



## Icosavax Launches with \$51 Million Series A Financing to Advance Computationally Designed VLP Vaccines

- *Two-component virus-like particle (VLP) technology developed at the Institute for Protein Design exclusively licensed from the University of Washington for a variety of infectious disease indications*
- *License secured from NIH for DS-Cav1 (clinically validated prefusion F antigen) for RSV indication*

SEATTLE, October 3, 2019 – [Icosavax, Inc.](#) today announced the launch of the company with a \$51 million Series A financing, led by Qiming Venture Partners USA and joined by Adams Street Partners, Sanofi Ventures and NanoDimension, with continuing support from its seed investors. The company was founded on computationally designed self-assembling virus-like particle (VLP) technology developed at the Institute for Protein Design (IPD) at University of Washington School of Medicine ([Cell 2019, Preview](#)). The proceeds of the financing will be used to advance the company's first vaccine candidate, IVX-121, for respiratory syncytial virus (RSV) for older adults through Phase 1b clinical studies. Icosavax also announced today its leadership team, board of directors and key scientific advisors.

“Working closely with the Institute for Protein Design, we started Icosavax with seed funding from its philanthropic supporters,” said Adam Simpson, Chief Executive Officer of Icosavax. “This support allowed us to assemble a world-class team and to help translate the scientific insights from IPD into IVX-121, our lead candidate for RSV. We are thrilled with the quality of the investor syndicate we have built who provide both significant expertise and financial support to enable advancement of IVX-121 into the clinic and the application of our VLP technology to a whole class of vaccine targets with significant unmet medical needs.”

VLPs enable high-density, multivalent display of antigens in a manner that closely resembles viruses, with an important difference. VLPs contain no genetic material, so they are non-infectious and can provide a safer alternative to live-attenuated or inactivated vaccines. Naturally occurring VLPs have delivered successful vaccines, including Gardasil® and Cervarix® against human papillomavirus (HPV) and Enderix-B® and Recombivax HB® against Hepatitis B. However, VLPs have been difficult to use for the display of complex heterologous antigens, like in the case of RSV.

Mark McDade, who is managing partner of Qiming Venture Partners USA and was previously a founder, COO and director of Corixa Corporation (sold to GSK), said “We were extremely impressed with this novel approach using computational protein design to create VLP-based vaccines that have improved efficacy and are simple to manufacture. Our investment in Icosavax supports the value of science and technology to improve public health and our belief that preventing infection is preferable to treating illness.”

“Icosavax’s vaccine technology solves the problem of constructing and manufacturing VLPs displaying complex antigens by utilizing computationally designed proteins that separate the folding of individual protein subunits from the assembly of the final macromolecular structure. The individual proteins are expressed and purified using traditional recombinant technologies, and then self-assemble into VLPs when mixed together,” said Icosavax co-founder Neil King, Ph.D. VLPs are known to induce superior immunological responses compared to traditional soluble antigens, eliciting protective immune responses while reducing the need for strong adjuvants, which in some instances have been associated with side effects.



The company's RSV vaccine candidate, IVX-121, incorporates a stabilized prefusion F antigen licensed from NIAID/NIH (DS-Cav1; [Science 2019](#)). Extensive preclinical studies conducted at IPD and Icosavax suggest that IVX-121 could increase the protective immunogenicity of RSV F compared to the DS-Cav1 antigen alone.

Tadataka (Tachi) Yamada, M.D., chair of Icosavax's board of directors explained, "RSV can cause a life-threatening respiratory infection with consequences as severe as those associated with influenza in older adults. An effective RSV vaccine could have an impact on the lives of millions of people around the world."

Tachi previously served as chief medical and scientific officer of Takeda Pharmaceuticals, where he was responsible for the acquisitions of Inviragen (dengue vaccine) and LigoCyte (norovirus vaccine). The board of directors also includes Terry Gould, a partner and head of Growth Equity Investments, Adams Street Partners; Jason Hafler, the U.S. Head of Investments at Sanofi Ventures; Eric Moessinger, a partner of NanoDimension, Mark McDade, and Adam Simpson.

Simpson added, "We are pleased to announce our leadership team who has extensive experience in successful vaccine development and our board of directors and key advisors, which include leaders in computational protein design and global vaccine programs, experts in successfully advancing novel technologies to vaccine products, and entrepreneurs who have helped companies develop and create commercially valuable medical products that benefit human health."

