Reviewer’s report

Title: Ancestral DDT Exposures Promote Epigenetic Transgenerational Inheritance of Obesity

Version: 2 Date: 30 August 2013

Reviewer: George Zhang

Reviewer’s report:

This is an interesting topic and there were a lot of data and results presentations.

# Major Compulsory Revisions: Q 1 and Q 3b and 3c.

# Minor Essential Revisions: others - Q2, Q 3a and 3d, Q4

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1. Page 12 / Statistical analysis of rat organ and disease data.

"For the number of rats with disease, logistic regression analysis was used to analyze the data (control or DDT and diseased or unaffected)."

The logistic regression modeling process was not very clear.

1a. Please explicitly specify what variable was binary outcome. What and how many variables were taken as predictor variables?

1b. How many individuals and events among them were run by the model? Based on current sample size, how many predictor variables should be included at most?

1c. How to know the model was fitted well? Any overfitted issues?

2. In general, the statistical methods should be described briefly, should not be guessed by readers.

3. Fig 1

3a. What specific statistical tests were used to get the p-values on the figure? The names of statistical tests are recommended to be described in the legends of figures if a p-value or significance testing was reported.

3b. Page 12 / Statistical analysis of rat organ and disease data.

"t-tests were used to determine if the data from the DDT lineages differ from those of control lineages."

Was t-test used to get the p-value in Fig 1(a) and (b)? e.g., p=0.10 by comparing "4/25" F3 DDT group vs. "1/29" F3 control group?
3c. Any multiple comparison issues? How to adjust for them?

3d. The significance level had just one corresponding symbol in the figure legend, but there were both “**” and “****” in the figure.

To be consistent, please refer to the legend for Fig. 3 (p. 38).

4. Please do similar modifications for Fig 3 and Fig 4.

**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.