

Airway epithelial responses to rhinovirus, coronavirus and cigarette smoke

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Citation

Wang, Y. (2023, January 26). *Airway epithelial responses to rhinovirus, coronavirus and cigarette smoke*. Retrieved from https://hdl.handle.net/1887/3512925

Version: Publisher's Version

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Stellingen behorende bij dit proefschrift getiteld:

Airway epithelial responses to rhinovirus, coronavirus and cigarette smoke

- Tailoring the in vitro model to the research studying the impact of auestion with regard to cigarette smoke exposure-induced mitochondrial abnormalities 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).
- 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.