Reviewer's report

Title: Microarray analysis identifies a set of CXCR3 and CCR2 ligand chemokines as early IFNB-responsive genes in peripheral blood lymphocytes: an implication for IFNB-related adverse effects in multiple sclerosis

Version: 1 Date: 5 April 2006
Reviewer: Lyn Griffiths

Reviewer's report:

General

This is a well presented article that investigates the effect of interferonß on proinflammatory chemokines in vitro. The study investigated IFNß responsive genes in peripheral blood lymphocytes using a microarray approach. However, there are a number of criticisms and minor corrections that need revision.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Firstly, the title of the paper needs to more clearly define the study. Hence “in vitro” and “from healthy individuals” needs to be included. The study was clearly undertaken on PPBMC from healthy individuals and using an in vitro approach. Thus conclusions of relevance to MS individuals may not be clearly extrapolated particularly considering the complexity of the disease and the variations that may occur from in vivo rather than in vitro response. This is particularly important and should be stressed more in the abstract and the discussion.

Another concern regarding this study is that it only involved 3 individuals. This is very low power and the authors need to clearly identify this issue in both the methods and the results discussion. Also, the methods sections should outline how efficiency corrections have been undertaken for the real-time studies, providing more details on how standardization was carried out.

Finally, the discussion section of the paper should stress that the study was undertaken on healthy not MS individuals but they still should provide more of an outline of other microarray studies of MS which are of relevance to the interferon treatment response. As an example, the authors should mention that CXCL10 (SCYB10), a ligand of CXCR3, has been previously been found dramatically over expressed in chronic active and acute plaques, and they should discuss the role of IL8 in vivo, especially because I18 is known to be inversely correlated to the estrogen receptor. The authors should also discuss which genes (from their array results) are involved activating/inhibiting the introduction of MHCI/II, for example, interferon regulatory factor 2 has been shown to indirectly inhibit MHCI is very relevant.

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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)

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Discretionary Revisions (which the author can choose to ignore)

**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:** Needs some language corrections before being published

**Statistical review:** No