Reviewer’s report

Title: Entrapment Neuropathy Results in Different MicroRNAs Expression Patterns from Denervation Injury in Rats

Version: 1 Date: 13 May 2010

Reviewer: John McCarthy

Reviewer’s report:

The purpose of this study was to compare miRNA expression in the soleus muscle, DRG and L4-L6 nerve segment in response to nerve compression/decompression and denervation. The rationale for performing the study was supported by previous studies examining miRNA expression in nerve and muscle tissue.

The most significant finding of the study is the difference in miRNA expression in response to nerve compression and denervation in the soleus muscle and DRG, though more drastic in the soleus. Unfortunately, the impact of the study is limited because the follow-up experiments are not well justified (why did the authors devote so much effort to looking at miR-21 in the DRG?). The study could be much improved if the authors focused on one or two miRNAs that were differentially expressed in response to the treatments. For example, miR-466b was the only miRNA that showed a change in expression in both the soleus and DRG. It would be of interest to validate this finding by PCR and then to examine some predicted target genes for miR-466b.

Alternatively, the authors could do a more comprehensive analysis by compiling a list of target genes from the differentially expressed miRNAs from the soleus and DRG and then perform a gene ontology analysis to determine what processes may be regulated by miRNAs with denervation and nerve compression.

Without such additional analysis the study is too descriptive and limited in its usefulness.

Minor Essential Revisions
1. Introduction. The sentence starting with “In entrapment neuropathy…” needs to be rewritten because it was very confusing.

Major Compulsory Revisions
1. Some output measurement needs to be provided to demonstrate the compression/decompression and denervation interventions worked such as soleus muscle weight.

2. Predicted gene target analysis (see above comments).
Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.