Reviewer’s report

Title: Diffusion tensor MR imaging characteristics of cerebral white matter development in fetal pigs

Version: 1 Date: 29 Mar 2017

Reviewer: Alan Bainbridge

Reviewer's report:

To the authors: thank you for your changes and clarifications. I think they have improved the manuscript. I have a few further points to make but they are relatively minor:

1: Thank you for the clarification of the methodology for defining the RoIs. The description in your response was much clearer. The description in the manuscript text could still be improved to state clearly that RoIs were defined on the T2W images and then transferred in the GE workstation onto the parameter maps.

2: You admit in your response that the T2 imaging is unstable. Why is this? Although you say that you mention it in the limitation, here you simply say that the quality of the animal experimental images could be improved. Could you at least provide some some explanation in the text for the variability of the image quality between subjects and some discussion about how or whether this affects the results of the study.

3: You include now some quantitative data to back up the qualitative statements based on the histology analysis and that is appreciated.

4: There is a sentence in the results which still does not quite make sense. It now reads:

'The differences of various anatomical regions between the E85 group and E114 group, and between the E69 group and the E114 group, were significantly different from each other (P<0.05).'

Do you mean that although there is no difference between the E69 and E85 groups in absolute value, there is a difference in the change between E69-E114 and the change between E85-E114? If so can you explain how you tested for this and what the significance is? You seem to want tyo say that E69 and E85 are different even though the ANOVA tests suggest that they are not significantly so. Further to this there does not appear to be any further discussion of this point. What is the purpose of this test and what are you trying to demonstrate?

5: The discussion is a better length and easier to understand now - thank you. It could still benefit from some proof reading. For example:
Page 13: The sentence

'The changes of FA values from 1/2 to 3/4 of the gestational weeks was not significant, which was then dramatically increased between pregnancy.'

Needs work. Suggest:

'FA values did not change significantly between 1/2 way and 3/4 of the way through gestation but was then increased dramatically at term.'

Note similar sentence constructions that could be improved later on page 14.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I am able to assess the statistics

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