Reviewer’s report

Title: Rapid chemokinetic movement correlates with the invasive potential of lung cancer cells; a functional molecular approach.

Version: 1 Date: 2 January 2006

Reviewer: Pan-Chyr Yang

Reviewer’s report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The authors in this manuscript tried to isolate high chemokinetic cell population (KINE) from a parent cell line H460 by Boyden chamber and characterized the phenotype and gene expression of this KINE cells by invasion and migration assay, time-lapsed microscopy, immunofluorescence microscopy and microarray analysis. They confirmed that the KINE cells are more invasive and have higher motility and the gene expressions by U133A Affymetrix chips revealed distinct differentially expressed genes that are related to cancer call invasions. Overall this study is very interesting and helpful for the understanding the complex mechanisms of cancer invasion and metastasis. There are several specific comments that the authors need to address.

1. In P6, the invasion assay was carried out for 48 hours; it is difficult to exclude the different cell proliferation effect between KINE and CON cells. It will be better to reduce in experiment time period to 12 or 24 hours.
2. How many arrays were performed? Did the author biologically duplicate the array experiment?
3. At least some of the differentially expressed genes obtained by microarray should be verified by RT-PCR or Western.
4. If the authors can perform functional verification, the manuscript will be more informative. For example, knock down the over expressed genes in KINE cells can suppress chemokinesis as well as cancer cell invasion.
5. A typing error at reference 11, the year 1896 should be changed to 1996.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: Yes