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Deciphering the antiviral potential of tomatidine towards mosquito-borne viral infections

Troost-Kind, Berit

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1. RNA viruses are prone to mutations and therefore can quickly develop resistance towards an antiviral treatment. Thus, the genetic barrier to resistance should be a key factor to study for potential antiviral compounds. 2. Aside from the ability of tomatidine to inhibit infection, its anti-inflammatory and interferon-stimulating effects may also be of importance to alleviate the symptoms associated with DENV and CHIKV. (This thesis) 3. The often conflicting results of in vitro and in vivo studies of antiviral compounds are caused, among others, by insufficient understanding of the antiviral mechanism. Thorough mechanistical studies should therefore be conducted before proceeding to (pre)clinical studies. (This thesis) 4. The high barrier of resistance of CHIKV for tomatidine suggests that tomatidine exerts its antiviral activity through the modulation of cellular factors important for efficient replication. (This thesis) 5. The current SARS-CoV-2 pandemic demonstrates how a virus can dictate our lives for such a long time. Nevertheless, it also demonstrates the importance of internationally combined research to develop effective strategies to combat virus infections. 6. In a global pandemic, the greater good is more important than individual freedom. Thus, vaccination is not just an option but a duty to society. 7. Negative results are equally important than positive results. They should therefore be made equally accessible. 8. More funding should be available for fundamental virology research as this is crucial for understanding viral replication and effectively designing vaccines and antiviral therapies. 9. If you judge a fish by its ability to climb a tree, it will live its whole life thinking that it is stupid. (Albert Einstein). If you solely judge a person by their knowledge, you will miss what is most important: their potential to apply knowledge and their attitude for learning. 10. In the rush to return to our normal pre-pandemic lives, the time should be used to consider which parts of normal are worth rushing back to.