Reviewer's report

Title: Brain injury associated biomarkers TGF-Iα21, S100B, GFAP, NF-L, tTG, Alβ2PP, and Tau enhanced and UPS impaired concomitantly during acute brain injury caused by Toxocara canis in mice

Version: 1 Date: 4 March 2008

Reviewer: Carmen del Aguila

Reviewer's report:

The manuscript by Liao et al. describes the usefulness of using biomarkers associated to brain injury (BIAB) to understand cerebral toxocariasis. The study adds new material to our otherwise very limited understanding of cerebral toxocariasis (CT). Based on the results shown further studies are claimed in order to determine a possible association between CT and neurodegenerative disease.

The scarce data and the limited knowledge on this potentially invalidating parasitic disease merits the manuscript by Liao et al for publication, although intensive additional editing for grammatical usage would be necessary. However, I have some concerns that the authors may want to consider:

1. - Several mouse strains have been used in experimental murine toxocariasis. The authors selected ICR mice, but they donâ€™t justify the choice. Other strains, such as BALB/c, have shown more efficient larval migration to the brain. Please justify why you donâ€™t use it. The choice of the strain is important, because you have used extremely reduced mice groups (two or three mice per group) that may be very heterogeneous as shown: five brain larvae found with a SD of seven in the 8 week post inoculation group; and in the 1 and 4 wpi groups not all the mice had at least one larvae in the brain.

2. - In the results section of the abstract please specify the other BIAB that increases during CT.

3. - Tau or tau, please review this and other misspellings throughout the manuscript.

4. - The manuscript may be easily shortened. For example, concise information about primary antibodies used should be included in the methods section, but Table 1 should be eliminated.

5. - Table 2: please review the font size and organise it properly

6. - Fig 2: numbers of larvae? Number should be in singular. Please review this grammatical usage throughout the manuscript.

7. - Fig 2. As mentioned in point 1, it is surprising that SD of w8 is higher than the mean value obtained. Is it a question of mice variability or the method for larvae
recovery may be involved, as well as the homogenization of larvae inoculums? If it is a question of mice heterogeneity you should use a bigger mice group.

8. - It is not clearly stated what you measure as fold of control in Fig 5, 6, 7. In the WB you show a control line that I understand corresponds to uninfected mice, doesn't it? However you say in line 17 pg 11 that the relative amounts of targeted proteins were expressed as optical density relative to that of the ß-actin. Moreover, the spot showed on fig 5, D3 for TGF-B1 is clearly smaller than the control, however in B you show a bar indicating a higher result with nearly no SD, but ß-actin spots looks similar for D3 and control. Please clarify.

9. - Time or times after infection? Please review tables.

10. - Fig 8 (E): labels are illegible.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.