Reviewer's report

Title: A novel mitochondrial DNA mutation associated with hypertension in C4329A mutation between tRNAIle and tRNAGln genes

Version: 4 Date: 7 March 2014

Reviewer: Jinyu Huang

Reviewer's report:

In this report, Liu et al. described a Han Chinese family with essential hypertension by molecular screening for the candidate pathogenic mutations in mitochondrial genome. This is an elegant study integrated the clinical, genetic and molecular characterization of the association between a novel mt-tRNA mutation and hypertension. Although the manuscript has some less formal description, it won’t affect it being accepted and published.

Major concerns:

1. The Abstract section, the author indicated that “Cells carrying this mutation were also shown to harbor mitochondrial dysfunction”. Since there is no functional analysis performed in this study, please clarify whether there is evidence to support this conclusion.

2. Reference citation listed in the paragraph is misleading, for example, the Introduction section, “These mutations include T3308C in ND1, A4436G in tRNAMet”, were apparently wrong. Moreover, it should be noted that, the citation for the A4296G mutation in tRNAIle gene was missing.

3. Please add the clinical information about this Chinese family.

4. Please indicate the haplogroup of the complete mitochondrial sequence data presented in Table 1, and discuss the role of mitochondrial genetic background in hypertension expression.

5. It looks as if the C4329G mutation is in heteroplasmic form in Figure 2B, but the authors regarded it as a homoplasmic mutation, please let me know why it is not heteroplasmic.

6. Please explain why other mutations, such as C4467A mutation in tRNAMet gene which was evolutionary conserved, did not play a role in the clinical manifestation of essential hypertension in this Chinese family.

7. The writing is acceptance.

Minor concerns

1. It would be better if the authors could change the title into “Molecular characterization of a Chinese family carrying a novel C4329A mutation in mitochondrial tRNAIle and tRNAGln genes.”

2. Authors’ affiliations: It should be “Department of Genetics”, not “Deparment of
Genetics”.
3. Background section: Line 2, “In china”, it should be “In China”.

**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:**

No