Airway epithelial responses to rhinovirus, coronavirus and cigarette smoke

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Stellingen behorende bij dit proefschrift getiteld:

Airway epithelial responses to rhinovirus, coronavirus and cigarette smoke

1. Tailoring the *in vitro* model to the research question with regard to studying the impact of cigarette smoke exposure-induced mitochondrial abnormalities is important in the context of respiratory disease. (*This thesis, chapter 2*).

2. Exposure of differentiated airway epithelial cell cultures to cigarette smoke and rhinovirus is a useful model to mimic virus-induced COPD exacerbations *in vitro*. (*This thesis, chapter 3*).

3. Variations in epithelial susceptibility to SARS-CoV-2 infection between individuals and between anatomical locations in the respiratory tract can be partly explained by differences in airway epithelial cellular composition. (*This thesis, chapter 5*).

4. Access to human (lung) tissue and advanced *in vitro* models is essential for the transition towards animal-free research. (*This thesis, chapter 7*).

5. Achieving clinical control of infection requires not only a strong induction of interferon-stimulated genes early during infection, but also a subsequent timely decrease in interferon responses. (*Major J et al., Science. 2020 Aug 7;369(6504):712-717*).

6. Cell culture has important advantages since isolated cells can be exposed under controlled conditions to disease-relevant stimuli, and can be manipulated using a variety of techniques. (*Hiemstra PS et al., Eur Respir J. 2019 Nov 7;54(5):1900742*).

7. Development of new treatments for severe COVID-19 should focus less on the IFN response and more on controlling inflammation. (*Blanco-Melo D et al, Cell. 2020 May 28;181(5):1036-1045.e9*).

8. Because of the complexity of COPD pathology, a “one size fits all” pharmacological treatment will not be a successful strategy. (Brandsma CA et al, J Pathol. 2020 Apr;250(5):624-635).

9. Better matching of the experimental model to the research question, may not deliver models that are perfect but will make them more useful” (inspired by: “All models are wrong, but some are useful”; George E.P. Box; 1919-2013) .

10. “不积硅步，无以至千里；不积小流，无以成江海”。（荀子）
A journey of a thousand miles begins with a single step, a mighty river is made by small streams.