Reviewer's report

Title: COX-2, CB2 and P2X7-immunoreactivities are increased in activated microglia of multiple sclerosis and amyotrophic lateral sclerosis spinal cord

Version: 1 Date: 10 January 2006

Reviewer: Hermann Schluesener

Reviewer's report:

General

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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)

The authors localize expression of COX-2, P2X7, and CB2 in MS and ALS tissues by immunochemistry and autoradiography. In general, this study is well-performed with a clear description of methods used. The quality of the figures is good.

There is some minor criticism to this manuscript:
1. A sound neuropathological description of the MS lesions (type of plaque) should be added to the manuscript.
2. Throughout the manuscript, the term “microglial cells/macrophages” should be used, as a clear-cut separation of these populations in the inflammatory lesions is not possible and the use of morphological criteria might be misleading.
3. There are some differences to reports from other groups and these should be discussed: Notably, expression of markers in the endothelia and in neuronal cells.
   This is of course important to the rather bold process of image analysis. Staining by peroxidase is non-linear. In addition, other cell populations might contribute. Further, information on cell-populations with different staining intensity will lost during this process.

Western blotting: The authors state that: “Similar results were obtained on two separate occasions”. This is a somehow strange statement. Were there more “occasions” with different results? The authors should rephrase this sentence appropriately.

Some of the findings and conclusions, notably with respect to COX-2, have been published by other groups much earlier and indeed clinical trials had been suggested already in 2001... Thus, the concluding wake-up call for “urgent evaluation in the progression of MS ans ALS” is a bit late. Anyhow, this is an interesting manuscript compiling relevant data.

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Discretionary Revisions (which the author can choose to ignore)
What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No