Mitochondria in chemical-induced toxicity

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Stellingen

Behorende bij het proefschrift

Mitochondria in chemical-induced toxicity

1. Although *in vitro* models cannot fully mimic the complexity of the human body, they are useful when we are aware of their limitations (this thesis).

2. The versatility and flexibility of mitochondria makes these organelles valuable, but also complicated, biomarkers for changes in cellular homeostasis observed in toxicity and disease (this thesis).

3. Integration of biochemical assays, transcriptomic data and computational modeling supports understanding of the relationship between mode of action and subsequent events culminating in adversity (this thesis).

4. Detailed chemical-induced transcriptomic expression profiles, covering the complete chemical space, will facilitate chemical read across (this thesis).

5. Adverse outcome pathways can trigger researchers to ask biologically relevant questions, and will thereby improve the knowledge transfer between academic, industry and regulatory bodies (based on Ankley et al, 2010 *Environ Toxicol Chem*).

6. Careful considerations concerning variables, such as timing, response specificity and selectivity, are paramount for the selection of biomarkers that allow extrapolation from *in vitro* conditions to the human situation (based on Blaauboer, 2012, *ALTEX*).

7. Tiered-testing strategies reduce the need for animal models, and help to specify the type of organelle perturbation, resulting in an improved chemical classification and understanding of the expected type of toxicity (based on Xia, 2018, *Environ Health Perspect*).

8. *In vitro* assays are a suitable approach to determine uncertainty distributions, which should be used in future risk assessment (based on Bokkers 2017, *Food Chem Toxicol*).

9. Eye-opening collaborations crossing boarders and scientific disciplines are necessary to propel our scientific discoveries from the drawing board into regulatory application.

10. A PhD is like art: you have to take a step back to be able to comprehend what you have achieved.