Reviewer's report

**Title:** MicroRNA-363 targets myosin 1B to reduce cellular migration in head and neck cancer

**Version:** 9  **Date:** 20 July 2015

**Reviewer:** Hua-Chien Chen

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**Major Compulsory Revisions**

The manuscript entitled “microRNA-363 targets myosin 1B to reduce cellular migration in head and neck cancer” investigated the biological function of microRNA-363 in head and neck cancer (SCCHN). The authors showed that miR-363 was up-regulated in HPV-positive SCCHN in both TCGA data and their own study cohort. Ectopic expression of miR-363 in HPV-negative SCCHN cells reduced migratory capability without affecting cell proliferation. Using bioinformativ analysis, the authors identified MYO1B as a potential target of miR-363. Through biochemical approach and reporter gene assay, the authors demonstrated that MYO1B is a direct target of miR-363. The authors further showed that depleting MYO1B reduced cell migration. Based on these results, the authors concluded that “Elevated miR-363 in HPV-positive SCCHN may reduce metastatic events, thereby contributing to a more favorable outcome compared to HPV-negative SCCHN”.

Overall, the assays are well designed and adequate to address the biological function of miR-363 in SCCHN cells. The functional study data fully support the notion that miR-363 targets MYO1B to suppress cell migration. However, the results observed in the study completely contradict the conclusion made by the authors that HPV associated miR-363 overexpression contributes to a more favorable outcome of SCCHN by reducing metastatic events. As the authors described in the introduction, HPV-positive tumor tend to have early metastasis to secondary lymphoid tissue (line 132). However, the main finding in this study is that HPV up-regulates miR-363 expression and lead to a suppression of cell migration. In the discussion, the authors also mentioned that the relation between HPV-positivity, miR-363 upregulation, and subsequent MYO1B downregulation in SCCHN does not translate into a clear clinical picture (line 418). The more favorable outcome of HPV-positive SCCHN is more likely derived from a better response to chemotherapy, radiation and surgery. Therefore, the conclusion made by the authors is misleading and should be rewritten.

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

**Quality of written English:** Acceptable
**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