Reviewer’s report

Title: Altered expression of DLG1-AS1 distinguished papillary thyroid carcinoma from benign thyroid nodules

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Reviewer: Martyna Borowczyk

Reviewer's report:

The authors of the paper describe new methods of differentiating between benign and malignant thyroid nodules, which is an issue under high interest. Their data are unique - as they represent an analysis of circulating DLG1-AS1, which as far has been investigated only in tumor and adjacent non-tumor tissues. The group is considerably large, includes healthy controls, the methodology of genetic experiments is well written, and statistics is well calculated and convincing. The results are supported by the ROC curve with very high AUC. However, a few points should be corrected or clarified by authors.

In the Abstract section, authors fail to present any description of methodology - it should be rewritten.

The introduction section and the beginning of the Methodology section lag behind the rest of the paper - it is too general and contains linguistic errors - please, correct it. There is a lack of thyroid cancer genetic background brief description and a description of the role of IncRNA and authors’ explanation of a decision to study only one, this particular IncRNA.

At the beginning of the Methodology section - the inclusion and exclusion criteria are too general and misleading. "No therapies carried out" was described as one of the inclusion criteria. However, it may be confounding if beforementioned is information about patients’ surgical treatment. Those criteria should be much more precise. The time from the diagnosis, pTNM of patient’s tumors and preferably histopathological details with subtypes of papillary thyroid cancer or other information should be included in this section, preferably with detailed Table showing patients' clinicopathological data. If the group was heterogeneous, it might have biased the results.

Methods of DNA extraction not described.

The role of the expression pattern and function of DLG1-AS1 have also been investigated in glioblastoma. In the Discussion section Authors wrongly state that it was studied only in cervical cancer. The phrase needs to be corrected.

Linguistic corrections are needed - e.g., "We future studies will include more patients to further analyze the accuracy".

Additionally, the potential biases of the study are missing.
Finally, conclusions are a bit too concise; it is recommended to develop this paragraph.

**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:

Needs some language corrections before being published

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