Reviewer's report

Title: Induction of beta Defensin 2 by NTHi requires TLR2 Mediated MyD88 and IRAK-TRAF6-p38MAPK Signaling Pathway in Human Middle Ear Epithelial Cells

Version: 1 Date: 12 February 2008

Reviewer: pearay L ogra

Reviewer's report:

This is an interesting study in which the investigators have demonstrated Induction of b-defensin 2 via TLR 2 sactivation following in vitro and in vivio exposure to NTHi.

Specific comments:

1. Background Para 2, line 1. Palate, Lung and nasal epithelium are not simply "molecules". This sentence could be re written.

2. Materials and methods . Para 1, Line 11. Did you examine the cellular debris also for b defecnsin 2 induction.

para2 ,line 2. MEEC cell line is an immortalised line with human papilomavirus. It would be important to to know if primary cell lines behave simmilarly and if viral induced cell activation is necessary for the TLR activation in this setting. It would also be helpful to know if the b defensin induction is LPS dependant.

3. Figure 4. The abbreviations used here should be explained somewhere in the text or in the figure title.

4. Figure 7. Although the data are reasonably straight forward it would be helpful to provide a unifying concept as to how all the intermediate pathways of signalling cascades are orchestrated in the eventual b defensin 2 activation.Is it possible that the principal mechanism is signal transduction for example at the level of Nf-kB. The authors should discuss the possisility and revise the discussion.

5. The study has demonstrated b defensin 2 mRNA activation. Does such increased message in fact result in increased b defensin 2 soluble product .

6. It is not clear what particular component of the NTHi is responsible for the defensin activation. Is bacterial replication in the cells required for such activation.

7. Tha munscript is little too long with many figures. the manuscript could be shortened and the discussion limited to data reporetd here. Figure 7 could be deleted, unless it provides a more data based unifying summary of b defensin activation.

What next?: Accept after minor essential revisions

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 have no competing interests