Reviewer’s report

Title: Peroxiredoxin 2: A potential biomarker for early diagnosis of HBV related liver fibrosis identified by proteomic analysis of the plasma

Version: 1 Date: 11 November 2009

Reviewer: Akhilesh Pandey

Reviewer’s report:

The study presented by Lu et.al demonstrates utility of serum Peroxiredoxin 2 as a potential biomarker for diagnosis of early fibrosis. Identification of serum biomarkers can aid in development of non-invasive diagnostic tests for HBV related early fibrosis which will increase the survival chances of patients. The manuscript is suitable for publication after the following major and minor concerns are addressed.

Major Compulsory Revisions

1. The proteomics analysis is carried out using DIGE, followed by MALDI-TOF. The limitations of such approach are several. Peptide mass fingerprinting is highly prone to make erroneous interpretations. In addition to that, pI of the Prx II (claimed potential biomarker) is shifted by three units. Figure 2 shows that only two peptides were used by PMF to ‘identify’ PrxII – this cannot be used as definitive proof for PrxII (to make matters worse, one of these two peptides seems to be non-tryptic). Given these facts, authors are suggested to carry out in-gel digestion followed by MS/MS analysis.

2. The quality of the Western blots is poor. The authors should show entire panels of the W. blot membranes along with molecular weight markers for the readers to make their own decision about how good the antibody works and whether the signals are reliable enough.

Minor Essential Revisions

1. The authors are suggested to provide the raw values of protein levels identified in plasma as supplementary table. Distribution of the values is not clear. The error bars shown in box plot display a lot of variation in Prx II in early fibrosis condition. If such variation is observed, 100% success in identification of early fibrosis using 0.8 cut off by the algorithm created by authors is difficult to understand. The authors need to explain the method used to tackle this issue

2. The median indicated for Prx II for early fibrosis condition does not correspond to the value mentioned in the text. Authors are suggested to correct the plot.

3. It needs to be clarified if 20 ug or 20 mg protein was used for Western blot (page 10).
4. The authors can present DIGE image with a dye swap to show that the spot pattern is reproducible with both dyes

5. The authors are suggested to submit the raw data to public proteomics data repositories such as Tranche/PRIDE/Human Proteinpedia for community use.

Level of interest: An article of importance in its field

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

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

Declaration of competing interests:

I declare that I have no competing interests