Reviewer’s report

Title: AKAP3 correlates with triple negative status and disease free survival in breast cancer

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Reviewer: Mohammed Aleskandarany

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In their article, "entitled: AKAP3 correlates with triple negative status and disease free survival in breast cancer", Esmaeili and colleagues used PCR to quantitate levels of AKAP3 in breast tissue and breast cancer cell lines. They correlated their data with the clinicopathological and outcome data of the studied patients. However, this manuscript needs major revisions before being ready for publication.

A: Major points:

1- The number of samples mentioned in the abstract is not the same as mentioned in the materials and methods section (165 and 164, respectively). So, which number is the exact number of samples used. Moreover, it seems that the authors add up the two cell lines used as breast tissue samples (line 73 of the manuscript document), while they are not. So, separation must be made between breast tissue samples and the cell lines i.e. they do not add up to the tissues.

2- The authors used ER, PR, and HER2 status for the cases used. However, they did not mention, whatsoever, how and according to which guidelines these status have been determined. Data of cut-point of positivity, clones used for identification, and whether HER2 status was defined by IHC only or with other methods like FISH or CISH.

3- The authors in their analytical plan pointed to the analysis of the PCR data with different combinations of ER, PR, and HER2 status (lines 111- 112 in the document). So, the results of these analyses are to be provided in the results section and discussed accordingly.

4- A table summarising the results of statistical associations between RT-PCR results and the clinicopathological data should be provided.

5- The authors defined cases into positive and negative regarding expression levels of AKAP3. However, they did not mention whether negativity is a real absence of AKAP3 or this a dichotomisation of AKAP3 RT-PCR data based on a specific cut point. Please, specify.

6- The conclusion firmly states: "It was found that this relationship is originated from the difference in AKAP3 expression, not therapy distribution between two groups of patients". The authors here interpreted the associations they found in their study as a causation, which is not always the case. Please re-phrase with tone down of the study conclusions.
B- Minor Points:

1- Table 1 describing the clinicopathological criteria of the studied patients/samples, and these data were verbally written in the beginning of the results section (lines 120-127). One form of data presentation is enough (whether the table or the detailed written description).

2- The survival curves need to be double checked as the lines representing positive and negatives appears to be more separated in the plot labeled as not significant (p=.8) and vice versa.

3- More attention is needed to the punctuation throughout the manuscript for better readability of the manuscript.

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 have no conflicts of interests to declare