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: 9 October 2009

Reviewer: Jianjun Shen

Reviewer’s report:

Using a 2-D DIGE-based proteomics approach, the authors studied chronic hepatic B virus (HBV) infection with the plasma samples of 49 healthy control subjects and 95 patients with different stages of fibrosis. They were able to identify peroxiredoxin 2 as a potential protein biomarker for the early detection of HBV related liver fibrosis. Though peroxiredoxin 2 is the only protein identified as potential biomarker for a very important disease, especially for the population inside China, this is an important step to take in the right direction. Overall, the authors designed their experiments properly. The quality of their written English is good. Should the authors satisfactorily address the following concerns, the manuscript can be published in BMC Gastroenterology.

1) While pooling samples is understandable in terms of the need to work with a single sample from each patient group, it’s potentially dangerous because use of pooled samples may mask interesting differences between patients within each patient group. Furthermore, pooling samples will eliminate the number of biological replicates, which is important for the calculation of biological significance. In this case, the authors at least need to discuss the pro and cons of pooling samples in their manuscript.

2) Depletion of 2 most abundant plasma proteins, albumin and IgG, together with pooling samples as described above, simplifies the proteomics analysis. However, there is a complete lack of detailed description for the depletion protocol. More detailed information about the method and results of the depletion (such as depletion efficiency, protein recovery) should be included. Moreover, potential depletion of other low abundance plasma proteins together with albumin and IgG should be discussed.

3) For Western blot analysis, “20 mg” of plasma proteins was loaded onto each lane. The unit of mg must be a typo because that’s too much protein.

4) There should be a space between a number and its unit (such as 30 min instead of 30min, 8 M instead of 8M). Please go over the entire manuscript and edit accordingly.

5) More detailed descriptions should be presented throughout the manuscript for the following tables and figures:
   a) What do the Mean±SDs in the Tables 1.1 and 1.2 mean?
   b) The authors need to provide a clear, and more detailed explanation of “Areas
under curve of 25 serological markers” for Table 3 in the text of the manuscript.
c) Enlarge Figure 6, so that this reviewer and readers can view it clearly. Right now, the detailed information of Figure 6 is not visible. Furthermore, a more detailed figure legend of this figure should be included.

**Level of interest:** An article of importance in its field

**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