Reviewer's report

Title: Expression of EIF2C1-4 and PIWIL1-4 in human colon carcinoma with tissue microarray

Version: 1 Date: 11 June 2009

Reviewer: Kevin V Morris

Reviewer's report:

The manuscript entitled “Expression of EIF2C1-4 and PIWIL1-4 in human colon carcinoma with tissue microarray” by Lan Li, Chaohui Yu, Hengjun Gao, Youming Li surveys the expression of Agos and PIWIs in colon cancer samples. The body of work is an interesting start to a manuscript but requires an extensive amount of work and should not be published in its current form.

Pertinent issues:

1. The assays are dependent on polyclonal antibodies generated from in house peptides from the Ago’s or PIWIs. The validation of the respective antibodies is not shown. The authors claim there are no available recombinant argonaute proteins. This is not true the Ago’s 1-4 (Meister, Landthaler et al. 2004; Meister, Landthaler et al. 2005) are available online from AddGene. The authors need to validate that their antibodies are actually recognizing the proteins they claim they are recognizing. How do we know that the antibodies aren’t hitting some other target?

2. On page 7 the authors discuss western blot data for their derived antibodies but no western blot was shown or figure for which this claim is attached.

3. The enrichment of each Ago or PIWI should be validated from the tissue samples using qRT-PCR. It is possible to isolate RNAs from embedded tissue samples. A correlation of Ago or PIWI RNA with enriched protein by validated antibodies would bolster the data.

4. The authors discuss Agos and PIWI in the context of cancer stem cells. There should be an analysis of stem cell factor enrichment correlating with the Ago enrichment. An attempt to delineate the cancer tissue as distinctly different and maybe stem like with increased expression of the Agos or PIWI would be beneficial.

5. The authors should attempt to validate to what extent the Agos or PIWI are involved in cancer progression. One way to do this would be to suppress the respective Agos or PIWIs in colon cancer cell lines and determine what effect this has on the colon cancer cells division, metastasis, or overall fidelity. One could easily knockout the Agos or PIWIs using U1 adapters (Goracznik, Behlke et al. 2009) or antisense ODNs. Such experiments would assist in supporting the
notion that the Agos or PIWIs are somewhat functional in cancer cell fidelity.

Minor points:

(1) One page 4 the authors refer to RNA-mediated gene quelling. This is not terminology used in mammalian cells but rather applicable to chromosomal control found in fungi.

(2) In the abstract the authors state “Argonaute proteins are overexpressionin colon cancer…”. This should read “Argonaute proteins are overexpressed in colon cancer…

Literature cited:


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