Reviewer's report

Title: Mitochondrial DNA Mutations in Oxyphilic and Chief Cell Parathyroid Adenomas

Version: 1 Date: 7 April 2007

Reviewer: yufei shi

Reviewer's report:

General
The findings are interesting and novel. However, the paper could be strengthened if the following points are addressed.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Total 393 homoplasmic sequence variants were identified. Among them, only 11 were somatic mutations. Although somatic mutations are generally pathogenic, the remaining germline sequence variants may also contribute to disease development. The nature of these mutations should be presented in a table, esp. those 32 variants predicted to affect rRNA or tRNA.

2. How the authors explain such a high frequency of germline sequence variants present in both tumor tissues and peripheral blood DNA? Are they mutations?

3. 33.3% (6/18) chief cell adenoma had somatic mtDNA mutations as compared to 75% (9/12) oxyphil adenoma. I am wondering whether those germline sequence variants also had the same distribution. If they do, these variants may be mutations.

4. mtDNA transitional mutations are most often detected in tumor samples as reported in the literature. The interesting part of this study is that high frequency of somatic insertion/deletion was found in tumor samples (29.62%, 8/27 mutations): 18.51% (5/27) in oxyphil adenoma and 11.11% in chief cell adenoma. Was insertion/deletion ever found in those variants?

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The authors should include a figure showing those mutations, insertion or deletions.

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

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