Reviewer’s report

Title: Differential expression of the capsaicin receptor TRPV1 and related novel receptors TRPV3, TRPV4, and TRPM8 in human traumatic and diabetic neuropathy

Version: 1  Date: 19 March 2007

Reviewer: Haoxing Xu

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)

Facer et al examined expressions of several TRP channels in human neuropathic tissues. These TRP channels have been previously implicated in temperature sensation, nociception, and pain. Using immunochemical methods, they found that both TRPV1 and TRPV3 are increased in injured nerves, while TRPV4 and TRPM8 remain unchanged. These results, although largely descriptive, are important results obtained from human tissues with implications on human sensory neuropathies. There are also other interesting elements throughout the paper. These include expression of TRPM8 in glial cells and TRPV3 in motor neurons.

My specific comments are as follows:

1. The presentation of the manuscript can be improved. With four different channels studied in different areas/tissues and different neuropathic models, the readers can be easily confused. Therefore, the authors may want to put on a table to summarize their results.
2. No negative control was provided regarding the specificities of these antibodies. I would expect this information presented at least in first two figures. Peptide block is minimal if no second antibody is available to obtain similar results. In Figure 1, there are lots of stainings that are not nuclei-excluded. The authors may need to comment on this, especially since authors are using immunochemical methods rather than immunofluorescence approaches. The former approach may result in more background.
3. The title is vague. The emphasis should be on differential regulation in normal and neuropathic tissues, and on your positive data, i.e. TRPV1 and TRPV3.
4. More quantitation is desired. For example, what is percentage of motor neurons positive for TRPV3? And numbers (for example, percentage of area TRPV1/3 immunoreactivities) should be stated in the text as well.
5. Provide a micrograph for peripherin as a control.
6. More labels can be added for some figures. In general, figures should be as self-explanatory as possible. For example, you can add “epidermal” and “sub-sub-epidermal” into Figure 9A & B.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory 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, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests