Reviewer's report

Title: Reproducibility of brain metabolite concentration measurements in lesion free white matter at 1.5 T

Version: 3 Date: 8 May 2015

Reviewer: Chunxia Li

Reviewer's report:

Reviewers' comments:

This study investigated an important question related in vivo MR spectroscopy post processing: reproducibility since a lot of detailed work has not to be verified and still controversial. Authors address an important question; however, I have some concerns about the presentation and the interpretation of their measures.

General comments:
1. Concerns about the readability
The manuscript is still hard to follow though authors already tried their best to explain in detail such as using so many tables and figures to address and listed questions and answer them one by one. I strongly recommend authors: 1) to pay more attention the connection words between narration and tables and figures to make it to be understood and followed easily. 2) A simple flowchart might be very helped to explain how the equation works to compare if paired spectra get more reproducibility or not. 3) Reorganize the 7 questions and answers and related tables and figures to reduce repeated narration and make answers clear.

2. Lack of sufficient reference citation.
In the introduction and discussion sections, authors should back up their summary or discussion with sufficient reference citations. Authors should check thoroughly to make sure reference is adequately cited.

3. Table and table information errors.
All the top and bottom line of tables are missing. Some information in tables is not label clearly. Please refer some paper to make correct table and make sure all information in each table sufficiently and separately interpreted.

Specific comments:

Abstract:
Line 46: (minimal mean chi2) can be deleted.

Methods:
Line 167: “Six saturation pulses were positioned along each plane of the cube (figure 1) for outer volume suppression.” I just find 4 saturation pulses, please explain, or label or replace the figure.
Line 304: “no 5” should be “No 5”?

Line 308: (table 6) plus figure. 3?

Discussion:
Line 380: “The minimal signal to noise ratio for the amplitude of a metabolite was fixed consistently to eight.” What does this sentence mean? Why is eight?

Figure 3
Please make the label “a”, “b”, “c” to be prominently displayed.

Level of interest: An article of importance in its field

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.