

**VLP Therapeutics Japan, Inc.**  
**The Research Foundation for Microbial Diseases of Osaka University**  
**Denka Company Limited**

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**VLPT Japan, Biken Foundation, Denka sign agreement to develop self-amplifying  
"replicon" RNA influenza vaccine**

VLP Therapeutics Japan, Inc. (VLPT Japan), the Research Foundation for Microbial Diseases of Osaka University (BIKEN Foundation), and Denka Company Limited (Denka) together announced on September 27 the conclusion of a collaborative research agreement to develop a seasonal influenza vaccine using self-amplifying "replicon" RNA technology.

The number of influenza patients in Japan in a typical year is estimated at about 10 million, and the annual number of deaths due to influenza or influenza-induced pneumonia based on excess mortality rates is estimated to be about 10,000. The HA antigen in influenza viruses is prone to mutation, which is one of the reasons for the near-annual influenza epidemic. One of the basic measures to prevent seasonal influenza is vaccination. Current flu shots are produced mainly by embryonated egg culture, which requires large quantities of high-quality embryonated chicken eggs and it takes over six months for the vaccine production.

VLPT Japan, BIKEN Foundation, and Denka have agreed to improve replicon technology proprietary to VLPT Japan and develop a novel influenza vaccine in this joint research. Replicon technology not only has advantages of conventional mRNA technology, which can be easily modified and swiftly manufactured, but is also expected to contribute to the development of vaccines that are safe to use, effective at lower doses, and provide long-lasting immunity. The three organizations aim to assess the efficacy and safety of the vaccine prototype in mice and run preliminary stability studies by the end of FY2024.

Through this collaboration VLPT Japan, BIKEN Foundation, and Denka will strive to contribute to society in healthcare and enhance people's quality of life.

[Collaboration overview]

- **Objective:** Development of a seasonal influenza vaccine using replicon RNA technology.
- **Scope:** Selection of vaccine candidates for clinical development through vaccine design, prototype production, and prototype evaluation.
- **Roles:**
  - **VLPT Japan:** Design the vaccine; Develop vaccine prototypes and provide them for Biken Foundation and Denka; Evaluate the physical properties (including stability) and titers of vaccine prototypes.
  - **BIKEN Foundation and DENKA:** Evaluate the pharmacological properties and safety of vaccine prototypes.

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**About VLP Therapeutics Japan:** [VLP Therapeutics Japan, Inc.](#) (VLPT Japan), founded in 2020 by Dr. Wataru Akahata originally as a wholly owned subsidiary of US-based [VLP Therapeutics, Inc.](#) (VLPT), is a Tokyo-based biotech company. VLPT Japan is currently engaged in research and development of prophylactic vaccines against infectious diseases, including COVID-19, influenza, and dengue. The COVID-19 project is funded by the Japan Agency for Medical Research and Development (AMED) and the Japanese Ministry of Health, Labour and Welfare. VLPT, co-founded in 2013 by Drs. Wataru Akahata, Ryuji Ueno, and Sachiko Kuno, is a Maryland, US-based biotech company with a mission to address unmet medical needs worldwide and expand the frontiers of vaccine treatment. VLPT is currently engaged in research and development of a cancer treatment vaccine as well as prophylactic vaccines against infectious diseases including malaria and dengue.

**About the Research Foundation for Microbial Diseases of Osaka University (BIKEN Foundation):** The BIKEN is a Specialty Bio-Pharmaceutical Organization engaged in the Research, Development and Supply of Vaccines. Since its establishment in 1934, BIKEN has contributed to public health by developing, manufacturing and supplying a number of first vaccines made in Japan and providing advanced laboratory test services. Based on its mission "Protect the precious lives of people around the world through excellent vaccines." the BIKEN will continue to pursue the advancement of advanced science and unique biotechnology toward a healthy society free from disease anxiety. <https://www.biken.or.jp/english>

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**About Denka Company Limited:** Denka is a chemical company that continues to contribute to the advancement of society by developing and providing unique technologies and products for more than 100 years since its establishment in 1915. In our management plan “Mission 2030” covering the 8-year period from 2023 to 2030, we identifies three domains “ICT & Energy”, “Healthcare”, “Sustainable Living” as focus areas. Denka continues to contribute to people's lives and the society through the chemistry we can be proud of to the world for the purpose of “Make the world a better place as specialists in chemistry.”

<https://www.denka.co.jp/eng/>

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