

The impact of smoking-associated aldehyde exposure on the molecular regulation of mitochondrial function in epithelial cells of the airways and lungs

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Stellingen

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The impact of smoking-associated aldehyde exposure on the molecular regulation of mitochondrial function in epithelial cells of the airways and lungs

Implications for COPD

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Maastricht, April 20th 2023

1. The role of the cellular micro-environment on the molecular regulation of mitochondrial turnover is understated in research models investigating COPD pathogenesis. (*This thesis*)
2. The use of advanced and complex *in vitro* pulmonary models over more simple conventional models is not per definition better to study the impact of inhalation toxicants. (*This thesis*)
3. Acute and prolonged acrolein inhalation *in vivo* elicit an opposite response on the molecular regulation of mitochondrial metabolism, indicating a potential role for adaptation. (*This thesis*)
4. Compounds other than aldehydes are likely to contribute to cigarette smoke-induced dysregulation of mitochondrial quality control processes. (*This thesis*)
5. Knowledge about the complex interplay between aldehydes, mitochondrial dysfunction and COPD pathogenesis can contribute to the development of novel therapies for COPD. (*Impact*)
6. Mitochondria are not only the ‘powerhouse of the cell’, but are key organelles involved in health and disease.
7. The Netherlands should follow the example of New Zealand by introducing a smoking ban for the next generation which is the first step to achieve the goal of a ‘smoke-free population’.
8. Publishing negative data is necessary for transparency, to avoid unnecessary repetition of experiments and prevent bias, however journals still appear to have a preference for reporting spectacular positive findings, partly due to the emphasis on having to score on impact statistics.
9. The soloistic structure of a PhD project should be reconsidered in academia, since shared and collaborative PhD projects could be more efficient, successful and gratifying.
10. Anyone who has never made a mistake has never tried anything new (*Einstein*)