

Vaccination

immunization injection procedure
pathogens function
prevent microbiology
widespread administration
complications
infectious

Vaccine & Infectious Disease Institute & Product Development

VAXINFECTIO-PO

formally recognized as a centre of Excellence at the University of Antwerp and as WHO Collaboration Centre for Prevention and Control of Infectious Diseases for the WHO European Region, is a multidisciplinary platform focusing on integrated vaccine and infectious disease research with a strong emphasis on valorization of research in collaboration with decision-making forums, research institutes and industry.

VAXINFECTIO-PO combines the multidisciplinary and complementary expertise, and contemporary infrastructure incorporating state-of-the-art technology of four research groups:

- Centre for the Evaluation of Vaccination;
- Laboratory of Medical Microbiology;
- Laboratory of Experimental Hematology;
- Department of Design Sciences.

We provide a unique platform of translational medicine approaches to bring ideas from the discovery stage, through development and testing, and on into innovations that improve health, including development of novel and affordable diagnostics and treatment/prevention for infectious diseases.

Core competencies include a vaccine trial research centre with health economics and epidemiological research, an antimicrobial resistance trial research centre, microbiological research and diagnostics, translational immunological and stem cell research, and development and evaluation of innovative medical and diagnostic devices.

www.vaxinfectio.be

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VAXINFECTIO
Vaccine & Infectious Disease Institute
University of Antwerp



Product Development
University of Antwerp

Our expertise

Platform for conducting vaccine trials (phase 1-4)

VAXINFECTIO-PO has more than 25 years of experience in conducting vaccine trials (Phase 1-4) in all age groups (from very small infants to the more 'silver' population), in healthy as well as various patient populations; more than 40 policy research projects related to vaccination have been conducted. We are part of an international vaccine trial network and have main expertise in

- Vaccine field effectiveness and efficacy studies, both for prophylactic and therapeutic vaccines
- Epidemiological studies
- Vaccine device research
- Health economic studies
- Infectious disease modelling

Cell-based therapeutics

VAXINFECTIO-PO has a track record on the induction of anti-tumor and antiviral cellular immune responses using dendritic cell-based vaccines.

Research and expertise is mainly focused on

- Understanding of cellular processes and interactions involved in the activation of effector T cells by antigen-presenting cells that are able to destroy tumor cells and virally infected cells or, in case of auto-immunity, normal cells in the body, such as in Multiple Sclerosis
- Stem cell immunology with interest in the transplantation effects of autologous and allogeneic adult stem cells in small animal models in order to study the survival, migration and function of transplanted stem cells

Biomarker discovery and mechanistics of antibiotic resistance

VAXINFECTIO-PO has major expertise in studying the impact of antibiotic use at the individual level utilizing state-of-the-art techniques at the gene, genome and microbiome levels, and studying resistance mechanisms also in context of commensals and environmental pathogens.

Research on bacterial pathogenesis especially in relation to the role of biofilm formation in causing recalcitrant infections and therapeutic failures as well as host- and pathogen-related biomarker discovery is also well-established at the institute.

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Techniques and available expertise on this research line include

- In vitro models of biofilm formation
- Animal models of infection
- Whole genome sequencing, optical mapping and metagenomic approaches
- Bio-imaging (Fluorescence and confocal microscopy)
- Transcriptomics, proteomics and lipidomics

Design of medical and diagnostic prototypes and devices

Several research projects for developing and validating prototype concepts for innovative medical and diagnostic devices are ongoing, which can be through full development of a marketable device when felt appropriate. This collaboration formed the basis for the creation of a university spin-off (see www.novosanis.be).

What we offer

VAXINFECTIO-PO has an impressive track record in research and support of pharmaceutical and diagnostic R&D in the field of vaccines and infectious diseases. Building on our world-renowned multidisciplinary scientific excellence together with our well-trained, dynamic staff we are uniquely positioned to provide an integrated translational research platform to advance research. This goal is also achieved through the presence of state-of-the-art infrastructure including a Phase I vaccine research platform and a platform for clinical studies on antimicrobial resistance. These platforms are open for collaboration with other research groups inside and outside the University of Antwerp and the University Hospital of Antwerp with competitive 'bedside-to-bench' delivery timelines to quickly adjust the vaccine development process. We also offer high-tech Cellular Immunology facilities including GMP cell processing units (clean rooms, therapeutic cell banks and regulatory excellence). This infrastructure combined with state-of-the-art technology for biomarker identification and diagnostic development positions us as a preferred partner for collaborative projects, both with industry and other research institutes in and outside Europe.

