Reviewer’s report

**Title:** Phoyunnanin E inhibits migration of non-small cell lung cancer cells via suppression of epithelial-to-mesenchymal transition and integrin αv and integrin β3

**Version:** 0  **Date:** 09 Oct 2017

**Reviewer:** Yang Fan Yang

**Reviewer's report:**

Dear editor,

Thank you for the opportunity to reviewing this manuscript. The physiological process that allows cells to change their morphology, lose their polarity, and become motile is termed the epithelial-mesenchymal transition (EMT). In recent years, studies related to drugs that ablate the EMT in cancer cells metastasis have been popular. Extract from whole plant Dendrobium venustum exhibited significant antimalarial and antiherpetic activities. The present experiment firstly reveal that the phoyunnanin E, a compound isolated from Dendrobium venustum, possesses antimigration activities of non-small cell lung cancer via suppression of epithelial-mesenchymal transition and integrin αv and integrin β3. H460 cells were treated with various concentrations of phoyunnanin E to examine its effect on the viability by the MTT assay. The concentrations which showed least effect on the viability of H460 cells were used to evaluate the metastatic potentials in anchorage-independent condition, migratory activity via wound healing assay and the expression of epithelial and mesenchymal markers by western blotting. Furthermore, the phoyunnanin E treated H460 cells exhibited significant lower level of expression of integrin αv, α5 and β3, p-FAK and downstream signaling pathway (p-AKT, Rac1, Cdc42 and RhoA) from western blotting.

In general, the topic is novel and the paper is well structured. Still there are some flaws about process of argumentation.

1. To further verify the anti-metastasis effect in lung cancer of phoyunnanin E, animal models of lung cancer should be established and tumor inhibited experiment in vivo should be conducted.

2. The concentrations of phoyunnanin E which showed least effect on the viability of H460 cells were examined by the MTT assay, which lie between 0-20μM according to the results. However the concentrations of phoyunnanin E for other human lung cancer H292 and A549 cells and human normal keratinocytes lack data supporting.

3. To confirm the effect of phoyunnanin E on the expression of integrin αv, α5 and β3, p-FAK and downstream signaling pathway, further experiments, for example gene expression, and rescue experiment are required.
Above all, I suggest a major revision before the manuscript is considered acceptable for publication.

Best regards,

Yangfan Yang

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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.

No

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I am able to assess the statistics

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