

Author's response to reviews

Title: Mercury concentrations and immune effects in harbour seals: how do these link to in vitro exposed peripheral blood mononuclear cells from seals and humans?

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Author's response to reviews: see over

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Response to referees

First of all, I wish to thank the referees for their remarkable work on the first draft of the manuscript. I really appreciated the time spent by them to improve the present work.

All general and specific comments were integrated. Sections were shortened as requested. Draft has been edited by ISLV Editing and Translation services (Liege University).

1. Reviewer: Dr Bustamante

Remark 1: Hg and MeHg were used consistently throughout the text except the first time they appeared and $\mu\text{g.ml}^{-1}$ and $\mu\text{g.g}^{-1}$ were used consistently throughout the text.

Remark 2: All references were checked through Endnote using Environmental Health standard

Remark 3: Siebert, personal communication was replaced by non published data

Remark 4: Introduction has been modified according to both referees: shorter and straight-line

Remark 5: Bloom 1992 has been included in references as well as Storelli et al. 2002

Remark 6 to 13: modified accordingly

Remark 14: The blood tubes are different from those used for functional test, modified in the text

Remark 15 to 30: modified accordingly

Remark 31: Methodology has been completed (hypotonic plus isotonic buffer)

Remark 32 to 35: modified accordingly

Remark 36: modified: both correlations are provided in Figure 1

Remark 37: modified: coefficients with two decimals

Remark 38: modified accordingly

Remark 39: Cytosolic fraction is appropriate: text has been modified to make to protocol clear. Protocol has been described in Guillemain et al. 2005

Remark 40-42: Modified accordingly

Remark 43: I do not fully agree with Dr Bustamante when he states that PBMC are not the best indicator for immunotoxicity of MeHg. One hypothesis is that PBMC of human and seals react in a comparable way but that mechanisms of defense are elsewhere such as complex demethylation processes described in liver.

References: References have checked and corrected through Endnote.

Figures: Controls are not missing as all percentages are expressed relative to controls.

2. Dr Christian Sonne

Manuscript was checked by native speaker. I hope that the manuscript flows more easily.

Specific comments

C1. Title has been modified: “Mercury concentrations and immune effects in harbour seals: how do these link to *in vitro* exposed Peripheral Blood Mononuclear Cells from seals and humans”

C2. Affiliation 3 in Germany

C3. Corresponding author is Krishna Das

C4. Investigation was carried out when Sonja Fonfara was a GKSS scientist and it seems that GKSS address should be kept.

C5. Abstract has been deeply modified according to referee’s comments.

Background

The section has been shortened and more focused.

Materials and methods

This section has been re-written in a more logically way. It has also been shortened with links to previous published works using same methodology. Subheadings were renamed to make more sense to the reader. A stat section has been introduced. Age determination cannot be realized on free-ranging harbor seals. All other specific comments were integrated within the text.

Result section

Result section follows now the sequence of summary and analyses presented in abstract. Again this section was re-written to integrate all specific comments.

Discussion

All specific comments were integrated and discussion was shortened to focus on the results.

Table 1 could be an additional file (up to the Editor)



Krishna Das