Reviewer's report

Title: Small non-coding RNA signature in Multiple Sclerosis patients after treatment with Interferon-beta

Version: 1 Date: 25 January 2013

Reviewer: Maurizio Taglialatela

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Minor essential revision.

The revised version of the article by de Felice et al. is significantly improved over the first submission. Most issues I raised in my previous review have been addressed; however, I still believe that some questions remain unresolved. In particular:

1. In point 7 of my review regarding figure 5, I found the data plotted rather difficult to understand. If after 6 months of INFbeta treatment, one parameter (mir26a-5p expression) is found upregulated, and another (DGL4 expression) is downregulated, no doubt that there will be a negative correlation between the two. However, why the population stratifies in two clearly distinct, separate groups is rather strange. It would be helpful if the authors could be more explicit about what are they really plotting in Fig. 5.

2. In general, the manuscript is rather poorly written, with very little attention to details. Some sentence are just difficult to follow. Just a few examples:
   a. Abstract: “…ncRNAs that were associated with responder MS patients response to IFNbeta”; “…Significantly different in the IFNbeta response”.
   b. Background: “…To shed light into the mechanism …” this sentence is incomplete.
      “…3 and 6 months treatment of IFNbeta treated RRMS patients.” Again, the concept in the last sentence that has-mir-26a-5p is upregulated depends on patients response cannot be said, as there is no comparison with non-responders (could be just a marker of disease progression!).
   c. Materials and Methods: the ethic approval statement is repeated twice.
      “Patients were either treated … at 3 or 6 months”. Most likely, patients were treated throughout the study, and blood samples were taken at 3 or 6 months.
   d. Results: fig. 3 is referred to in the text before Fig. 2, please change. On page 12, last sentence, DLG4 is mentioned as up-regulated, whereas data show it is down-regulated.
   e. Discussion. Last sentence: DLG4 is referred to as a glutamate transporter, whereas it is not.
   f. Figures. Fig. 3: label of the y axis: has-miR, please change to has-miR. Top label: beta should by in greek symbol.
Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.