Reviewer's report

Title: Impact of Gastroesophageal Reflux on MicroRNA Expression, Location and Function

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Reviewer: Andrew Feber

Reviewer's report:

The manuscript by Smith et al., "Impact of Gastroesophageal Reflux on MicroRNA Expression, Location and Function". The authors report the expression of a limited number of microRNAs in a small cohort of mucosa samples from oesophageal reflux (n=10) and control patients. Through the use of rt-pcr they show a significant difference in the expression of 3 miRNAs. They subsequently show that over expression of these miRNAs induces decreased proliferation and increased apoptosis. They also cells over expressing the miRNA to be located in the basal epithelium.

The statistics appear suitable.

The data presented is of some interest, and for the first time shows the increased expression of miRNAs in non-diseased esophageal mucossa. Although all the analysed miRNAs have previously been shown to be unregulated in barretts esophagus. However, the analysis has been carried out in only a small sample cohort and further validation in an enlarged set would be highly desirable, although not a pre-requisite for publication.

Major Compulsory Revisions

Minor Essential Revisions

1) The author need to address the figures and figure legends. At present the figure labels not not match those in the text. Further more the the figure particularly the ISH figures are unclear and fuzzy, higher quality images are needed.

2) A more in depth assessment of the expression of miRNA target genes would also be desirable.

3) Show effect on the expression of CK8, BMP4 and CK14 upon transfection of miRNA

Discretionary Revisions

1) The mirnas identified have already been shown to be over expressed in Barrett’s esophagus, and a further detailed analysis of the role of these microRNAs in the from reflux to barretts to malignant disease would be desirable.

2) is there any association between miRNA expression and progression to
barretts esophagus.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

'I declare that I have no competing interests