Reviewer’s report

Title: Establishment and identification of rabbit model of peritoneal carcinomatosis from gastric cancer

Version: 2 Date: 16 January 2010

Reviewer: Jens Hartmann

Reviewer’s report:

major compulsory Revisions

In the present revised manuscript many of the reviewers’ comments are put into practice. Especially the description of the different groups is clearly comprehensible now. Nevertheless there are still some facts to clarify.

1. Language was checked and considerably improved. However there are still many grammar and typing mistakes. Again, a revision by a native speaker is recommended.

2. The authors mention, that histopathological studies of tumour tissues from rabbits of all groups and time points showed metastatic disease. It still remains unclear however, how can the authors use squamous tumour cells create a tumour model of peritoneal carcinosis of gastric cancer, which is typically an adenocarcinoma, particially a tumour from different biological and histopathological behaviour. This remains a weak component of the study.

3. The endpoint and main parameter of the study is not clearly to identify. Establishment of a PC rabbit model as suggested in the conclusion paragraph? Simulation of advanced gastric cancer? Study of the progression and metastatic behaviour? Best technique to induce PC?

4. The manuscript should be condensed concentrating on the main objective of the study.

5. The absence of a control group and the small sample size weakens the study.

6. Paragraph ‘Methods - animal observation …’: Which were the exact parameters for euthanizing animals in group B and C? A direct comparison of tumour development between the groups is not possible. Why did the investigators chose this setting? The exact postoperative ‘survival' time must be provided because in group B+C might be euthanized much earlier than in group A – this fact has an tremendous impact on the evaluation of the different techniques and success in PC induction and the lack of lung metastases.

7. Paragraph ‘Methods - computed tomography to monitor …’: It is not easily to understand: week by week in 3 animals a CT scan was performed. Simultaneously 3 animals of this group were euthanized. Does it mean that the CT scans were performed always in the same 3 animals? Describing the CT scanner probably the Siemens sensation is meant.
A 12F-tube must have an ID of 4mm. The information within the brackets is redundant and should be omitted.

8. Statistical analysis: The use of non-parametric tests is required. Small and over the time decreasing sample sizes argue against normal distributions. Confidence intervals are missing. Corrections for multiple testing are needed when comparing intragroup differences over the time (i.e., bodyweight, tumoursize). When comparing very small groups (n=3) p-values are misleading and should be avoided or interpreted very cautiously.

The used statistical analysis is inappropriate. It should be corrected.

9. Paragraph ‘Results – success of PC model …’: 3 early deaths in group C and 3 animals without developing PC – this are 6 of 12. You refer to 7/12 – please explain.

Why was in at least 4 animals a fluid (lethal) rehydration necessary? That is not common after ip-injections or minor surgery.

10. Paragraph ‘Results – tumor growth …’: An acceleration of tumour growth cannot be deduced from this trial. You compare different animals on different time points (again: n=3?).

11. Table 1: Again: are p-values corrected for multiple testing and use non-parametric tests. Please provide in the legend, that these data are from group A animals and the number of scanned animals (3?).

12. An acceleration of loosing body mass is not visible after the second week. Again: please use non-parametric tests.

Please provide the data of group B+C animals. Did they suffer from an equally fast deterioration?

13. Figure 2: The y-scale should start at 0. The number of animals must be provided for each point of time (at W4 only 3 rabbits!). Are p-values corrected for multiple testing?

This diagram of a very small and rapidly decreasing number of animals seems to be inappropriate and dispensable for the objective of the study. It should be omitted.

14. Paragraph ‘Results – growth characteristics …’: It is generally problematic to deduce a development from the investigation in 3 animals per time point.

It is stated that tumours in group B+C showed the same growth character. Because all animals in these groups were euthanized at the time of ‘detoriation’ a development of tumour growth could not be investigated. This should be stated clearly.

15. Figure 3: Please provide the group.

16. Figure 4: Please provide the group.

17. Paragraph ‘Results – histopathological …’: What does ‘sacrifice after euthanasia’ mean?

2 rabbits after 2 weeks? It would be better generalized: all investigated tumour
specimen showed …

The last sentence suggests that specimen from animals were studied at different points of time. This suggestion should be avoided.

18. Table 2: The table shows results for CT scans in group B and C. In contradiction in the methods paragraph ‘computed tomography to monitor…’ it is mentioned, that only group A animals underwent CT investigations.

19. Paragraph ‘Results – medical imaging …’: This paragraph does not give additional information, is not mentioned in the discussion but there are several problems in understanding (see point 6+17 of this review). Focusing on the (certainly not exactly given) main objective of the study this paragraph and whole topic of CT scans should be omitted.

20. Paragraph ‘Discussion’: As already mentioned: the evaluation of the course of development of the tumour is problematic because of the very small sample size of 3 animals per point of time.

A comparison of the different groups is also nearly impossible because of the different (and for the reviewer unknown) postoperative survival times.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests'