Reviewer's report

**Title:** Proliferation and survival molecules implicated in the inhibition of BRAF pathway in thyroid cancer cells harbouring different genetic mutations.

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**Reviewer:** Xiulong Xu

**Reviewer's report:**

The authors have addressed most critiques of previous review. One unsolved issue is that in TPC1 cells, suppression of BRAF expression led to inhibition of cyclin D1 expression and cell proliferation independent of ERK. This observation is somehow not consistent with authors' statement that “In RET/PTC and BRAF mutated cells ERK activation leads to cyclin D1-CDK4 preferentially…….” (page 13, last paragraph). Both RAS and RET/PTC are upstream signaling molecules of Raf kinases, inhibition of BRAF expression led to the inhibition of ERK phosphorylation in RAS-mutated but not in RET/PTC-mutated cells.

It is also noticed that probing of phospho ERK and total ERK in many images (Fig. 4a & b) are not from the same blot. The authors need to verify that lack of inhibition of ERK phosphorylation in BRAF-suppressed TPC1 cells is not due to loading errors. In particular these results are not very sound.

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

**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