Reviewer's report

**Title:** Surfactant Replacement or Open Lung Concept? Comparison of two treatment strategies in an experimental model of neonatal ARDS

**Version:** 2 Date: 25 March 2008

**Reviewer:** Wolfgang Strohmaier

**Reviewer's report:**

Major Compulsory Revisions

1. The age of “newborn” piglets seems to be wide: 6+/- days: is this the explanation for the wide range of paO2 at T=H?
2. There is no real control group showing the response to a “standard treatment”
3. What is the reason to exclude “non-responders” from analyses?
4. Why is treatment started after 1 hour in the OLC group compared to 10 minutes in the surfactant groups?
5. 16 animals for 3 groups is rather low: is there a statistical justification?
6. The dosage and the volume for surfactant are unclear (100 mg/ kg in which volume?). The concentration for monomeric Sp-B surfactant is given (60 mg/mL). These ranges (~50 mg/mL for SF-R11 ?) result in low administered volumes, which have been shown to result in poor distribution. There is no description of any procedure to enhance distribution (continuous chest movements?).
7. Figure 1: PaO2 reflects oxygenation and not gas exchange, compliance is a parameter of lung mechanics and not of lung function.
8. Figure 3: Is there any explanation why so different histology pictures do not show any difference in sum scores?
9. Quantitative measurements: Correction of absolute concentrations to BALF using the urea balance is not perfect, but a widely accepted tool to provide deeper insight into the quantitative relations in the alveoli. Any reason for not performing this correction?
10. Most of the conclusions drawn by the authors are not supported by the data: there is very poor evidence for any clinical relevant change and the data do not allow any clinically relevant conclusion.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of limited interest

**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'