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Reviewer comments

In this study, authors specifically tried to link the relationship between inhibiting proliferation and promoting migration of transformed cells by Wnt 7a. It is very novel and of great significance. However, I think there are still some problems in experiment design and presentation of figures. So I think the manuscript needs to be revised before publication

1. The sentence in Line 33-38 was not clarified clearly and should be re-written. I can't understand the relationship between WNT7a and breast cancer.

Reply 1: The sentence needed to address whether Wnt7a induced the invasion and migration of NSCLC cells. Based on the reviewer's comment, the following sentence has been deleted to the introduction section of the revised manuscript: "It has been reported that overexpression of Wnt7a promotes breast cancer cell migration and invasion, which is correlated with an unfavorable prognosis".

2. Please explain the role of Blasticydin in Line 73.

Reply 2: We apologize for the crucial mistake in our description. We changed the "Blasticidin" to "Blasticydin" in the method section of revised manuscript. Blasticidin can be used as an effective selectable marker.

Changes in the text: See Page 3, line 73.

3. For the MTT experiment in line 80, I think 500 cells/well was inappropriate. Please explain the experiment design.

Reply 3: We're really sorry for our mistake in our description. Cells were seeded in a 96 well culture plate with a density of 5×10^3 cells/well.

Changes in the text: See Page 3, line 80.

4. The figures are really too vague to understand. I think the size of figures, especially the images of migration assay (figure 2), need to be checked again. And the serial number of pictures should be marked; otherwise it is difficult to understand.

Reply 4: Based on the reviewer's comment, we changed the size of figures and remarked the serial number of pictures.

5. In my opinion, figure1 cannot explain the conclusion that overexpression of Wnt7a inhibits proliferation of A549 and H1650 cells. And I think figure1 and figure3 are exactly the same. Please check it again.

Reply 5: There is an error in submitted articles about the order of figures. The following error have occurred during uploading process. Thus, we have resubmitted the Figure 1 in the revised manuscript.

6. Please explain the relationship between inhibiting proliferation and promoting migration as well as invasion by Wnt7a.

Reply 6: Our study aimed to highlight that Wnt7a overexpression not only inhibited the proliferation but also promoted the migration and invasion of NSCLC. Thus, present study did not explain the relationship between inhibiting proliferation and promoting migration as well as invasion by Wnt7a. We make a hypothesis that at least some tumor suppressor proteins may play positive roles during early stages of metastasis by inhibiting proliferation and thereby supporting survival of disseminated metastatic cells. In order to prove this hypothesis, the direct causal relationship between inhibiting proliferation and promoting migration should be further examined.

7. I think Wnt7a overexpression activated the JNK pathway. However, it is necessary to clarify whether the inhibition of proliferation is caused by the JNK pathway. Please provide more additional evidence.

Reply 7: Previous study has been reported that Wnt7a overexpression inhibited the proliferation of NSCLC via the JNK pathway (Winn RA, J Biol Chem, 2005). In the present study, we only found that JNK pathway was similar to the activation observed in response to Wnt7a expression. Thus, we just wrote that “Wnt7a overexpression was accompanied by parallel changes in the JNK pathway”.

8. There are many inconsistent descriptions in this manuscript. Please carefully check and revise throughout the manuscript.

Reply 8: Thank you for this suggestion. We have been checked the inconsistent descriptions in our manuscript.