#3, May 2019

KNVM Virology News

Dear fellow virologist,

We are looking back on an exciting and inspiring European Congress of Virology 2019 in Rotterdam, organised by Marion Koopmans and Ben Berkhout. Virologists have been treated to not just one but two episodes of TWiV by Vincent Racaniello and presentations on a wide variety of topics, ranging from pathogenesis (ortho and neo) to fusion protein structures and from Ebola outbreaks to the use of viruses as therapeutics.

This third edition of the newsletter contains short interviews with the two latest Beijerinck premium laureates: Rory de Vries (ErasmusMC) and Robert de Vries (Utrecht University).

Finally, we welcome your input for this newsletter. If you have anything (publications, PhD defenses, symposia) you would like to share, don't hesistate to let us know via KNVM.Virology@gmail.com.

The board of the Virology division of the KNVM

(Emmanuel Wiertz, Jeroen Kortekaas, Jolanda Smit, Hélène Verheije, Bart Haagmans, Katja Wolthers, and Puck van Kasteren)

Upcoming events

May 26-31, 2019
GRC Viruses and Cells
Lucca, Italy

June 9-13, 2019
Keystone meeting on plus-strand RNA viruses
Killarney, Ireland

July 20-24, 2019
ASV meeting
Minneapolis, USA

Virology Double-Interview

Rory de Vries
Postdoctoral researcher
Dept. of Viroscience
Erasmus MC

What is your main research focus?

I focus on illuminating the pathogenesis of morbilliviruses, more concrete: "How do morbilliviruses cause disease?" Measles virus is the best-known morbillivirus and a very current topic, since vaccine hesitancy has resulted in recurring measles outbreaks on almost all continents. Most of the specific research questions we have are related to morbilliviruses-associated suppression of the immune system.

How do you engage with the lay public?

The Royal Netherlands Academy of Arts and Sciences has awarded me the Beijerinck premium, partly for my engagement with a broad audience in a clear and concise manner. I enjoy explaining my research to specialists and non-specialists, mainly through teaching in multiple Bachelor and Master programs, animal handling courses and courses for medical doctors. Furthermore, I am actively engaged in a project called "Viruskenner", explaining virology to high-school students throughout the Netherlands, and even into developing countries.

Of which accomplishment are you most proud?

During my PhD and postdoctoral research, we have rewritten the measles textbooks. We were the first to identify dendritic cells and alveolar macrophages in the respiratory tract as initial cell types infected by measles virus, instead of epithelial cells. Furthermore, we showed that measles virus preferentially infects memory T-cells and therefore causes a prominent immune amnesia.

Robert de Vries
Assistant professor
Chemical biology
and drug discovery
Utrecht University

What is your main research focus?

My main focus is how influenza A viruses interact with glycans capped with sialic acid. Different specificities to these structures have enormous consequences for the biological phenotype of these viruses.

Who inspires you in your scientific career?

One of my biggest inspirators is Jonathan Yewdell. I think his assays, presentations, and his book are a must read / watch for young aspiring scientists. In general I'm inspired by good stories on serendipitous discoveries.

What is your favourite virus?

Serious question, fun answer, The T-virus of the umbrella corporation. As a kid I played resident evil that is based on virus-induced zombies, which is pure awesomeness. I highly recommend the B-level resident evil movies.

Of which accomplishment are you most proud?

During my post-doctoral work I discovered that influenza A viruses preferentially bind to branched glycans and that these structures with multiple LacNAc repeats on their antennae are their functional receptors. Now in my own group we use this binding mode as a starting point and it continues to fascinate me.

Recent publications

Gasque SN, van Oers MM, Ros VID. 2019. Where the baculoviruses lead, the caterpillars follow: baculovirus-induced alterations in caterpillar behaviour. Current Opinion in Insect Science. doi: 10.1016/j.cois.2019.02.008

Bouwman KM, Delpont M, Broszeit F, Berger R, Weerts EAWS, Lucas MN, Delverdier M, Belkasmi S, Papanikolaou A, Boons GJ, Guérin JL, de Vries RP, Ducatez MF, Verheije MH. 2019. Guinea Fowl Coronavirus Diversity has Phenotypic Consequences for Glycan and Tissue Binding. J Virol. doi: 10.1128/JVI.00067-19.

van Erp EA, Luytjes W, Ferwerda G, van Kasteren PB. 2019. Fc-Mediated Antibody Effector Functions During Respiratory Syncytial Virus Infection and Disease. Front Immunol. doi: 10.3389/fimmu.2019.00548.

Luteijn RD, van Diemen F, Blomen VA, Boer IGJ, Manikam Sadasivam S, van Kuppevelt TH, Drexler I, Brummelkamp TR, Lebbink RJ, Wiertz EJ. 2019. A genome-wide haploid genetic screen identifies heparan sulfate-associated genes and the macropinocytosis modulator TMED10 as factors supporting vaccinia virus infection. J Virol. doi: 10.1128/JVI.02160-18.