Long non-coding RNA LINC00346 contributes to cisplatin resistance in nasopharyngeal carcinoma by repressing miR-342-5p

Zheqing Cui, Tian Pu, Yujie Zhang, Jia Wang and Yulin Zhao

Review History

RSOB-19-0286.R0 (Original submission)

Review form: Reviewer 1

Recommendation
Major revision is needed (please make suggestions in comments)

Do you have any ethical concerns with this paper?
No

Comments to the Author
In recent years, long non-coding RNAs have been widely reported to participate in various biological processes, including drug resistance. However, it is still important to discover specific long non-coding RNA, which is responsible for a specific physiologic event in the specific tumor. In this regard, the findings in this MS are of great importance, as they provided evidence to prove that LINC00346 contributed to cisplatin resistance in nasopharyngeal carcinoma. Furthermore, the underlying mechanisms are uncovered. Nevertheless, some revisions could be made to improve the quality of this paper. They are listed below:
1. The rationale to choose this LINC00346 could be explained in more detail, either in the introduction or in the discussion section.
2. Please incorporate the data in Table 1 into the text in the Methods.
3. How are the expression levels of LINC00346 in other tumors or related cell lines?
4. The conclusions could be strengthened if in vivo data were included. If not, please add some discussions at least.
5. How many repeats did you conduct? Please clarify.

Review form: Reviewer 2

Recommendation
Accept with minor revision (please list in comments)

Do you have any ethical concerns with this paper?
No

Comments to the Author
This manuscript is an interesting addition to our understanding of long non-coding RNA in drug (cisplatin) resistance in nasopharyngeal carcinoma, however, I think that the manuscript should be improved and some points should be considered:
1--My major concern is how you chose this long non-coding RNA LINC00346 from all the IncRNAs? Is its expression much higher than other IncRNAs in nasopharyngeal carcinoma?
2--How did you induce cisplatin-resistant cells? The protocol is missing.
3--You should avoid repeating the results in the discussion.
4--Table 1 seems to be not necessary. This is not important data to the findings.

Decision letter (RSOB-19-0286.R0)

11-Feb-2020

Dear Dr Zhao,

We are writing to inform you that the Editor has reached a decision on your manuscript RSOB-19-0286 entitled "Long non-coding RNA LINC00346 contributes to cisplatin resistance in nasopharyngeal carcinoma by repressing miR-342-5p", submitted to Open Biology.

As you will see from the reviewers’ comments below, there are a number of criticisms that prevent us from accepting your manuscript at this stage. The reviewers suggest, however, that a revised version could be acceptable, if you are able to address their concerns. If you think that you can deal satisfactorily with the reviewer’s suggestions, we would be pleased to consider a revised manuscript.

The revision will be re-reviewed, where possible, by the original referees. As such, please submit the revised version of your manuscript within four weeks. If you do not think you will be able to meet this date please let us know immediately.

To revise your manuscript, log into https://mc.manuscriptcentral.com/rsob and enter your Author Centre, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.
You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, please revise your manuscript and upload a new version through your Author Centre.

When submitting your revised manuscript, please respond to the comments made by the referee(s) and upload a file "Response to Referees" in "Section 6 - File Upload". You can use this to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the referee(s).

Please see our detailed instructions for revision requirements https://royalsociety.org/journals/authors/author-guidelines/

Once again, thank you for submitting your manuscript to Open Biology, we look forward to receiving your revision. If you have any questions at all, please do not hesitate to get in touch.

Sincerely,
The Open Biology Team
mailto: openbiology@royalsociety.org

Reviewer(s)' Comments to Author(s):

Referee: 1

Comments to the Author(s)

In recent years, long non-coding RNAs have been widely reported to participate in various biological processes, including drug resistance. However, it is still important to discover specific long non-coding RNA, which is responsible for a specific physiologic event in the specific tumor. In this regard, the findings in this MS are of great importance, as they provided evidence to prove that LINC00346 contributed to cisplatin resistance in nasopharyngeal carcinoma. Furthermore, the underlying mechanisms are uncovered. Nevertheless, some revisions could be made to improve the quality of this paper. They are listed below:

1. The rationale to choose this LINC00346 could be explained in more detail, either in the introduction or in the discussion section.

