Reviewer's report

Title: B7-H4 gene polymorphism is associated with sporadic breast cancer in Chinese Han population

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Reviewer: Kathleen Torkko

Reviewer's report:

This paper is a population-based case-control study of three potentially functional polymorphisms (SNPs) in the B7-H4 gene and their associations with breast cancer in a Chinese Han population. As with all case-control studies, the selection of cases and especially controls is difficult and must be done in such a way as to minimize introducing bias into the study. The fact that the controls are population-based makes this a stronger case-control study than one which uses other control groups (like hospital-based controls). The methodologies used are appropriate and the sample size is adequate for the number of SNPs studied. The authors give appropriate background to justify the relevance of the study and they are building on the existing literature. The study may have limited applicability to non-Chinese populations given potential differences in frequencies of genetic variants by race. Studies in other racial groups may be warranted. The authors did not discuss limitations of the study, but it appears to be well designed. The abstract is well written but I would suggest slightly modifying the title as suggested below. Comments about the written English are also outlined below.

Quality of Written English

Mostly the English is understandable and well written. Below are a few spots that I found that need editing. A good editor at the journal can find and smooth out other awkward spots

These comments (1-10) are “Minor Essential Revisions”

1. Change title to: B-7H4 gene polymorphisms are associated with sporadic breast cancer in a Chinese Han population

2. Abstract: Background line. Change “prevent tumors” to “protect tumors”

3. Abstract: Results line 1. Change “patients” to “cases”. I would suggest changing “patients” to cases throughout the manuscript to be more precise about describing the results of the case-control study and to avoid any confusion to the reader.

4. Main text: Background 1st paragraph line 1. Delete “path” after “etiology”.

5. Main text: Background 3rd paragraph lines 10-11. I am not sure what the authors meant by “to achieve an acquaintance of” do they mean to discover?
6. Main text: Results 1st paragraph lines 5-7. The sentence beginning “According to the comparison between cases and controls…” is awkward and needs to be rewritten.

7. Main text: Results 1st paragraph line 8. Change the word “incidences” to “proportions” or “frequencies”.

8. Main text: Results: Haplotype analysis section, 2nd paragraph, first sentence. What do the authors mean by “for prediction”?

9. Main text: Discussion 1st paragraph last sentence. Add “undergoing” before “apoptosis”.

10. Main text: Discussion 2nd paragraph first sentence. Change “probably” to “potentially”.

Statistical Review

Statistical analysis methodology appears to be appropriate to the study.

Selection of SNPs using Pupasview. I cannot comment on this methodology as I am not familiar with this program to select potentially functional SNPs.

The following comments are “Minor but essential”

11. Table 3. Please indicate to which test the p-value refers in a footnote. I assume it is a Chi-square test.

Please be clear about what the odds ratios mean in the table (and in Tables 4 & 5). Please indicate the referent group so the reader can correctly interpret the odds ratios. The odds ratios in the table I assume are testing the association of the specific genotype to case-control status. For example, the interpretation of the 0.690 odds ratio for the AA genotype of the first SNP is that people with the AA genotype are less likely to be cases. Is the referent group in this analysis all other genotypes for this SNP? I wonder if it might not be more meaningful to analyze the data in a way to get the following interpretation (for example): “Compared to people with the AG or GG genotypes, women with the AA genotype are less likely to have cancer (OR=0.xx, 95% CI etc).” Or conversely, people with the GG/AG genotypes are at increased risk for breast cancer compared to those with the AA genotype.”

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

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests.