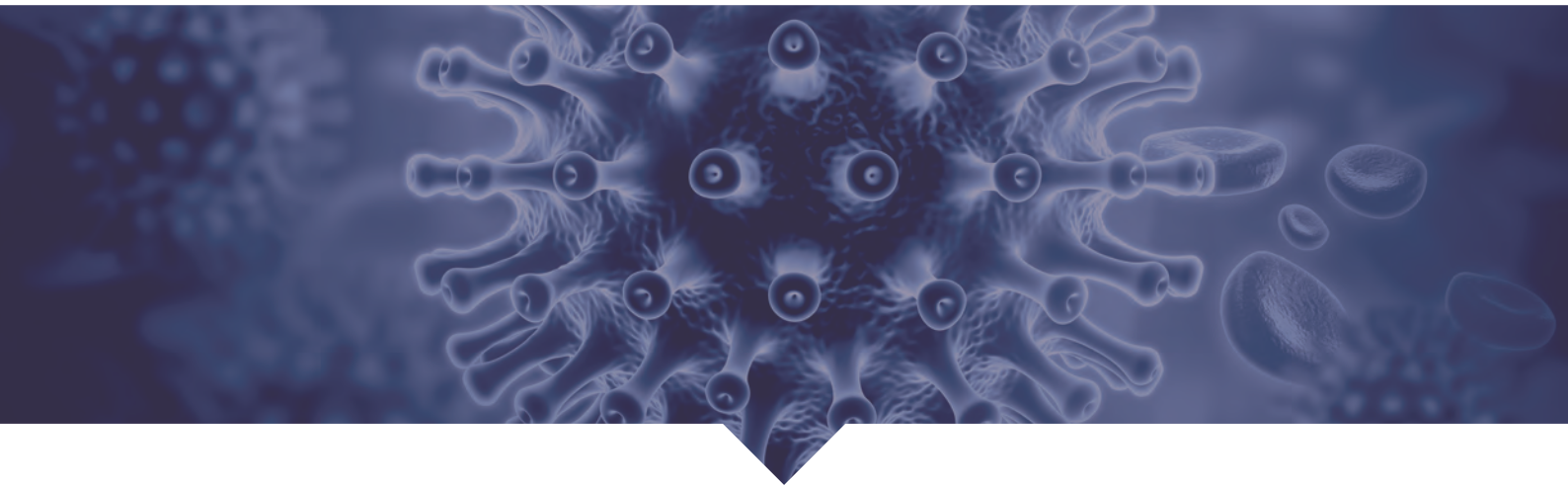
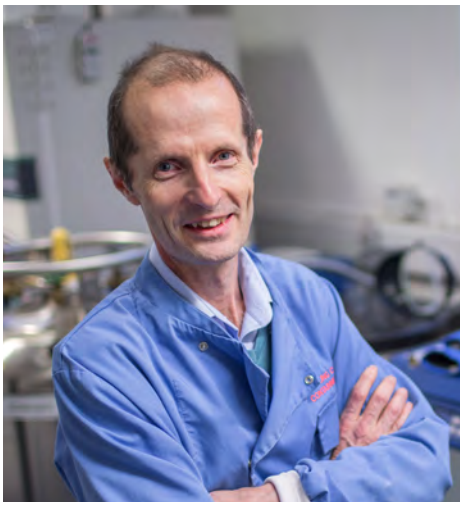
EAVI2020
EUROPEAN AIDS VACCINE INITIATIVE

May newsletter 2019



A message from Prof. Rob Shattock

Welcome to the May edition of the EAVI2020 newsletter.



The EAVI2020 program is at an exciting and critical phase. Its first vaccine candidates entered clinical testing in March. This first study represents a landmark in the development of next-generation HIV envelope proteins and is the first in the world to start to assess the potential of using native-like stabilised trimers in different prime boost combinations. This success has only been possible through the integrated action and commitment of many partner institutions. It demonstrates how combined effort and innovation can drive a pipeline of novel candidates from discovery through to clinical assessment within a very short timeline.

The development of eight novel trimers and two T cell vaccine strategies within the time constraints of the program represents unprecedented progress that has yet to be matched. In another first, the consortium has embraced a strategy of using an Experiment Medicine trial that sets an understanding of human immunity as the central aim of discovery. This is establishing a roadmap for nimble and cost-effective approaches for the iterative development of strategies designed to drive the development of broadly neutralising antibodies, a concept we call “clinically informed reverse vaccinology”.

The next phase of the project will be to apply in-depth systems immunology to fully understand the human response to these new candidates and completing four or more clinical studies before the end of the program. While our most advanced candidates are entering human testing there is a burgeoning pipeline of highly novel approaches being developed across the consortium, many of which are moving into advanced animal testing. This is a testament to the richness of European science in HIV vaccines and ensures a momentum that will drive progress beyond the time frame of the current program. Critical to sustaining this momentum is our emphasis on training and mentoring of early-career scientists; it has been a privilege to witness their intellect, creativeness, and dedication to HIV vaccine research. With the right funding opportunities, this new talent is set to sustain progress and innovation across the EU.

EAVI2020 highlights

- Start of clinical trials for HIV vaccine
- 7th PhD training course in Vienna a success
- ConM SOSIP article is published in Nature Communications and featured in a blog post on the Nature Research Microbiology Community
- Prof Robin Shattock leads vaccine discussions at Imperial Global Science Policy Forum

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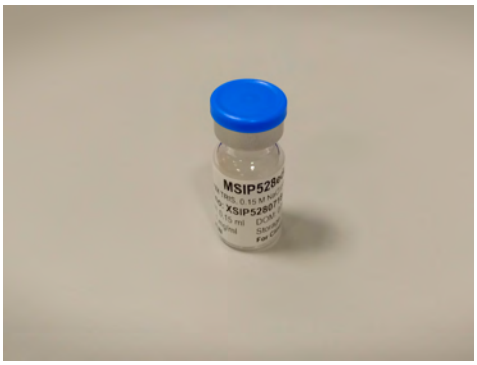
Start of clinical trials for HIV Vaccine Trial

Clinical trials now underway - a huge milestone for EAVI2020

In March EAVI2020 took another step in bringing the development of a HIV vaccine closer to reality. An amazing milestone for the EAVI2020 project, the trial will assess how different native-like envelope proteins influence the development of protective antibodies. The first dose was administered on March 28 at NIHR Imperial Clinical Research Facility with up to 50 participants to receive a range of different envelope proteins over a 12-month period.

This clinical trial is a first of its kind, investigating the use of several engineered proteins designed to present stabilised structures found on the surface of HIV and assessing how combinations of these different native-like envelope proteins influence the development of protective antibodies. No other study is currently assessing how combinations of stabilised native-like trimers can be used together. The trial is the result of a three-year international collaboration to develop a range of stabilised viral envelope proteins that can be studied in humans and it represents the first in a series of five clinical studies to be conducted by EAVI2020.

Read the full story on the EAVI2020 website



Publications

- Efficient induction of T-cell responses against conserved HIV-1 regions by mosaic vaccines delivered as self-amplifying mRNA in *Molecular Therapy Methods & Clinical Development*
- Structure and immunogenicity of a stabilized HIV-1 envelope trimer based on a group-M consensus sequence in *Nature Communications*

Upcoming for EAVI2020

- EAVI2020 Annual Meeting | October 23-25, 2019 | Paris, France

Upcoming HIV/AIDS events/awareness days

- International Conference On HIV-AIDS, STD's & STI's | June 03 - 04, 2019 | London, UK
- 17th European AIDS Conference | November 06-09, 2019 | Basel, Switzerland

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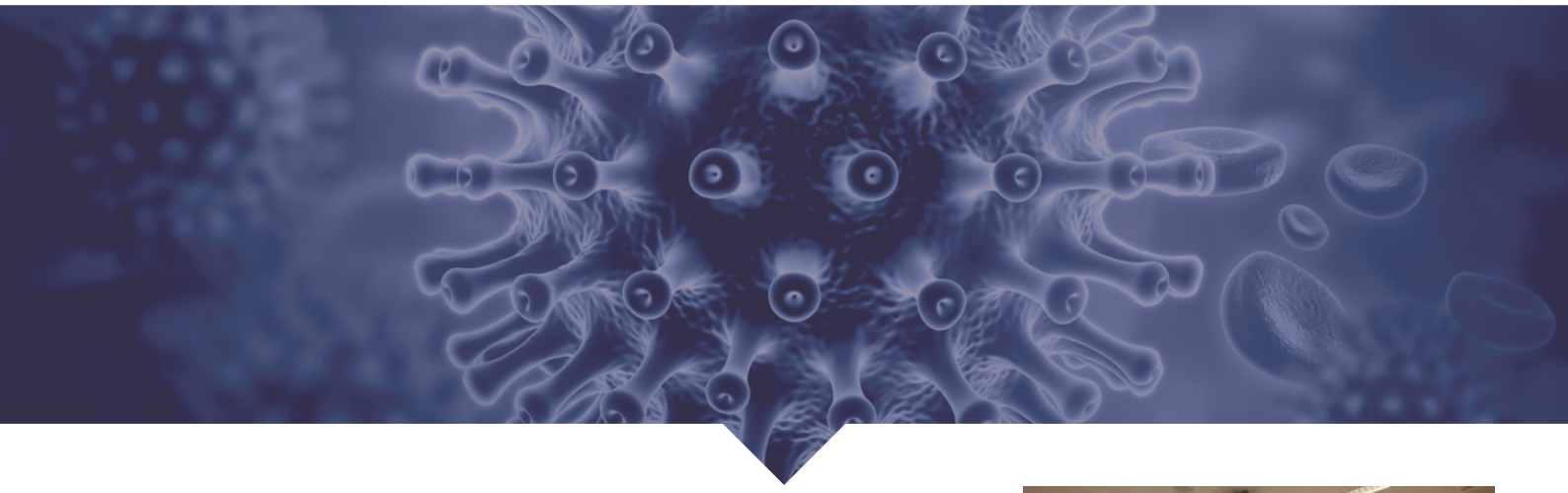

From Lab to Clinic

7th PhD training course in Vienna a success

The 7th PhD training course, From Lab to Clinic was a huge success in April. This iteration of the course was held in Vienna and hosted by the Department of Biotechnology (DBT), University of Natural Resources and Life Sciences (Vienna) and Polymun Scientific GmbH (Klosterneuburg).

Students presented research data addressing several topics on HIV vaccine development and immunology. Tutors and organisers were overly impressed with the scientific level of presentations and quality of engagement. Dr. Joan Joseph (Fundació Privada Clínic per a la Recerca Biomèdica, FCRB) summed it up by noting "we could realise the training capacity-building achieved after three years of training activities and experimental work in progress, empowering the students in their scientific careers."

Also on the agenda was a visit to BOKU's BioIndustrial Pilot Plant at the Department of Biotechnology, a tour of the Polymun facility, and tuning in to EAVI2020's monthly research call.

Read the full story on the EAVI2020 website

ConM SOSIP paper published in Nature Communications and Blog

With many contributing EAVI2020 members to this project, *Structure and immunogenicity of a stabilized HIV-1 envelope trimer based on a group-M consensus sequence* is published in Nature Communications and Nature Microbiology blog.

Synopsis: The envelope glycoprotein on the outside of HIV-1 is the main target of many vaccine efforts. We have developed a soluble version of the envelope glycoprotein based on the consensus sequence of virtually all circulating HIV-1 strains from group M (ConM). We determined its high-resolution structure and it showed that ConM is a life-like mimic of the envelope glycoprotein of the virus. When ConM was used as an immunogen, especially when presented on nanoparticles, induced very potent immune responses in rabbits and macaques. These promising results have encouraged the start of two phase I clinical trials using ConM as an immunogen: one is taking place in London, as part of the EAVI2020 project, and the other trial will take place in Amsterdam.

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