Reviewer’s report

Title: High-resolution array CGH clarifies events occurring on 8p in carcinogenesis.

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Reviewer: Stephen P Ethier

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Minor Essential Revisions.

The authors report on the analysis of the short arm of chromosome (8p) in breast cancer cell lines and primary tumor tissues using tiling-path BAC and fosmid arrays, FISH, and quantitative RT-PCR. They confirmed that 8p is usually lost up to at least 30 Mb in breast cancer. They found that loss within 8p23.3 (0-2.2 Mb) contains ARHGEF10 gene in six cell lines and 8p22 contains TUSC3 gene in two cases. They also found a point mutation of ARHGEF10 gene in DU4475 breast cancer cell line and a novel amplicon within 8p21.3 in two cell lines and one primary tumor. The authors’ study suggests that the complex and variable events frequently observed on 8p are driven by multiple targets; the presences of tumor suppressor genes including ARHGEF10A and TUSC3, with or without an adjacent 8p11-12 amplicon. The experiments are well performed and the data are carefully analyzed. However, there are a few minor additional issues that should be addressed:

There is a wealth of data describing gene amplification at the 8p11-12 region in human cancers including breast, lung, colon, pancreatic and thyroid cancer. In previous study, the author’s group found that amplification of 8p11-12 occurs in 24% (8/33) of breast cancers (Ref 14). However, data obtained by other groups cited in this paper have found that in human breast cancer, focal amplification involving chromosome 8p11-12 occurs in approximately 10-15% in most published data. This should be mentioned in the paper as well.

In the result section, the category subtitle “8p11-12” is not meaningful, I suggest the authors use: “8p11-12 amplicon, a novel amplicon in 8p21.3, 8p22 rearrangements, and loss of 8p22.3” as subtitles. The authors should delete the “DU4475” subtitle.

As ARHGEF10A is a new candidate tumor suppressor gene that has a point mutation in the DU4475 line, screening and finding the same mutation in primary breast tumor will provide more convincing evidence for its tumor suppressor function.

Level of interest: An article of importance in its field

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'