Reviewer's report

Title: Hsa-miR-125a-3p and hsa-miR-125a-5p are low-expressed in non-small cell lung cancer and inversely regulate the invasive and metastatic abilities of lung cancer cells.

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Reviewer: Andreas Keller

Reviewer's report:

Jiang and coworkers are presenting in their work "Hsa-miR-125a-3p and hsa-miR-125a-5p are low-expressed in non-small cell lung cancer and inversely regulate the invasive and metastatic abilities of lung cancer cells" the analysis of only two miRNAs in lung cancer tissue using RT-PCR. The study set-up seems to be concise and the statistical methods are described and applied in a satisfying manner. However, the manuscript lacks some details that have to be complemented.

Remarks for improving the manuscript are follows:
- It becomes only hardly clear why these and only these two miRNAs have been selected for the approach instead of a larger set of miRNA markers.
- In the results section authors state that levels "decreased almost in all NSCLCs"? Please give the correct numbers as well as specificity and sensitivity maybe also with AUC values.
- In the second section of the results authors state "A statistically significant association between hsa-miR-125a-3p/-5p expression and pathological stage and lymph node metastasis of lung cancer was observed in this study." Please give the p-value and applied test, here.
- In the same section Jiang states: "However, hsa-miR-125a-3p expression level was correlated with age, which was quite different from hsa-miR-125a-5p." Please give the figures also here, including correlation and p-value.
- Again, in the same section the authors describe further tests and p-values. Have these p-values been adjusted for multiple testing? At least for each of the miRNAs the two tests against lymph node metastasis and pathological stage (n = 2) should be corrected or authors should explain while these two tests can be treated separately.
- The target gene analysis could be improved by a pathway / gene set analysis as freely available and implemented in many tools.

Minor remarks
- Second section of the results: "expression and pathological (r=0.439, p=0.001)" the word stage may be missing?
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.