2. Please incorporate the data in Table 1 into the text in the Methods.

3. How are the expression levels of LINC00346 in other tumors or related cell lines?

4. The conclusions could be strengthened if in vivo data were included. If not, please add some discussions at least.

5. How many repeats did you conduct? Please clarify.

Referee: 2

Comments to the Author(s)

This manuscript is an interesting addition to our understanding of long non-coding RNA in drug (cisplatin) resistance in nasopharyngeal carcinoma, however, I think that the manuscript should be improved and some points should be considered:
1--My major concern is how you chose this long non-coding RNA LINC00346 from all the lncRNAs? Is its expression much higher than other lncRNAs in nasopharyngeal carcinoma?

2--How did you induce cisplatin-resistant cells? The protocol is missing.

3--You should avoid repeating the results in the discussion.

4--Table 1 seems to be not necessary. This is not important data to the findings.

Author’s Response to Decision Letter for (RSOB-19-0286.R0)

See Appendix A.

RSOB-19-0286.R1 (Revision)

Review form: Reviewer 1

Recommendation
Accept as is

Do you have any ethical concerns with this paper?
No

Comments to the Author
Thank you for addressing the comments. No further questions.

Review form: Reviewer 2

Recommendation
Accept as is

Do you have any ethical concerns with this paper?
No

Comments to the Author
Good revision. Thanks.
30-Mar-2020

Dear Dr Zhao

We are pleased to inform you that your manuscript entitled "Long non-coding RNA LINC00346 contributes to cisplatin resistance in nasopharyngeal carcinoma by repressing miR-342-5p" has been accepted by the Editor for publication in Open Biology.

If applicable, please find the referee comments below. No further changes are recommended.

You can expect to receive a proof of your article from our Production office in due course, please check your spam filter if you do not receive it within the next 10 working days. Please let us know if you are likely to be away from e-mail contact during this time.

Article processing charge
Please note that the article processing charge is immediately payable. A separate email will be sent out shortly to confirm the charge due. The preferred payment method is by credit card; however, other payment options are available.

Thank you for your fine contribution. On behalf of the Editors of Open Biology, we look forward to your continued contributions to the journal.

Sincerely,
The Open Biology Team
mailto: openbiology@royalsociety.org

Reviewer(s)' Comments to Author:

Referee: 1

Comments to the Author(s)
Thank you for addressing the comments. No further questions.

Referee: 2

Comments to the Author(s)
Good revision. Thanks.
Response to Referee: 1

Comments to the Author(s)

In recent years, long non-coding RNAs have been widely reported to participate in various biological processes, including drug resistance. However, it is still important to discover specific long non-coding RNA, which is responsible for a specific physiologic event in the specific tumor. In this regard, the findings in this MS are of great importance, as they provided evidence to prove that LINC00346 contributed to cisplatin resistance in nasopharyngeal carcinoma. Furthermore, the underlying mechanisms are uncovered. Nevertheless, some revisions could be made to improve the quality of this paper. They are listed below:

1. The rationale to choose this LINC00346 could be explained in more detail, either in the introduction or in the discussion section.

Reply:

Thank you for the advice. We have demonstrated that microRNA-342-3p targets FOXQ1 to suppress the aggressive phenotype of nasopharyngeal carcinoma cells in our previous work [1]. Then we wanted to investigate the function and mechanisms of miR-342-5p which shares the same precursor with miR-342-3p in nasopharyngeal carcinoma. Increasing literatures reported that LncRNAs mediated tumor progression via sponging miRNAs, so we searched the LncRNAs candidates which could interact with miR-342-5p by targetscan (http://www.targetscan.org/vert_71/), LINC00346 and LINC00632 included. As LINC00346 was upregulated in gastric cancer [2], pancreatic cancer[3] and bladder cancer[4] and played a crucial oncogenic role in these cancers, but LINC00632 was less studied in cancers. So, we speculated LINC00346 may act as a pivotal mediator in nasopharyngeal carcinoma and chose it for further study.

References:

[1] Cui Z, Zhao Y. "microRNA-342-3p targets FOXQ1 to suppress the aggressive phenotype of nasopharyngeal carcinoma cells." BMC Cancer 2019.24;19(1):104.
[2] Xu, T. P., P. Ma, W. Y. Wang, Y. Shuai, Y. F. Wang, T. Yu, R. Xia and Y. Q. Shu. "KLF5 and MYC modulated LINC00346 contributes to gastric cancer progression through acting as a competing endogeneous RNA and indicates poor outcome." Cell Death and Differentiation 2019.721
[3] Peng, W. X., R. Z. He, Z. Zhang, L. Yang and Y. Y. Mo. "LINC00346 promotes pancreatic cancer progression through the CTCF-mediated Myc transcription." Oncogene 2019.720
[4] Ye, T. Y., W. Ding, N. X. Wang, H. Huang, Y. Pan and A. Y. Wei. "Long noncoding RNA linc00346 promotes the malignant phenotypes of bladder cancer." Biochemical
2. Please incorporate the data in Table 1 into the text in the Methods.

