



UCT biopharming group cements new international collaboration

The Biopharming Research Unit (BRU) at UCT has announced that it is joining forces with Canada-based biopharmaceutical company Medicago Inc. to develop a vaccine against Human papillomaviruses (HPV).

What makes this particular collaboration remarkable is that the vaccine in question will be produced in plants.

“We are excited and honoured to work with one of the world's most advanced companies in the field of plant-made vaccines,” said Prof. Ed Rybicki, Director of the BRU, in reference to Medicago’s earlier success in producing candidate vaccines against influenza viruses.

The BRU has itself been at the forefront of HPV vaccine and plant-produced therapeutic research for the last 10 years.

Dr Inga Hitzeroth, Deputy Director of the BRU, echoed Rybicki’s sentiment, adding that she looks forward to a profitable collaboration with Medicago. The Canadian organisation is providing the funding and some materials for the research, while the BRU provides the expertise to develop and produce the virus-like particles (VLPs) that will be used as vaccines against HPV.

“This collaboration has the potential to bring forth novel vaccine solutions against human papillomaviruses that provide improved protection from the wide variety of circulating virus strains,” said Marc-André D'Aoust, Vice-President of Research and Innovation at Medicago.

Plant-made therapeutics

In recent times, plant-based manufacturing technologies have gained popularity as a rapid and cost effective way to produce antibodies, vaccines and a range of other therapeutic products for human use.

Notable international successes include the development of Medicago’s clinical stage influenza vaccines, the therapeutic for Gaucher disease, anti-Ebolavirus antibodies, and experimental patient-specific non-Hodgkin lymphoma vaccines.

Plants make particularly effective factories for biological products: they are easy and inexpensive to grow and maintain, and can produce complex biological products quickly and reliably.

Long-standing expertise

The BRU has been perfecting this process for years; in fact, they were the first group worldwide to produce significant amounts of HPV protein in plants. The unit’s name, however, is new. It was changed in 2013 to reflect a shift away from basic virology and vaccine research, towards more applicable research into production of human and animal therapeutics in plants.

The group has around 17 years of experience in producing proteins and VLPs in plants. Aside from HPV, the group has also worked on Human immunodeficiency virus (HIV), avian and human influenza, as well as animal viruses such as Bluetongue virus, and Beak and feather disease virus.

Cutting edge vaccine research

Medicago Inc. is dedicated to developing novel plant-based vaccines and other therapeutic products for human use. During the swine flu pandemic in 2009, they successfully produced an experimental vaccine in 19 days, a previously unheard-of achievement. In 2012, Medicago demonstrated its capability to use plants efficiently by producing 10 million doses of pandemic influenza vaccine in a month for a US Defense Advanced Research Projects Agency (DARPA) project.

Medicago was acquired by the Mitsubishi Tanabe Pharma Corporation in September 2013.

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Media Enquiries:

Name: Prof Ed Rybicki ,Director of the BRU

Email address: ed.rybicki@uct.ac.za

Phone:+27 21 650 3265