Reviewer's report

Title: Epidermal growth factor mediates detachment from and invasion through collagen I and Matrigel in Capan-1 pancreatic cancer cells

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Reviewer: Jorg Kleeff

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'Epidermal growth factor mediates detachment from and invasion through collagen I and Matrigel in Capan-1 pancreatic cancer cells '

BMC Gastroenterology

The study by Shirk and Kuver examines the role of EGF on invasion and adhesion in Capan-1 pancreatic cancer cells. The authors demonstrate that there is an inverse relationship between the invasion and adhesions capabilities and that these events are mediated by EGF receptor signalling involving the erbB2 and PI3K pathways.

This is an interesting study and the experimental procedures are in general sound and valid. Although most of the aspects of the present study are not completely novel and have been described in other cell system, the present paper adds some novel information regarding the role of EGF in pancreatic cancer. There are, however, certain points that should be addressed:

Major Compulsory Revisions

• The authors utilized only a single pancreatic cancer cell line (Capan-1) to analyze the effects of EGF on invasion and adhesion. It would be important to use at least one additional pancreatic cancer cell line and perform some of the key experiments in this cell line.
• The authors should provide information regarding the expression levels of all (!) four EGF receptors in the analyzed cell lines. This information is crucial especially regarding the final conclusion of the present paper. It would be interesting to perform this analysis quantitatively (e.g. immunoblotting).
• The authors utilized EGF and for some additional experiments also heregulin-alpha. The rationale for using this (and not other) growth factors of the EGF family is not clear and should be elaborated.
• The authors speculate that EGF acted via erbB1 and erbB2 and heregulin via erbB3 and erbB4. However, the authors do not provide any good experimental evidence for this conclusion. The authors should either demonstrate for example the activation/phosphorylation of the respective receptors in response to the growth factors or analyze the effects of specific blockage of these receptors.
• In this context, for further experiments, the authors utilized erbB2 and erbB3 inhibitors /receptor antibodies. The authors should also analyze EGFR inhibitors /receptor antibodies for these experiments.

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: No
Declaration of competing interests:

None