Reviewer's report

Title: MTTP-297H Polymorphism Reduced Serum Cholesterol but Increased Risk of Non-Alcoholic Fatty Liver Disease

Version: 4 Date: 7 July 2015

Reviewer: XU LIN

Reviewer's report:

In general, the study has been well-designed, analyzed and presented. However, the manuscript can be further improved, and below are some points for the authors to consider.

Q1. For SNP selection, the authors should explain why 'MAF >10%' was used. The common practice is 'MAF>5%'.

Q2. In the statistical analysis, the authors stated that they used multiple linear regression analysis to analyze the association of MTTP genotypes and serum LDL-C, non-HDL-C, and triglyceride. Maybe the authors should spell out whether the dependent variables were normal distributed variables and what variables were controlled for in the multivariate models.

Q3. Table 2 and Table 3, the author compared the serum lipid levels and metabolic parameters between GG+GC genotype and CC genotype. I would personally like to see these differences among GG homozygotes, GC heterozygotes and CC homozygotes.

Q4. While reading table 6, there seems to be cases/controls without genotype and clinical data. I suggest that the authors should state clearly these in this table. In addition, the authors adjusted for a list of variables including age, sex, etc, in the multi-variable models. I would like to know whether the ORs without adjustment for these variables are different from the adjusted ones. By definition, confounder has to be associated with the exposure (MTTP) and outcome (NAFLD). Could the authors clarify reasons for such adjustments?

Q5: In the titles of Table 4~ Table 6, the author named” the risk impact and interaction of the MTTP genotypes on …”, however, the authors did not present any interactions results for gene-environment or gene-gene.

Q6: The authors stated that there was strong linkage disequilibrium between -493 promoter G/T and Q297H polymorphisms. Could the effect of the -493 polymorphism found by other authors be in connection with the Q297H polymorphism?

Q7. Page 28, the fist row: Odds ratio (95% confidence interval) instead of Odds ratio

Q8: Finally, should the Q297H polymorphism be considered as a causal or additional factor of NAFLD?
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests