Reviewer's report

Title: Usefulness of 18F-fluorothymidine for early and accurate monitoring of antiproliferative effect of gefitinib in human tumor xenograft: Comparison with Ki-67 and phospho-EGFR expression

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Reviewer: annelies Debucquoy

Reviewer’s report:

In the current manuscript, the authors assessed the use of ³H-fluorothymidine as a biomarker for response assessment to gefinitib. The uptake of ³H-fluorothymidine was compared with the uptake of 18F-FDG, Ki67 and EGFR. The manuscript is overall well written, the experiments were performed carefully and the obtained data are interesting. I believe this paper can be accepted for publication, although I do have some comments that need to be addressed.

- Minor Essential Revisions

General

- Throughout the whole manuscript the authors seem to mix up ³H-FLT with 18F-FLT. If I understood the paper correctly, it should be ³H-FLT since it is injected together with the 18F-FDG. This should be corrected everywhere.

Background:

-paragraph 4, page 6: “However, these anatomical imaging techniques have limited value due to the relatively long periods required to obtain tumor size shrinkage the case of successful drug therapies.” This sentence should be rewritten.

-paragraph 4, page 7: the authors refer to a reference of 1998 by ‘recently’. I don’t think a paper of 1998 can be called recently, so this should be referred to differently.

- In the background section (last paragraph): Thus, in the present study, to evaluate whether 18F-FLT can be used for the early and accurate detection…

Materials and methods

- I would mention somewhere the origin of the A431 cells (lung?).

Discussion

- 2nd paragraph: the last sentence should be rewritten
- Discretionary Revisions

- Just a suggestion for future in vivo studies. It seems better to me to measure the mice tumours in 3 dimensions (#/6 * (length*width*depth)) rather than using the smallest diameter for both the width and the depth. To my opinion there is a big difference between a tumour that has a width of 3cm and a depth of 3cm with a tumour that has a width of 3 cm but only 1 cm depth. This is not taken into account with the current formula.

**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