

Propositions accompanying the doctoral thesis

Novel models to study orthohantavirus infection and pathogenesis

1. Unless we understand how orthohantaviruses infect the human host upon inhalation, the likelihood of successfully developing prophylaxis, that protect against infection, is debatable (*this thesis*).
2. Involvement in orthohantavirus dissemination by infected immune cell types should be studied utilizing endothelial vessels-on-chip (*this thesis*).
3. For endotheliotropic viruses, organ-on-chip technologies should replace more traditional static two-dimensional cell cultures due to their better recapitulation of the *in vivo* situation (*this thesis*).
4. Comparison of host responses of human and reservoir rodent endothelial cells to orthohantavirus infection are predictive of the clinical impact in these hosts (*this thesis*).
5. The introduction of a human immune system into human lung engrafted mouse models will open the doors for a much needed pan-orthohantavirus small animal disease model (*this thesis*).
6. Orthohantavirus pathogenesis will remain a black box without the definitive identification of the orthohantavirus entry receptor(s) (*Mittler et al., Advances in Virus Research, 2019*).
7. Mice are not humans, but some mice are more human than others (*Douam & Ploss, Current Opinion in Virology, 2018*).
8. We do not take the epidemic potential of orthohantaviruses seriously enough (*Martinez et al., The New England Journal of Medicine, 2020*).
9. The comprehensive understanding of the nature of episodic zoonotic epidemics, including those of orthohantaviruses, can only be reached by combining basic and applied research (*Jonsson et al., Clinical Microbiology Reviews, 2010*).
10. "There exists no Pinocchio's nose to indicate unequivocally when an answer is a truth or a lie" (*David Dunning, Advances in Experimental Social Psychology, 2011*).
11. "Ex nihilo nihil fit" [English: *nothing can be produced from nothing*/Deutsch: *von nichts kommt nichts*] (*Titus Lucretius Carus, De Rerum Natura, c. 54 B.C.*).

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