Reviewer's report

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

Version: 1 Date: 6 January 2006

Reviewer: Kazuhiko Aoyagi

Reviewer's report:

General
The authors enriched a subpopulation (KINE cells) of H460 lung cancer cell line that showed high chemokinesis. KINE cells have not only chemotaxis but also high invasive potential compared with the original population (CON cells). Importantly, nature of the KINE cells were investigated using genome-wide microarrays. The authors should address following comments before publication.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1) The authors use genome-wide microarrays. However, only 7 up- or down-regulated genes are shown. A number of differentially expressed genes should be presented. Moreover, function of those genes should be discussed. A scatter plot between two expression profiles can provide the overall difference.
2) A subtitle “Microarray analysis and real-time PCR” is found on line 12 on page 8 (P8L12) in the Methods, but data of real-time PCR and its protocol are not described. At least, data of real-time PCR of the above 7 genes should be added.

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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)
1) The statement of “KINE” is not unified. For example, “(KINE)” on P2L12 and P5L15 should be changed to “KINE cells” and “in KINE cells”, respectively.
2) In Table 1B, no chemokinesis in 0% serum is observed. Chemokinesis of KINE cells is found to be serum-concentration dependent, and 1.5% concentration of serum is used as a condition for enrichment of KINE cells. These reasons should be described.
3) In the Methods, there is no description for "In vitro cell invasion" in the Results.
4) In ref. 11, “1896” should be changed to “1986”.
5) In Fig. 6, the authors show a model for development of malignant cancer cell. This model is too speculative in the present time. This figure should be rewritten. “EMT” should not be strengthen because of no data in this study. Is “Mesenchymal Tumor Cell” usual?

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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 of limited interest

Quality of written English: Needs some language corrections before being published
Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.