Reviewer's report

Title: Identification of novel KCNQ1 and KCNH2 mutations and the protective effect of KCNH2 SNP K897T in Long QT Syndrome families

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Reviewer: Jonathan Skinner

Reviewer's report:

The authors present the results of a lot of work with large families, and in particular report two novel LQTS mutations. While these are nicely presented, I find that it detracts from the most interesting part of the paper, the cosegregation of the SNP K897T in KCNH2. The result is rather a lack of data on this most interesting part- I'd like to read more about the separation of these SNP carriers and non-carriers- symptoms as well as QT intervals. At present the only data of interest is summarised in figure 3D. The paper reads like a list of findings which are not really connected. Its all very good work, and the authors are to be congratulated on that, but I'd suggest separating these aspects out- providing a paper which focuses on the SNP aspect. If they wish to keep some of the other data in, then I suggest tabulating it, but keep most of it out of the text which I found hard to read. Lets hear more about this particular family, which is fascinating.

Major compulsory revisions

Basically summarised above, I think the paper should be re-written, with much data taken out, and focus purely on the mutation A490T and its cosegregating SNP, with more data about this part.

The rest really follows with that, so I won't go into further details.

Level of interest: An article of importance in its field

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'