



Infectious
Diseases Labs

A*STAR IDL

Prof Johan Neyts

Laboratory of Virology and Antiviral Research,
Rega Institute for Medical Research,
University of Leuven, Belgium



Thursday 6th February 2025
2:30 PM to 3:30 PM (SGT)

Venue: Codon A & B, Matrix Level 5



Towards broader-spectrum antivirals for epi-/pandemic preparedness and biodefense and the establishment of an atlas of druggable antiviral targets

Small-molecule antivirals (such as against herpesviruses, HIV, HBV and HCV) are saving the lives of millions. Yet against most other viral infections, many of which are neglected and/or emerging, there are no antiviral drugs available. Potent broader-acting oral antivirals will also be essential for epi-/pandemic preparedness and in the context of biodefense. Given sufficient efforts, it should be possible to develop oral effective small-molecule antiviral drugs against a range of viral genera or families. To be able to develop such broader-acting antivirals, it will also be essential to identify novel druggable targets in the replication cycle of viral families. I will present some of our efforts and strategies to develop antiviral strategies including against flavi(dengue)-, corona-, entero-, paramyxoviruses as well as against rabies and HEV.

Prof Johan Neyts is full professor of Virology at the University of Leuven (KU Leuven), Belgium where he teaches virology at the medical school and at the school of dentistry. His laboratory www.antivirals.be has a long-standing expertise in the development of antiviral strategies and drugs against emerging and neglected viral infections such as dengue and other flaviviruses, Chikungunya and other alphaviruses, enteroviruses, noroviruses, HDV, HEV, rabies and coronaviruses. An ultrapotent pan-serotype dengue inhibitor developed in his laboratory and at the Centre for Drug Design & Development has recently been shown to result in an antiviral effect in dengue-infected humans. A second focus, together with Prof. Kai Dallmeier, is on the development of the PLLAV (Plasmid Launched Live Attenuated Virus) vaccine technology, which is based on the yellow fever virus vaccine as a vector. It allows to rapidly engineer highly thermostable vaccines against multiple viral pathogens. The KU Leuven spin-off AstriVax of which Johan is co-founder, is further developing this novel vaccine technology (currently in phase 1 studies). Johan is also co-founder of, and responsible for, the Belgian VirusBankPlatform (Tools for Epidemic and Pandemic Preparedness). He is past-president of the International Society for Antiviral Research. He published ~675 papers, received multiple national and international awards, has given ~360 invited lectures and a large number of interviews to lay-press.

Hosted by: Prof Lisa Ng

Seminar is open to all. No registration required.

Questions? Contact us at seminars@idlabs.a-star.edu.sg

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