Reviewer's report

**Title:** HFE Gene Variants Modify the Association between Maternal Lead Burden and Infant Birthweight: A Prospective Birth Cohort Study in Mexico City, Mexico

**Version:** 1  **Date:** 10 March 2010

**Reviewer:** Pam Factor-Litvak

**Reviewer's report:**

This paper presents novel and interesting data regarding variants in genes associated with iron stores and iron metabolism and birth weight. The study is well done, and the analyses are appropriate. There are just these three minor concerns which need to be addressed:

Minor essential revisions:

1. Please clarify the results in table 5. In particular, the estimated coefficient between infant wildtype/maternal variant and birth weight is given as +143.0 grams.

2. Some explanation of how the maternal variant/infant variant interaction would biologically work is needed. Are there other examples of maternal - infant gene interactions?

3. Another possible explanation for the hemoglobin finding (particularly since better measures of iron status and iron metabolism were not obtained) is that lower hemoglobin concentration is also associated with insufficient oxygenation of the blood, including blood going to the placenta (and the fetus). Please comment.

**Level of interest:** An article of importance in its field

**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.