

OPEN PEER REVIEW REPORT 2

Name of journal: Neural Regeneration Research

Manuscript NO: NRR-D-20-01008

Title: Genome-wide interrogation of transfer RNA-derived small RNAs in a mouse model of traumatic brain injury

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COMMENTS TO AUTHORS

In the manuscript, the authors assess changes in levels of tsRNAs (transfer RNA-derived small RNAs) following traumatic brain injury. This type of evidence is lacking in the field of TBI and therefore would be a useful contribution to both the brain and spinal cord injury field. The authors show that several tsRNAs are up/down-regulated 72 hours post-injury. The data are interesting and the manuscript is well written, providing an insightful discussion into the subject area. I do however have some questions for the authors to address in order to clarify aspects of the study.

Methods:

- RNA extraction. Can the authors give details on the volume and/or dimensions of the tissue resected for RNA extraction? The mention of perilesional cortices suggests that a large area of tissue is used for RNA extraction, however, if this could be clarified it would be useful.

Likewise, for the methodology surrounding the tsRNA library construction, sequencing, and method of data analysis - can the authors provide a reference to this methodology either through their own work or from other publications?

Abstract: The authors state that 56 tsRNAs were up-regulated and 47 tsRNAs were downregulated. Do the authors want to state whether these changes were significant?

Minor:

Abstract, Line 33/34. "...target genes unveiled that the significantly enriched 'terms'...." should 'terms' be replaced with 'genes'?

Methods, Page 5, Line 23. 'Demethylate'

Results, Page 9, Line 40. 'Upregulated'

Discussion, Page 12, Line 17. '....oxidative stress, such as application of arsenite and hydrogen peroxide,...'