Reviewer's report

Title: Hyperoxia increases the uptake of 5-fluorouracil in mammary tumors independently of changes in interstitial fluid pressure and tumor stroma

Version: 2 Date: 13 November 2009

Reviewer: Harriet Hopf

Reviewer's report:

In this study in an animal model, uptake of 5FU in DMBA-induced mammary tumors was increased by hyperoxia. The question posed is well defined and the methods are generally appropriate. The conclusions are well-balanced and adequately supported by the data. The references are appropriate and complete. The title and abstract accurately reflect the findings. The limitations are clearly stated. The writing is strong.

* Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

1. Experimental groups and treatment design. How was it decided to give HBO on days 1, 4, 7, and 10? The response to this question in the cover letter is appropriate. Please incorporate that information into the manuscript.

2. Statistics. How was the number of animals per group determined before the start of the study? What attempt was made to estimate the appropriate sample size? Why were there different numbers in each group? Were any animals excluded from treatment? Were those making the measurements blinded as to the treatment group? Were rats randomly allocated to the treatment group? How was the t-test /ANOCA chosen for analysis? Were data normally distributed? The explanation of the decision to use 5 animals per group is adequate in the cover letter. Please incorporate into the manuscript. The explanation of why the n differed between groups is adequate. Please incorporate the full explanation into the methods, as it is controversial whether using data from two tumors on the same animal as separate data points is appropriate. I think it is in this case, but the reader needs that information to come to a conclusion. The lack of blinding of the investigator should be disclosed in the methods section, and its possible impact on the results (bias) should be included in the discussion. Please include the information that data were analyzed for normality in the manuscript.

Minor essential revision

1 Page 6, Oxygen Stress, 3rd sentence. I'm not sure what principle the “in principle” refers to. Do you mean “in principal”? Either way, it doesn't make a lot of sense and I would delete.

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.