Reviewer's report

Title: Plasma long non-coding RNA BACE1 as a novel biomarker for diagnosis of Alzheimer disease

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Reviewer: John Ringman

Reviewer's report:

This is an interesting paper that looks at novel plasma biomarkers for AD. RNA is receiving increasing attention as a biomarker in AD and other diseases and this paper provides preliminary evidence for some utility of RNA for BACE1 in plasma being of diagnostic utility. Perhaps more importantly, the observation of increased RNA for BACE1 in plasma provides a window into the potential role of this enzyme in AD pathogenesis.

A strength is that the control cohort were neuropathologically verified to be without AD or other pathology.

Major comments:

In the Introduction there should be some explanation for why BACE1, BC200, 51A and 17A were chosen to study. Other than BACE1, it is not stated what these other RNAs code for and the scientific rationale for choosing them.

Minor comments:

There is an acronym "CAD" in the abstract. What does this stand for?

The Methods section describes the preparation of samples from the AD cohort but not the control cohort. Were the methods different?

The Methods section describes 2 different sites of primers used for BC200. Perhaps there is a mistake there? Was one meant to be 51A?

Table 1 should include the percentages of subjects in each category.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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