Reviewer’s report

Title: The NF-kappaB pathway is associated with metastasis of head and neck cancer and decreased its activity in xenograft tumor models inhibits hematologic and lymphatic metastasis

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Reviewer: Chann Lagadec

Reviewer’s report:

I have reviewed the manuscript by Ming et al. entitled “The NF-kB pathway is associated with metastasis of Head and Neck cancer and decreased its activity in xenograft tumor models inhibits hematologic and Lymphatic metastasis”. The authors analyzed the localization of NF-kB on patient tumors, metastatic lymph nodes, and different cell lines. They demonstrated that NF-kB is mostly localized in the nucleus in metastatic cells. They also demonstrated that NF-kB nuclear localization could be induced by TNFa. Interestingly, inhibition of NF-KB by pharmaceutical component reduced dramatically lung metastasis and lymph nodes involvement. Ming et al. didn’t find any difference apoptosis after inhibition of NF-kB, nevertheless, they found an important difference on invasion/migration.

The manuscript is clear and well written. The experiments are well performed. Globally, results and figures are good and convincing. Implication of NF-kB has already been studied and published (Aurun et al. 2009, Li et al. 2009, Huang et al. 2009), nevertheless implication of NF-kB in invasion and migration in HNSCC was never described.

Major compulsory revisions:
1. Carcinoma collected are for 50% only tongue cancers… so authors should diversified the samples to heterogenize and to obtain homogenous distribution of cancer types through the different squamous carcinoma samples.
2. Authors should compare NF-kB and carcinoma localization before to be able to claim that nuclear localization of NF-kB is available for all type of squamous carcinomas...
3. Authors should explain why Aurun et al. 2009 could explain that NF-kB inhibition induced a dramatic decrease of viability?? Could identical genetic background (cells coming from the same parental line) explain this specificity? Authors should used others established cells lines (TSCC and OSC-4).

Minor essential revisions:
1. Some problems with fonts (ex: page 2 line 20)
2. Introduction is missing some references to be more contextual.
3. Error in corresponding author email.
4. Fig 1A bottom right… not good magnification
5. Fig 2B error in graph legend
6. Fig 2D need legend and not number for line
7. Fig 3 pictures are not align at all!!!!
8. Fig4 graph pictures have to be re-size to be not deformed

**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