Reviewer's report

Title: Identification of gene fusion transcripts by transcriptome sequencing in BRCA1-related breast cancers and cell lines

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Reviewer: Tao Zuo

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The manuscript titled “Identification of gene fusion transcripts by transcriptome sequencing in BRCA1-related breast cancers and cell lines” by Kevin C H Ha, et al. covers an interesting topic in the field of cancer genetics. Another merit is that authors are presenting one of interesting applications of a new methodology, i.e., RNA-Seq. Overall, I believe that this paper fits the criteria for publication in BMC Medical Genomics#. However, some minor essential revisions, as listed blow, should be done by authors.

1. There are some confusing terms used in manuscript:
   1) What dose “BRCA1-related breast cancers” refer? Does it mean BRCA1 mutated, deleted…? Based on information listed in Table-1, I would like suggest to use “BRCA1-mutated breast cancers”
   2) Authors stated that they using “one normal breast epithelial cell line” as normal control. This cell line is MCF10A which actually is not considered as “normal”. Most of researchers in the field agree called it “non-tumorigenic breast epithelial cell line”, as authors correctly labeled in Table-1. Please keep consistency by using this term in the manuscript.

2. The conclusion stated “…..those fusions that are identified may still serve as potential “individualized” biomarkers to aid in patient monitoring” . Based on the results presented in paper, there is no recurrence for any genetic fusions reported in this study. Therefore the exaggerated conclusion should be corrected appropriately.

3. Some typos in manuscript:
   1) Background, page 5, last line “…estrogen growth factor receptor…” should be “..epithelial…”
   2) page 13, last line “ … promoter or enhancer in MTAP…” should be “……..WWC1…”

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

Quality of written English: Needs some language corrections before being published
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests