Reviewer's report

Title: Loss of heterozygosity at the ATBF1-A locus located in the 16q22 minimal region in breast cancer

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Reviewer: Won Sang S Park

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The authors have conducted a good and important study. In short, the authors have looked for mutation and allelic loss of the ATBF1 gene in breast cancers and relationship between frequency of LOH and clinicopathological factors, including ER, PR, and HER2. Finally, they found no somatic mutation with amino acid substitution and LOH in 42.3%. In addition, LOH was closely related with positivity of PR and negativity of HER2. They concluded that ATBF1-A mRNA levels are regulated at the transcriptional stage, but not by genetic mechanisms, deletion or mutations. However, more detailed and accurate analysis and descriptions are needed before above conclusion is given. Below I give a few comments should the authors want to rewrite their article.

Criticisms

1. Because there is a lot of normal cell infiltration, including lymphocytes and fibroblasts, around tumor tissues, microdissection is obviously necessary for allelic loss and mutational analysis.

2. For mutational analysis, 12 patients with tumors that did not demonstrated LOH but with lower ATBF-1 mRNA expression were chosen. It is possible that a glutamine/proline rich domain of ATBF1 may be associated with a transcription factor's function. However, there is no direct evidence that a mutation account for reduced expression of ATBF1. They need to search for the mutation in all the cases. In addition, this study did not provide insight as to the effect of genetic change.

3. In Table 3, total case number is 43. But each parameter has different total number. For example, they found LOH in 22 cases. However, there are 18 LOH cases in PR and 20 in HER2 parameters. Which one is correct?

4. Relationship between LOH status of the ATBF1 and clinicopathologic factors has been studied. The authors should explain what an aim is.

5. If there is a discrepancy in LOH status between D16S3106 and D16S3018, the cases are considered as not determined. This can be a bit confusing to reader. They need to explain the reason in a more reader friendly way.

Level of interest: An article of limited interest

Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.