Reviewer's report

Title: Investigation of G72 (DAOA) expression in the human brain

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Reviewer: James Potash

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This manuscript reflects a large body of work aimed at examining expression of one of the most discussed genes in psychiatric genetics: G72 (DAOA). It finds a lack of detectable expression in a variety of human tissues including 13 brain regions, cell lines, and schizophrenia brain samples. This is an important negative paper given the level of attention G72 has received as a candidate gene for schizophrenia and bipolar disorder.

The major concern is the unresolved question of the discrepancy between this negative finding and other positive ones, particularly Korostishevsky et al, which found G72 expression in the DFPLC region in samples from the Stanley Brain Collection, and Kvajo et al, which detected protein in the amygdala.

Major Compulsory Revisions

1. p.15: “a carefully selected set of human post-mortem brain BA10 samples”: please indicate what collection these samples were obtained from. If they were not the same samples or the same collection that Korotishevsky et al used, could the investigators assay those Stanley samples for a direct attempt at replication with the prior study? If results are discrepant, could the investigators offer possible reasons for the discrepancy?

Minor Essential Revisions

2. p.21: “Kvajo et al claim to detect…” It would be helpful to have the authors offer some possible explanations for the difference between the Kvajo study and their own. This would help the reader to assess the issue of whether G72 mRNA/protein is or isn’t actually present in the human brain.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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