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Geneeskunde & Farmacie

GF

PhD in Pharmaceutical Sciences
2015-2016

INVITATION to the Public defence of

Hadewych HALEWYCK

To obtain the academic degree of **'DOCTOR IN PHARMACEUTICAL SCIENCES'**

Analysis of poliovirus with capillary electrophoresis

Wednesday 18 May 2016
Auditorium **Vanden Driessche**, 17:00h
Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussels

How to reach the campus Jette:
http://www.vub.ac.be/english/infoabout/campuses

Vrije Universiteit Brussel

Summary of the dissertation

The development and implementation, at the end of the '50s, of two polioviral vaccines was responsible for a huge drop of poliomyelitis patients worldwide. In 1988, the Global Polio Eradication Initiative was launched to eliminate the virus by 2000. During these, still ongoing, last steps to reach eradication and in the post-eradication era, the combination of a fast diagnosis of polio patients and environmental contamination and efficient treatment with antipolioviral therapy of the infected patients will be of critical importance. At this moment however, neither a fast diagnostic device nor an appropriate therapy is available to comply with the calls of the Polio Research Committee.

Here, the use of capillary electrophoresis (CE) was investigated as an alternative technique to identify poliovirus and for the evaluation of the formation of nanobody-poliovirus complexes, and therefore predicting the *in vitro* neutralizing potential of nanobodies. The developed CE method can be used as a rapid, qualitative screening for the affinity between poliovirus and nanobodies, based on a clearly visible and measurable shift in migration times on the electropherogram.

Curriculum Vitae

Hadewych Halewyck studied Biomedical Sciences and Pharmaceutical Sciences both at the Vrije Universiteit Brussel. She wrote twice a master thesis based on virological research more specifically on Pseudorabies Virus and on Theiler's Murine Encephalomyelitis Virus.

After graduating as a pharmacist in 2002, she worked in different community pharmacies in Brussels. In April 2007 she joined the lab of Prof. Rombaut to work on the introduction of separation techniques into virological research. In 2011 she was appointed as teaching assistant at the same department and continued her research in combination with teaching pharmacy students the practical skills in microbiology and biotechnology, next to other educational tasks. After the sudden and unfortunate passing away of Prof. Rombaut in January 2014, Prof. Yvan Vander Heyden solely continued as promotor to guide Hadewych during the last steps of her thesis. This was done in cooperation with the co-promotor Dr. B. Thys. The results of this research work were published in international peer-reviewed journals and presented as oral and poster communications at several national and international conferences. Hadewych also guided 6 students during their master thesis preparation.

Since December 2014, Hadewych works as Inspector at the Federal Agency for Medicines and Health Products.