Reviewer's report

Title: The obesity-risk variant of FTO is inversely related with the cautious, low-appetite, and slim "So-Eum" constitutional type: Genome-wide association and replication analyses

Version: 4 Date: 2 December 2014

Reviewer: Tran Quang Binh

Reviewer's report:

Major Compulsory Revisions:
1/ No data support for association of each of “Cautious”, “low-appetite”, and “slim body” with the obesity-risk variant of FTO. Thus, title of paper is not appropriate to the content of findings. It should be modified.
2/ It is better if SC type is used as a single multinominal variable (TE, SE, SY, and TY) instead of 3 binary variables.

Minor Essential Revisions:
3/ In the results, the author should present only their finding in the present study. Several sentences need to move to the discussion part or methods:
   - Page 10: “There were no problematic samples with low call rates (<96%), cryptic relatedness, gender inconsistencies etc., in KoGES individuals in this study, as described in the previous GWA analysis [25].”
   - Page 10: “Interestingly, the variants for determining the SE type were located in intron 1 of FTO, as shown in a regional plot constructed using LocusZoom [30]”----using LocusZoom should be presented in methods.
   - Page 11: “…those (for example, rs9939609 and rs8050136) have been well known to be involved in obesity-related traits [31, 32].”
   - Page 11: “Since the FTO variants are associated with obesity-related traits [31, 32].”

4/ Page 14----“ replication analysis in 5,478” is not correct in conclusion.
5/ Page 15: “The lower predisposition to weight gain and metabolic disorders, together with cautious personality, reduced appetite, and slim body, are characteristic of the SE type.” is not finding of the study. Thus, it cannot be written in conclusion.

Discretionary Revisions:
6/ Add number of subject in Tables
7/ Title of Table 3 needs to include “after adjusting age, sex, and BMI”.

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

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.