Reviewer's report

Title: Loss of miR-133a expression associated with poor survival of breast cancer and restoration of miR-133a expression inhibited breast cancer cell growth and invasion

Version: 1 Date: 1 August 2011

Reviewer: Hailong Wu

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Major Compulsory Revisions

1. In this paper, the authors demonstrated that mir-133a expression reduced in breast cancer cell lines by comparing mir-133a expression among HBL-100, ZR75-1, SKBR3, T47D, MCF-7 and MDA-MB-435. However, both HBL-100 and MDA-MB-435 have been classified as misidentified cell lines by ATCC because of presence of Y chromosomes and cross-contamination with the M14 melanoma line respectively.

The link to support my review:

Since the conclusion of lower mir-133a expression in breast cancer was accounting to the mir-133a level in HBL-100, it's better to replace HBL-100 to a real human mammary epithelial cell line, like HMEC.

2. MCF-7 is well known to have non-invasive property. I don't expect to see a lot MCF-7 cells in invasion assay. The authors need use an invasive breast cancer cell line, such as MDA-MB-231, to perform invasion assay.

3. The pictures of wound healing assay should be re-taken because the cell morphology is not distinguishable.

4. Xenograft model is required to make this paper accept.

5. I don't understand why they reverse transcribed RNA into cDNA before detection of mir-133a expression by using TaqMan MicroRNA Assay kits from ABI. This kit starts directly from total RNA, and cDNA synthesis is not required. Please clarify it.

6. ISH method detail is too simple.

Minor Essential Revisions

1. The authors need show ISH data on positive control and negative control.

2. In the second paragraph of Background, ‘is highly expression’ should be ‘is highly expressed’.

Discretionary Revisions

1. It’s better to use anti-mir-133a oligo in luciferase assay
2. It's better to show FSCN1 expression level in breast cancer cell lines corresponding to mir-133a level.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**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'