Reviewer's report

Title: Clinical significance of erythropoietin receptor expression in oral squamous cell carcinoma

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Reviewer: Sheng-Po Hao

Reviewer's report:

Erythropoietin (EPO) has long been known to be the principal hematopoietic growth factor that regulates cellular proliferation and differentiation along the erythroid lineage. Recent studies have shown that EPO and erythropoietin receptor (EPOR) over the cell membrane may be involved in carcinogenesis, angiogenesis, and invasion in various cancers. EPOR overexpression in tumor tissue is associated with a poor prognosis in a variety of malignancies including breast cancer, melanoma, renal cell carcinoma, gastric cancer, pediatric tumors, and uterine and ovarian carcinoma.

In the submit article the authors aimed to evaluate the clinicopathological significance of EPOR expression in using RT-PCR and IHC to determine EPOR level in oral squamous cell carcinoma (OSCC).

They reached the conclusion that high EPOR expression in OSCC is associated with an aggressive tumor and poor prognosis and the EPOR can be used as a biomarker to predict the clinicopathological features and therapeutic target in OSCC.

The study is well designed and nicely completed. The manuscript is neat. Though there are some positive results, they cannot fully support the conclusion “high EPOR expression in OSCC is associated with an aggressive tumor and poor prognosis” in the abstract.

Major Compulsory Revisions:

The authors need to answer the following quires before the manuscripts being considered for publication in the BMC.

# Abstract section:
The authors need to describe the methodology (RT PCR, IHC, Western blot etc) they used to evaluate the EPOR expression in OSCC in detail.

# Materials/ methods section:
The authors need to provide more information on how they got the specimen for RT PCR and IHC analysis especially from which part of the tissues in advanced OSCC.

# Figure 1 Legend:
The EPOR was seen not only in epithelial cells but also in inflammatory cells. Does this impact the expression level of EPOR? Please explain.

# “Methods” section - IHC
The statement of strongly (+++), moderately (++) or weakly (+) positive seems redundant as the authors defined high level of EPOR expression to be staining > 10% of the tumor cells, but not the positivity. However, the authors should also consider using some semi-quantitative methods including staining activity and staining cells number to determine the EPOR level.

# The authors should rewrite the conclusions in the abstract section as they were not fully supported by the results.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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 interests.