Reviewer’s report

Title: Elevated expression of prostate cancer-associated genes is linked to down-regulation of microRNAs

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Reviewer: Annika Fendler

Reviewer’s report:

The authors studied the expression of miRNAs in prostate cancer, which potentially target PCa relevant genes. This is an interesting approach, especially taking into account that regulation of the target genes in PCa has not been fully elucidated in prostate cancer so far.

Major Compulsory Revisions:

1) The authors studied a comparably small set of patient specimens but were nevertheless able to show that the selected miRNAs were downregulated in prostate cancer. They did not study, whether expression of the miRNA was associated with poor survival of the patients. Especially for miR-186 this would be interesting to see and should be included in the manuscript.

2) The authors used a miRNA mimic to knockdown AMACR expression. Downregulation of AMACR in Du-145 is rather small upon miR-26a transfection. Yet, statistics are missing in table 5 and figure 3 and should be included for all transfection experiments. Statistics should also be included in figure 4 (luciferase assay).

3) The authors suggest AMACR as a novel target for miR-26a in prostate cancer. Unfortunately, they do not proof whether this regulatory mechanism is of any functional significance for prostate carcinogeneis. They should show experimentally that miR-26 overexpression functionally phenocopies the knockdown of AMACR in prostate cancer cell lines, for example in regard of AMACRs regulation of androgen-independent growth. This experiments should be included in the manuscript.

4) miR-186 is the only miRNA that has been associated with organ-confined disease and metastatic growth in this study and it shows inverse correlation with AMACR and PSMA. This makes this miRNA in interesting molecule in prostate cancer and thus it would be nice to see in this manuscript, whether this miRNA is also able to directly bind to the AMACR and PSMA 3'-UTR and thus diminish their expression.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests.