Reviewer's report

Title: PRAF3 induces apoptosis and inhibits migration and invasion in human esophageal squamous cell carcinoma

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Reviewer: Alejandro Corvalan

Reviewer's report:

The manuscript entitled "PRAF3 induces apoptosis and inhibits migration and invasion in human esophageal squamous cell carcinoma" by Yuan et al attempts to define the role of PRAF3 which is the only member of the Prenylated Rab acceptor 1 domain family considered as a tumor suppressor gene in SCC.

To this purpose, Yuan et al evaluated 57 clinical cases and 2 ESCC cell lines. Using multiple techniques, Yuan et al demonstrated that a loss of expression in PRAF3 is linked to a worse prognosis in relation to clinical features such as pathological grade, tumor stage and lymph node metastasis.

Furthermore, the overexpression of PRAF3 induces cell apoptosis through both caspase-8 and caspase-9 dependent pathways, along with inhibited cell migration and invasion by suppressing the activity of both MMP-2 and MMP-9.

Taken together, Yuan et al suggest that PRAF3 may act as a negative regulator of tumor progression and metastasis in human ESCC. Although there are many interesting points made throughout the manuscript, the quality of English needs minor improvement (see examples below) and due to an excluded reference, I believe that one final review is needed before its publication.

In the abstract Background the authors should specify in which pathway the role of PRAF3 is relevant to SCC. In the abstract Conclusions, the author should use the word "potential" to refer to PRAF3.

In the main text, the Introduction is adequately explained. However, in the Methods section, it’s not clear how the samples were obtained. In apoptosis assay, the methodology applied is unsatisfactory since propidium iodide is intercalated in citoplasmic RNA. In order to avoid this problem, I recommend using RNasa treatments. In the Results section "PRAF3 suppresses the activity of MMP-2 by integrating avb3 signaling in ESCC cells", I would like to know how the authors knew they were dealing with the correct enzyme.

According to this reviewer, the manuscript of Yuan et al does not have Major Compulsory or Discretionary Revisions. However, several Minor Essential Revisions can be raised:

1. In the second paragraph of the abstract, the term "field" is awkward in the context of ".......In recent years, PRAF3 has gained increasing attention in the
tumor field...."

2. In the first paragraph of the Results section, “....we first scan....” should be 
   "....we evaluate....”

3. In the second paragraph of the Discussion section, ......(but not 
   ESCC)....please modify.

4. Missing reference after the text ".....Considering that PRAF3 is a 
   transmembrane protein located at the endoplasmic reticulum....." 

   **Level of interest:** An article of importance in its field

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

   **Statistical review:** No, the manuscript does not need to be seen by a 
   statistician.

   **Declaration of competing interests:**

   I declare that I have no competing interests