Reviewer’s report

Title: Comparative analysis of histologically classified oligodendrogliomas reveals characteristic molecular differences between subgroups

Version: 0 Date: 27 May 2017

Reviewer: Aaron Diaz

Reviewer's report:

The authors describe gene expression differences between molecular subtypes of gliomas, which were first diagnosed via histology as oligodendrogliomas. The WHO 2016 criterion defines oligodendrogliomas via the 1p/19q code and IDH mutation. The authors' clustering essentially identifies oligodendrogliomas, astrocytomas and glioblastomas, as evidenced by the fact that most of the IDHme class possess an ATRX mutation and those that don't have an ATRX mutation lack the IDH mutation (see Table 1). Comparing oligos to astros is somewhat useful, although recently done in Venteicher et al. 2017. If the authors want to compare oligos to astros, they should include all of the IDH mutant cases, not just the oligos. The significance of this work is not clear. The authors say they have identified molecular subtypes of oligodendrogliomas. But, what they have actually done is compare oligodendrogliomas (as defined by WHO 2016) to astrocytomas and glioblastomas that were previously classified as oligodendrogliomas under WHO 2007. The authors have not clearly indicated what hypothesis this work tests, or how the conclusions represent a vertical advance.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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