Reviewer's report

Title: Increased Diacylglycerol Kinase zeta Expression in Human Metastatic Colon Cancer Cells Contributes to Enhanced Invasion by Augmenting Rho GTPase Activity

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Reviewer: Akinobu Taketomi

Reviewer's report:

In this paper, the authors investigated whether DGK zeta contributes to enhanced invasion of human colon cancer cells through Rho GTPase pathway. The authors used the highly metastatic SW620 colon carcinoma cell line in which DGK zeta protein levels are elevated ~3 fold compared to its non-metastatic SW480 cell variant. The authors demonstrated that Rac1, PAK1, and RhoA activity were increased in SW 620 cells. Knockdown of DGK zeta expression in SW620 cells by Si-RNA significantly reduced Rac1 and RhoA activity and attenuated invasive potential. Based on these findings, the authors claimed that DGK zeta expression contributes to the enhanced motility and metastasis of colon cancer cells. The authors should address the points listed below.

1. Major criticism of this paper is a limited number of cell lines tested. There is a lot of cell line which have highly metastatic potential. The authors should demonstrate if the DGK zeta protein levela are elevated depend on metastatic potential in other cell lines.

2. The authors should demonstrate in vivo data concerning the relationship between DGK zeta expression and metastatic potential. How are the lung and liver metastases of SW 620 compared to SW480 when they are inoculated into the scid mice? For the direct evidence, the constitutive DGK zeta overexpression or deleted mutant cell lines should be established and be used for the in vitro and in vivo experiences.

Level of interest: An article of limited interest

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

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.