Reviewer's report

Title: Xenoestrogenic activity in blood of European and Inuit populations.

Version: Date: 18 November 2005

Reviewer: John A. Thomas

Reviewer's report:

General

1. This Study represents a very ambitious undertaking of very complex endocrine relationships.

2. It is always difficult to interpret findings involving a mixture of POPs. Examining complex mixtures and their interactions is biologically demanding and unusually difficult to understand singular events. It is also necessary to understand that multiple chemical interactions can be both agonistic and antagonist, and that the final integrated measurements may represent only a 'net' effect.

3. This manuscript is mathematically comprehensive, but toxicological disappointing.

4. This Study includes a diverse male cohort, yet median serum testosterone, estradiol, SHBG, inhibin and gonadotropins (LH & FSH) were very similar. XER-EEG median values were somewhat incomplete, and median XER were basically the same. Both median CB-153 and DDE values were represented by a wide range of values with no obvious geographical pattern. While the Authors have provided some interesting mathematical findings, their results are not really elucidating since blood levels of sex steroids and gonadotropins remained essentially unchanged.

5. While this Reviewer cannot fully appreciate all of the statistical procedures utilized in this Study, the findings do not indicate that POPs had any significant toxicological on serum level of the various hormones that were measured.

6. Finally, the Authors really did not examine any 'direct' biomarkers in male target organs and hence cannot clearly address the action of POP on the fertility, semen or sperm.

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

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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)

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Discretionary Revisions (which the author can choose to ignore)

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Level of interest: An article of limited interest