Reviewer's report

Title: YKL-40 regulate Epithelial-Mesenchymal Transition and enhance migration/invasion in non-small cell lung cancer

Version: 2 Date: 30 November 2014

Reviewer: Jia Xu

Reviewer's report:

This manuscript entitled that “YKL-40 regulate Epithelial-Mesenchymal Transition and enhance migration/invasion in non-small cell lung cancer” is trying to investigate the function of YKL-40 in cancer cell migration and invasion. In this study, we observed that YKL-40 is highly expressed in non-small cell lung cancer (NSCLC) specimen and poor prognosis in high expression level of YKL-40 patients using the PrognoScan database analysis. In in vitro study, they used different characteristics of NSCLC cell lines (CL1-1, H23, H838, CL1-5, and H2009) as the study model and found that YKL-40 expression level correlates with the phenotypic characteristics of cancer metastasis. In addition, YKL-40 regulated EMT marker expression, such as Twist, Snail, Slug, N-cadherin, Vimentin and E-cadherin and affected cancer cell migration and invasion after overexpression or knock down YLK-40 gene in NSCLC cell lines. This study is written in a logic way and has certain novelty in cancer research field. In addition, they have enough data to support their conclusion, and I would suggest them to do a minor revision.

Minor essential revisions:

1. In the conclusion part, “We believe that YKL-40 is a major key factor on cancer metastasis in NSCLC.” Don’t use “believe” word. It is not scientific and professional word. You should change it to “all of our data suggest that YKL-40 is a major key factor in NSCLC metastasis.

2. In the introduction part, Line 47-48: “The most frequently reported cases among lung carcinoma subtype” is not a complete sentence. Please revise it.

3. In the result part, Line 185-186: “To verify whether YKL-40 effect tumor migration/invasion, we constructed shRNA to knockdown its mRNA level in CL1-5 cells and YKL-40 gene to overexpress its mRNA level in CL1-1 cells” need to be revised. I suggest that: “to investigate the function of YKL-40 on cancer cell migration/invasion, we both knockdown YKL-40 in CL1-5 cells with its shRNA and overexpressed YKL-40 in CL1-1 cells with YKL-40 gene expression construct “.

4. I would suggest the author to change the label of those cell lines in Figure 3. Like CL1-1.wt, CL1-1.Vec, CL1-1.YKL-40, CL1-1.YKL-40.KD. All of the labels need to be revised.

5. Statistics need to be performed on those RT-PCR results and migration or
invasion assay. P-value needs to be added to show the significance.

5. English writing need to be significantly improved.

6. For determining the expression level of YKL-40 in lung cancer patients compared to non-tumor tissues. If possible, please provide representative images of YKL-40 IHC staining in tumor and non-tumor tissues.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests