



AARHUS UNIVERSITET

Dear Animal Welfare Committee Members

I hereby submit a nomination of my colleague **Jacob Thyrsted Jensen**, PhD-student at Christian Holms Laboratory, for the **3R Prize**.

Jacob works with Influenza and SARS-CoV-2 and had an initial project plan involving further development of an already established *in vivo* mouse model of Influenza infection. The goal of his initial plans was to modify this already known model and investigate the mechanisms underlying the damaging and subsequent repair of destroyed tissue during Influenza infections.

In the first month of his PhD Jacob used the majority of his time planning his animal experiments. Using the two R's, **Refinement** and **Reduction** Jacob created a plan to test his ideas of the model, but unfortunately, the results were inconclusive. Jacob were at a crossroad with how to proceed. He thought of ways to further develop his experiments when he attended a talk hosted by a research scientist from Bern University. He spoke of an *ex vivo* model of the human airways and Jacob immediately saw a way of **Replacing** his animal experiments by shifting from a murine *in vivo* model to a human *ex vivo* model and at the same time increasing the quality of his research.

Jacob spend 1.5 months at Bern University to learn this new model. The model allows for the researcher to grow a fully differentiated and functional human airway epithelium from non-invasive nasal swabs from volunteer donors. Now, a year later, Jacob has a model which allows him to investigate the mechanisms of Influenza infections in human airway epithelium, completely **Replacing** the need of animal experiments. The novelty of his findings also being increased as the results now reflect what happens in a fully functional human airway epithelium instead of a murine system or systems of cancerous or immortalized cells line.

Setting up the model was costly and required Jacob to apply for external funding to get everything needed for setting up the model. During the establishment of the model Jacob managed to be awarded 175.000 DKK of external funding from "*Beckett-fonden*" and the animal welfare fund "*Ester M. Konrad Kristian Sigurdssons Dyreværnsfond*".

With the external funding and knowledge gained from his research visit in Bern, Jacob is now in a place where animal models are no longer a part of his project plans. I truly believe that these efforts show high creativity and passion to do good in science while completely **Replacing** the need for animal experiments. This is unique, not only for his own project but also for future projects at Aarhus University. For this achievement, I very much hope that the Committee will consider him as the recipient of the 2021 3R Prize.

Best Regards

Kristian Juul-Madsen
Post.doc. in Thomas Vorup-Jensens Laboratory