

# Transcriptomics close to my heart

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# Propositions

- 1) The effects of DMSO need to be studied more thoroughly in order to determine to what extent it has biased scientific findings over the last decades (*Chapter 2*).
  - 2) Toxicological research should be performed at doses relevant to the human in vivo situation because higher doses can induce different toxic effects (*Chapter 3*).
  - 3) Incorporating the analysis of post-transcriptional mechanisms in transcriptomics data analysis is necessary to unravel underlying mechanisms of anthracycline-induced cardiotoxicity (*Chapter 4 & 5*).
  - 4) Applying mathematical models is the key for any genome-wide bioinformatics pipeline for analyzing complex biological regulatory mechanisms (*Chapter 5*).
  - 5) No 2 batches of induced pluripotent stem cells (iPSC)-derived models are the same due to genomic changes induced by the differentiation process (*Chapter 4*).
  - 6) The use of induced pluripotent stem cells (iPSC)-derived models can result in batch effects because the differentiation process induces genomic changes that differ between batches (*Chapter 4*).
  - 7) Whole transcriptome analysis is an important tool for human risk assessment because it provides better understanding of processes underlying toxicity.
  - 8) Data analysis is like a tunnel. First you have to face the darkness before you will see the light.
  - 9) Advanced in vitro experimental designs combined with detailed cross-omics analysis are able to provide insight into human biological processes and should therefore replace animal testing.
  - 10) "The power of cross-omics analysis is that you can find every mistake; when you do cutting edge science, you may cut yourself." (*Florian Caiment*)
  - 11) "Shoot for the moon. Even if you miss, you'll land among the stars." (*Oscar Wilde*)
  - 12) "In biology, nothing is clear, everything is too complicated, everything is a mess, and just when you think you understand something, you peel off a layer and find deeper complications beneath. Nature is anything but simple." (*Richard Preston*)
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