Reviewer's report

Title: A retrospective study of PBDEs and PCBs in human milk from the Faroe Islands

Version: 1 Date: 17 May 2005

Reviewer: Per Ola Darnerud

Reviewer's report:

General

The article shows the levels of PBDEs, PCBs and PCB-OHs in breast milk from Faroese women, sampled at different time points. As regards environmental pollutants the Faroese population has been extensively studied, especially pregnant women and mothers with small children and in particular in connection with fish consumption and potential health effects. However, there are some details that needs to be dealt with before the manuscript should be published. They are listed below and if followed I believe they will improve the quality of the article.

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

As a general comment on the document, the authors should include a discussion about the representativity of the women recruited in the study, adding some comments about possible selection bias. In 1st paragraph of the Discussion, the time trends for BDE-47 and BDE-153 are discussed in relation to other studies. The facts that the present samples are rather few, that they are pooled and that they are sampled in a way that they may not be representative for the Faroese pregnant women (see note under Materials and Methods, Sampling) should make the authors careful to draw too far conclusions on time trends for these two, and perhaps also for other congeners. This comment is valid for several paragraphs in Discussion. Moreover, the expression "trend" used in this manuscript may implicate that the study has been using a number of data points, producing a regression line on basis of values adjusted for important factors, such as age etc. We know from earlier studies that the age of the mothers is an important factors to adjust for, at least regarding PCBs. This has not been done and therefore the term may be changed to “changes in levels over time” or some similar term.

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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)

(Referee's comment: I have not divided my comments into MER or DR)

Abstract

- Background, line 4: “...the temporal trend." Consider another term (see above).
- Results, line 7: The high levels reported, in relation to other European countries, must be taken with some caution, as the number of samples is relatively small.

Background

- 2nd para., lines 9-10: A question – are the marine mammals mentioned in this sentence that stationary, being considered to specifically represent industrially parts of the world with respect to PBDE levels?
- 3rd para.: In this paragraph, the authors review present data on PBDEs in human breast milk. Regarding the review of Swedish data, I miss the study of Lind and co-workers who monitored PBDE levels in individually sampled breast milk from Uppsala mothers (Lind et al., Environ. Res. 93
(2003), 186-194). In this study a comparison to the Stockholm study by Norén and co-workers was made and the time-related changes observed were shown to be similar to each other.

Material and Methods
- Samples, lines 2-3: The term transition milk is unknown to me and should preferably be explained.
- Samples: In this paragraph, the sampling strategy is explained. How can the authors be sure of that the strategy to pick certain numbers of women eating different amount of whale meat will not in some other way lead to sampling skewness as regards levels of PCBs and PBDEs. Also, why was it not possible to analyse all the samples individually in order to study the distribution in levels also at the earlier time-points?
- Instruments: The description of the GC and GC/MS conditions seems too detailed and may be shortened. On the other hand, no information is given on how the quantification was performed; for instance, was internal standard used, was one- och multipoint calibration performed? Also, where blanks used and what was the results from the blank analyses?
- Cleanup procedure: The title should preferably be altered to Extraction and cleanup procedure. In the 1st para., it might be informative to mention that the original method (Hovander et al.) was used for analysis of serum samples for PCBs and OH-PCBs. In the 2nd para. data on two of the four used surrogate standards are presented – why not on all four? Perhaps these data should be presented in Results?
- Recovery experiments: The text tells us about a recovery study performed in triplicate on two spike levels. However, in Table 3 data on the higher level is given in duplicate.

Discussion
- 1st para.: The wide distribution range is discussed and reference is made to US data. In this case, it should be of interest to include the Swedish data on individual samples that are present (Lind et al., 2003), as these represent the Nordic body burden situation.
- 3rd para., lines 10-end of para.: These sentences should perhaps be somewhat more developed, to increased the clarity for the reader. For instance, if the same congeners are reported from time to time, is it important whether the levels are reported on molar or weight basis?
- 6th para.: The discussion in this paragraph is somewhat difficult to follow regarding the possible sources to PBDEs in breast milk. Is the traditional Faroese diet of importance for PCB/PBDE levels found in breast milk and what data are supporting this?

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.