JIHS
Japan Institute for Health Security

Epitope-Optimized Flavivirus Vaccine

■ Reseacher Information

- Yoshimasa Takahashi
- Research Center for Vaccine Development
- Collaborative partners

University of Tokyo・Meiji Seika Pharma Co., Ltd.

■ Research Concept・Technology Seeds

- **【Rational Vaccine Design】** Vaccine antigens become unstable and reduce the immunogenicity when their shape or size is altered. We rationally design vaccines with enhanced capacity to elicit target antibodies by leveraging structural biology, immunology, and computational science.
- **【Evaluation of Vaccine Immunogenicity and Efficacy】** Vaccines are generated to increase the immunogenicity of on-target epitopes, and their immunogenicity and efficacy are evaluated using animal models.

■ Future Plans

- The vaccine candidates will be evaluated not only against dengue viruses, but also Zika virus.
- The platform technologies can be applied to the development of novel vaccines against a wide range of infectious diseases.

■ Background

- Globally, approximately 400 million people are infected annually, with around 100 million developing symptomatic disease. Severe cases, including dengue hemorrhagic fever and dengue shock syndrome, result in tens of thousands of deaths each year.
- Conventional dengue virus vaccines can induce protective antibodies, but they may also elicit antibodies that potentially interfere with vaccine efficacy.

■ Research Overview