The founding leadership team of Icosavax:

- **Adam Simpson** is the chief executive officer (CEO). He is also the CEO of PVP Biologics, another spinout from IPD. Previously he served as president and chief operating officer (COO) of Cypher Genomics (sold to Human Longevity), and chief business officer, Meritage Pharma (sold to Shire).
- **Doug Holtzman, Ph.D., MPH** is the chief scientific officer. Previously, he served as vice president, Discovery, Takeda, and deputy director, Childhood Pneumonia, Bill & Melinda Gates Foundation. Prior to his work in global health he worked in a number of innovative early-stage biotechnology companies, including Millennium Pharmaceuticals (sold to Takeda) and Ironwood.
- **Niranjan Kanesa-thasan, M.D., MTMH, FIDSA, FASTMH** is the chief medical officer and has contributed to the development of seven licensed vaccines. Previously, he served as the clinical franchise head, GSK Vaccines; chief medical officer, Americas, Novartis Vaccines; and vice president, Medical Affairs and Pharmacovigilance, Acambis (sold to Sanofi Pasteur).
- **Charles Richardson, Ph.D.** is the senior vice president, Technical Operations. Previously, he served as global head, CMC, Takeda Vaccines; senior vice president, R&D, LigoCyte (sold to Takeda); vice president, Manufacturing, Corixa (sold to GSK); and vice president, Pharma Discovery, RibImmunoChem (sold to Corixa).

Icosavax's founding scientists, scientific advisory board (SAB) members, and key advisors are:

- **Neil King, Ph.D.**, is a co-founder of Icosavax, inventor of the computationally designed VLP technology, and chair of the SAB. He is a researcher at the Institute for Protein Design and an assistant professor of biochemistry at the UW School of Medicine.



- **David Baker, Ph.D.**, is a co-founder of Icosavax. He is the director of the Institute for Protein Design, an endowed professor of biochemistry at the University of Washington School of Medicine, and a Howard Hughes Medical Institute (HHMI) investigator.
- **Ralf Clemens, M.D.**, is a development advisor and SAB member and a leading expert in vaccinology with more than 30 years of experience in global vaccine development at Takeda, Novartis, and GSK. Ralf developed and brought to licensure more than 25 different vaccines and has published extensively on vaccines and public health.
- **Christian Mandl, M.D., Ph.D.**, is a SAB member and has an accomplished academic career in molecular and clinical virology. Previously, he served as global head of Research, Early and Exploratory Clinical Development at Novartis Vaccines, leading more than 300 discovery and clinical researchers in the development of a broad range of viral and bacterial vaccines, adjuvants, and delivery platforms.
- **Jean-Paul Prieels, Ph.D.**, is a SAB member and his career spans from basic research to process and product development. He previously served as a senior vice president of Research and Development at GlaxoSmithKline Biologicals (now GSK Vaccines). He was instrumental in developing several commercially available vaccines, such as rotavirus, human papilloma virus (HPV), pneumococcal conjugates, and others.
- **Barney S. Graham, M.D., Ph.D.**, is a SAB member, and inventor of DS-Cav1, the clinically validated RSV F antigen incorporated into IVX-121. He is an immunologist, virologist, and clinical trials physician. He was one of the founding investigators for the National Institute of Allergy and Infectious Diseases (NIAID) Vaccine Research Center (VRC) at the National Institutes of Health (NIH), where he is now the deputy director and chief of the Viral Pathogenesis Laboratory and oversees the advanced development of VRC candidate vaccine products.

Icosavax's in-licensed computationally designed VLP technology is a product of the IPD's Translational Investigator Program, which enables entrepreneurial researchers to turn their first working versions of designed proteins into commercially viable assets. The license to this technology was negotiated with CoMotion at the University of Washington, UW's collaborative innovation hub.

#### **About Icosavax**

Icosavax is focused on developing safe and effective vaccines against infectious diseases that address important unmet medical needs and reduce healthcare costs. The company was founded on breakthrough computationally-designed virus like particle technology, exclusively licensed for a variety of infectious disease indications from the Institute for Protein Design at the University of Washington. Icosavax is located in Seattle. For more information, please visit [www.icosavax.com](http://www.icosavax.com).

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