Reviewer's report

Title: Inhibition of Radiation Induced Migration of Human Head and Neck Squamous Cell Carcinoma by Blocking EGF Receptor Pathways

Version: 3 Date: 3 November 2010

Reviewer: Michael Höfler

Reviewer's report:

I have to admit that I hardly understood the substantive background of this manuscript. Some of my problems understanding the methods (e.g. randomization of cells) might be attributable to that, others (e.g. lacking sample sizes) might apply to other readers as well.

Major Essential Revisions

1. Abstract: The design of the study should be clearer. Mention that different cells were assigned different levels of radiation (this is not clear to a lay like me) and how many per level and cell characteristic (e.g. EGF). After reading the method section this was still unclear to me. In this respect: What is the stimulus in the addition to that (p.8)?

2. Abstract: Were the results similar across the 6 cell characteristics? Otherwise, solely reporting the global results would be misleading.

3. Can all cells with the same of the 6 characteristics be considered identical at the beginning so that no randomization was necessary? This is required for using causal language as done by the authors.

4. The authors should mention the benefit of generalized least squares regression as compared to simple linear regression for their data. Were the model assumptions met? Would some more robust method of regression have been necessary? The use of the Mann Whitney test suggests that the assumptions of linear regressions were not met.

5. Also, they should explain "compound symmetry correlation structure". Which correlations are assumed to be equal and how is this justified substantively or empirically?

6. The authors should not just reduce all their results to p-values. The main results should be presented as regression coefficients with SEs (or better: confidence intervals). This would show the random variation in the results and whether the study was sufficiently powered for the hypotheses (no comment on planning the sample size is provided).

Minor Essential Revisions

1. Don't use varying significance levels (e.g. p<.006), just report the p-values and compare them with just one one significance level.
**Level of interest:** An article whose findings are important to those with closely related research interests

**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