Reviewer's report

Title: Transcriptional profiles of pilocytic astrocytoma are related to the three different locations but not to the radiological features and clinical outcome

Version: 2 Date: 12 July 2015

Reviewer: Sandrine Rorive

Reviewer's report:

Minor essential revisions

In the study, the author presents the gene expression profile of 86 paediatric pilocytic astrocytoma (PA) and concludes that the gene expression level differs mainly according to tumour location (i.e. cerebellar, optic tract/hypothalamic and hemispheric).

The research question posed by the authors is easily identifiable and understood. The series is well-defined, large (86 cases) and representative regarding the clinical data of PA (% of the tumours in the different locations included and % of tumour progression). PA are tumours that should be studied in order to define new features regarding tumour progression. Unfortunately, only data regarding location are found to be discriminative in the result but this result is interesting.

May be the author should analysed the progression by matching the location (i.e. are recurrent PA different in terms of gene expression in a specific location?). Regarding the pathological data of PA, the author did not consider the microscopic infiltrative behaviour of their cases; this should be interesting to analyse regarding the different peritumoral extracellular matrix present in the different locations analysed.

My major comment concerns RT-PCR validation. The author did not explain the number of samples included in the experiment and the data are not provided in M&M, in the Text or in Table 5 (no clear legend). The author should clearly explain that the series use is independent and the clinical data of this second series should be added.

Minor comments:
- Line 87: ¼ -> should be replaced by 25%
- Line 50 & 93: dissemination # leptomeningual dissemination
- Figure 6: data not provided in English, no legend provided
- Line 362: problem regarding reference, a coma is missing

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interest's below