OPEN PEER REVIEW REPORT 1

Name of journal: Neural Regeneration Research

Manuscript NO: NRR-D-19-00628

Title: GDNF effectively predicts cognitive impairment in Parkinson's disease

Reviewer's Name: John Mitrofanis

Reviewer's country: Australia

COMMENTS TO AUTHORS

This study explored the relationship between the serum levels of GDNF and its precursors with cognitive impairment in Parkinson's disease. The relationship between GDNF levels and precursors and cognitive scores was assessed by enzyme-linked immunosorbent assay. They found that GDNF levels were lower in cognitive impaired patients compared to normal patients, but not however, compared to the healthy controls. The levels in Parkinson's patients was much higher than in the other groups. The precursor levels were no different in any of the groups. The subject numbers are at a good level and the methods seem fine. The results are somewhat difficult to interpret however, despite the well matched groups and when comparing to previous studies.

I'm not sure that measuring GDNF levels could be a biomarker or predictor for the disease when assessing people that already have it! Perhaps the wording could be modified. I would have liked a much clearer explanation of why the GDNF levels were higher in the Parkinson's group, and why it was lower in the cognitive impaired group? What do the authors think? There is a lot of dialogue in discussion of what other studies have found, some of which is related, but there is no clear direction offered by the authors. Such a direction would strengthen the case for this report and their overall findings. Even a schematic summary diagram of what is going on what be of enormous help. This could be a study of interest if it clarified a few issues