Reply:
Thank you for the advice and the primers sequences listed in the table 1 are integrated in the manuscript.

3. How are the expression levels of LINC00346 in other tumors or related cell lines?

Reply:
This is a good question. However, in the current study, we mainly focused on the nasopharyngeal carcinoma, and did not examine the levels of LINC00346 in other tumors. We searched the literatures, and found that LINC00346 was upregulated in gastric cancer[1], pancreatic cancer[2] and bladder cancer[3] and played a crucial oncogenic role in these cancers. Such information is interpreted in the introduction part.

References:
[1] Xu, T. P., P. Ma, W. Y. Wang, Y. Shuai, Y. F. Wang, T. Yu, R. Xia and Y. Q. Shu. "KLF5 and MYC modulated LINC00346 contributes to gastric cancer progression through acting as a competing endogeneous RNA and indicates poor outcome." Cell Death and Differentiation 2019.721
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4. The conclusions could be strengthened if in vivo data were included. If not, please add some discussions at least.

Reply:
Thank you for the comment. It is interpreted in Figure 1, LINC00346 expression is remarkably up-regulated in primary NPC samples when compared with respective healthy surrounding tissues, and CR patients showed increased LINC00346 expression when compared with CS patients. Such comment is also referred in the discussion section.
5. How many repeats did you conduct? Please clarify.

REPLY:
Thanks for careful reading. At least three independent biological repeats were conducted for the biochemical experiments. We now specified this point in the text.

Response to Referee: 2
Comments to the Author(s)
This manuscript is an interesting addition to our understanding of long non-coding RNA in drug (cisplatin) resistance in nasopharyngeal carcinoma, however, I think that the manuscript should be improved and some points should be considered:
1--My major concern is how you chose this long non-coding RNA LINC00346 from all the lncRNAs? Is its expression much higher than other lncRNAs in nasopharyngeal carcinoma?

Reply:
This is a good question. We have demonstrated that microRNA-342-3p targets FOXQ1 to suppress the aggressive phenotype of nasopharyngeal carcinoma cells in our previous work [1]. Then we wanted to investigate the function and mechanisms of miR-342-5p which shares the same precursor with miR-342-3p in nasopharyngeal carcinoma. Increasing literatures reported that lncRNAs mediated tumor progression via sponging miRNAs, so we searched the lncRNAs candidates which could interact with miR-342-5p by targetscan (http://www.targetscan.org/vert_71/), LINC00346 and LINC00632 included. As LINC00346 was upregulated in gastric cancer[2], pancreatic cancer[3] and bladder cancer[4] and played a crucial oncogenic role in these cancers, but LINC00632 was less studied in cancers. So, we speculated LINC00346 may act as a pivotal mediator in nasopharyngeal carcinoma and chose it for further study.

References:
[1] Cui, Z. Q. and Y. L. Zhao. "microRNA-342-3p targets FOXQ1 to suppress the aggressive phenotype of nasopharyngeal carcinoma cells." Bmc Cancer 2019;19.735
[2] Xu, T. P., P. Ma, W. Y. Wang, Y. Shuai, Y. F. Wang, T. Yu, R. Xia and Y. Q. Shu. "KLF5 and MYC modulated LINC00346 contributes to gastric cancer progression through acting as a competing endogeous RNA and indicates poor outcome." Cell Death and Differentiation 2019.721
[3] Peng, W. X., R. Z. He, Z. Zhang, L. Yang and Y. Y. Mo. "LINC00346 promotes pancreatic cancer progression through the CTCF-mediated Myc transcription." Oncogene 2019.720
[4] Ye, T. Y., W. Ding, N. X. Wang, H. Huang, Y. Pan and A. Y. Wei. "Long noncoding
RNA linc00346 promotes the malignant phenotypes of bladder cancer." Biochemical and Biophysical Research Communications 2017;491:79-84.722

2--How did you induce cisplatin-resistant cells? The protocol is missing.
Reply:
We thank this reviewer for pointing this out. We added the related protocol in the revised manuscript.

3--You should avoid repeating the results in the discussion.
Reply:
Thank you for the comment and the repeated description is deleted.

4--Table 1 seems to be not necessary. This is not important data to the findings.
Reply:
Thank you for the comment and the primer sequences listed in table 1 are integrated in the materials and methods section.