Reviewer's report

Title: Fibronectin 1 mRNA expression correlates with risk of progression in renal cell cancer

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Reviewer: Christine G. Hammerschmied

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Waalkes and colleagues examined mRNA expression of fibronectin-1 in renal cell carcinoma. Fibronectin-1 is a widely extracellular matrix glycoprotein and involved in cellular adhesion and migration. They applied total RNA-extraction, reverse transcription and quantitative PCR on fresh frozen tumor and normal kidney samples of patients. By relating clinicopathological features of the tumor specimens to fibronectin-1 mRNA expression levels, they demonstrated significant overexpression in renal cell carcinoma which was highest in the clear cell subtype. Expression was unaltered in oncocytoma, a benign renal tumor. They also found significantly higher levels of fibronectin-1 mRNA in advanced renal cell carcinoma compared to organ-confined disease. The conclusions drawn from the data are sound. The paper would gain even higher interest, if the authors had included also data regarding protein expression (f. ex. immunohistochemistry) for a representative example of each group to reveal if protein and mRNA expression correlate.

Major compulsory revisions:

1. Title:
The manuscript title suggests that a follow-up study including assessment of fibronectin-1 mRNA expression on renal cancer was performed. It might be better to slightly change the title to something like “…expression correlates with advanced disease in renal cancer”

2. Material and Methods:
Please specify how the three endogenous control assays were included in the calculation of the results. Which algorithm was used to relate the fibronectin-1 Ct values to all three endogenous controls?

3. Figures:
Figure legends should also explain any abbreviations used in the figure, f. ex. FN1RQ, PRTEC.

Minor essential revisions:

4. Results, clinical observations:
In line two median age of patients was reported to be 63 ±11.9 years. In Table 1
the same values were reported to be the mean age. Both terms are not
interchangeable, they are defined differently. This should be corrected. Also,
minimum and maximum age should be reported instead of standard deviation if
using median.

5. Results, clinical observations, first paragraph:
The numbers of patients suffering from papillary and unclassified RCC differ from
those mentioned in Table 1. (Results: papillary n = 23 and unclassified n = 6;
Table1: papillary n = 22 and unclassified n = 7). This should be corrected.

6. Figure 1:
The groups were named normal, oncocytoma, tumor. This is slightly misleading.
Oncocytoma is also a tumor, but it is benign. Therefore the last group should be
renamed, f. ex. “renal cell carcinoma”, “RCC” or “malignant tumors”.

Minor comments, not for publication:

Some typing and formatting errors have occurred and are listed below.


8. Introduction, first paragraph:
Omit line break in line 9 after “…demonstrating the limited…”

9. Introduction, third paragraph:
Insert “from” in line 1 after suffering (“…were detected in patients suffering from
gastrointestinal….“)

10. Material and Methods, quantitative real-time PCR analysis, first paragraph:
Delete second “n” of “…expressionn assays…” in line three. Insert “used” in: “For
visual comparison of univariate data we [used] beanplots…” in the third line of
the second paragraph.

11. Table 1:
The values of the “%” column are duplicated in brackets in the “number of
patients” column. This should be corrected. Also, if using mean age, correct SD
to 11.9 (now it reads 11,9).

12. Figure legends:
Bean plots are a useful tool to display the distribution of observations and every
single observation within a single plot for different groups. Unfortunately, this kind
of display has not widely spread yet and therefore, most readers are familiar with
box plots only. The authors should provide a very short description of the most
important features in the (first) figure legend. This would be quite helpful for many
readers.

13. Figures:
Consistent axis labelling should be provided throughout all bean plots. Currently, Figures 1 to 4a use another annotation than 4b.
Better picture quality should be provided for online publication, the submitted ones are somewhat blurred.

14. Figure 4a:
The bean plot in Figure 4a is called Figure 4. This should be corrected

15. Figure 4b:
The bean plot in Figure 4b is called Figure 5. This should be corrected

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.