentence and give references.

10. Table 1:
- Explain in the note what I.D. is (second column)
- Last line in the note: "Most", not "ost".

11. Table 2:
- OR*: explain what "***" is.
- Note: Add "(OR)" next to Odds ratio the first time the term appears.
- Do the cells correspond to numbers of individuals or numbers of alleles? The fact to use both kinds of numbers in the table headings is confusing.
- Note: "all correction factors were greater than 27": why using "27"?

12. Table 4:
Pc(33): explain better the correction factor.

Competing interests:

None declared.