Reviewer’s report

Title: Estrogen-like activity of seafood related to environmental chemical contaminants

Version: 1 Date: 29 December 2005

Reviewer: Marieta Fernandez

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Major revisions
Methods
1. Methods are not well described and there are not sufficient details for the study to be replicated.
2. Are all of the selected marine organisms seafood? The word “seafood” appears in the title while in the text the authors refer to “fish, mollusc, seafood”, which is confusing. Could also the authors add the commercial name?
3. The following need to be specified: Sampling and sample preparation, time of year for the sampling campaigns, sea area, fishing port, and dates.
4. You have included several specimens from the same species. Are they from the same sea area, fishing port, and dates? Other authors have pooled samples to avoid inter-individual variability. We would appreciate some discussion on this issue.

Table 1: How do you calculate Total PCB? It is not clear if you include mean or median. In any case, the standard deviation and lipid content of the species should be included in the table.
Table 2: Standard deviation should be included in the table.

Comment: Fat content of an organism, the characteristics of organochlorine compounds, and other factors such as differences in the physiological condition of individuals may influence organochlorine bioaccumulation. Normalization of concentrations to lipid content generally reduces the variability.

Results and Discussion
I recommend consideration of the following in the Discussion
1. The biological effects of polychlorinated biphenyls (PCBs) are often similar to (although less potent than) those of TCDD by activating the aryl hydrocarbon (Ah) receptor. Additionally, some PCBs or mixtures of PCBs exhibit estrogenic activity, whereas others are actually antiestrogenic.
If the authors measure the combined estrogenic effect using the yeast reporter gene assay, they should discuss the estrogenic properties of the PCBs in this and other estrogenic bioassays. In addition, this approach (adding together individual results) may misrepresent the combined effect of different EDCs because some compounds may have antagonistic activity whereas others have agonistic activity, thereby limiting the interpretation of chemical data. Therefore, there is a need to perform assays that measure the combined effects of EDCs in presence and absence
of endogenous hormone.
2. Comparisons should be made with findings of other studies in which edible marine species (at least those from the Adriatic Sea) were analyzed for their PCB content.
3. Could the authors clarify how the predicted response was calculated?

Minor revisions
Page 7: PCB118 hexachloro instead pentachloro
Page 13: DR “participated” instead “partecipated”
Reference 10: Brouwer A instead of Brouwer AM; Longnecker MP instead of Longnecker P; Cogliano J instead of Cogliano L.
Reference 11: Judd N instead of Judd NW; Griffith WC instead of Griffith C.