Reviewer's report

Title: Effects on human transcriptome of mutated BRCA1 BRCT domain: a microarray study.

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Reviewer: alvaro galli

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The manuscript entitled "Effects on Human transcriptome of mutated BRCA1 BRCT domain: a microarray study" by Iofrida et al. describes the data concerning the effect of the overexpression of these mutated BRCA1 proteins on the transcription of some genes. The authors compare the microarray data vs the BRCA1 wt to find specific genes differentially expressed only when the mutated BRCA1 is overexpressed.

Overall, the paper did not add any significant information about what is already known on BRCA1 tumorigenesis. These are the main concern:

1) The BRCT domain, as they stated in the introduction, has a transcriptional activity and the overexpression of the two mutated proteins is expected to affect the transcription. In other word, are the two mutants able to transactivate in vitro? Are any data published on that? What I mean is that the difference found in the expression profiles could be due to a different activity of the proteins on the promoters. Thus, for instance, if the M1775R were more active in transcription than the A1789T, could it affect the transcription profiles? How much is this relevant for cancer? I guess the authors should discuss the data more profoundly to address these points.

2) The authors mention that they checked the level of the BRCA1 wt and two mutants after transfection by western blot but do not show any data. I guess this is very important and they have to normalized the data to a loading control.

3) Moreover, after transfection how are the cells in terms of survival or viability? Moreover, if the expression of BRCA1 wt were more toxic than the mutants, what you see in the expression profiles could be due to a toxic effect. A simple colony forming assay should be give information about the toxicity!

For completion, the Authors should analyze the cells transfected with the empty vector to understand what genes are modulated after transfection.

4) At the end of the Results section, the authors mention that the expression of the whatever proteins they chose was confirmed by western blot. I guess they have to show the data.
Level of interest: An article of limited interest

Quality of written English: Acceptable

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