

KAI LAB.

Effective Utilization of Virus

Department of Human and Social Systems



Infectious Disease Control Science

Medical Science Graduate Program/
Department of Pathology, Immunology and Microbiology/
Graduate School of Medicine and Faculty of Medicine

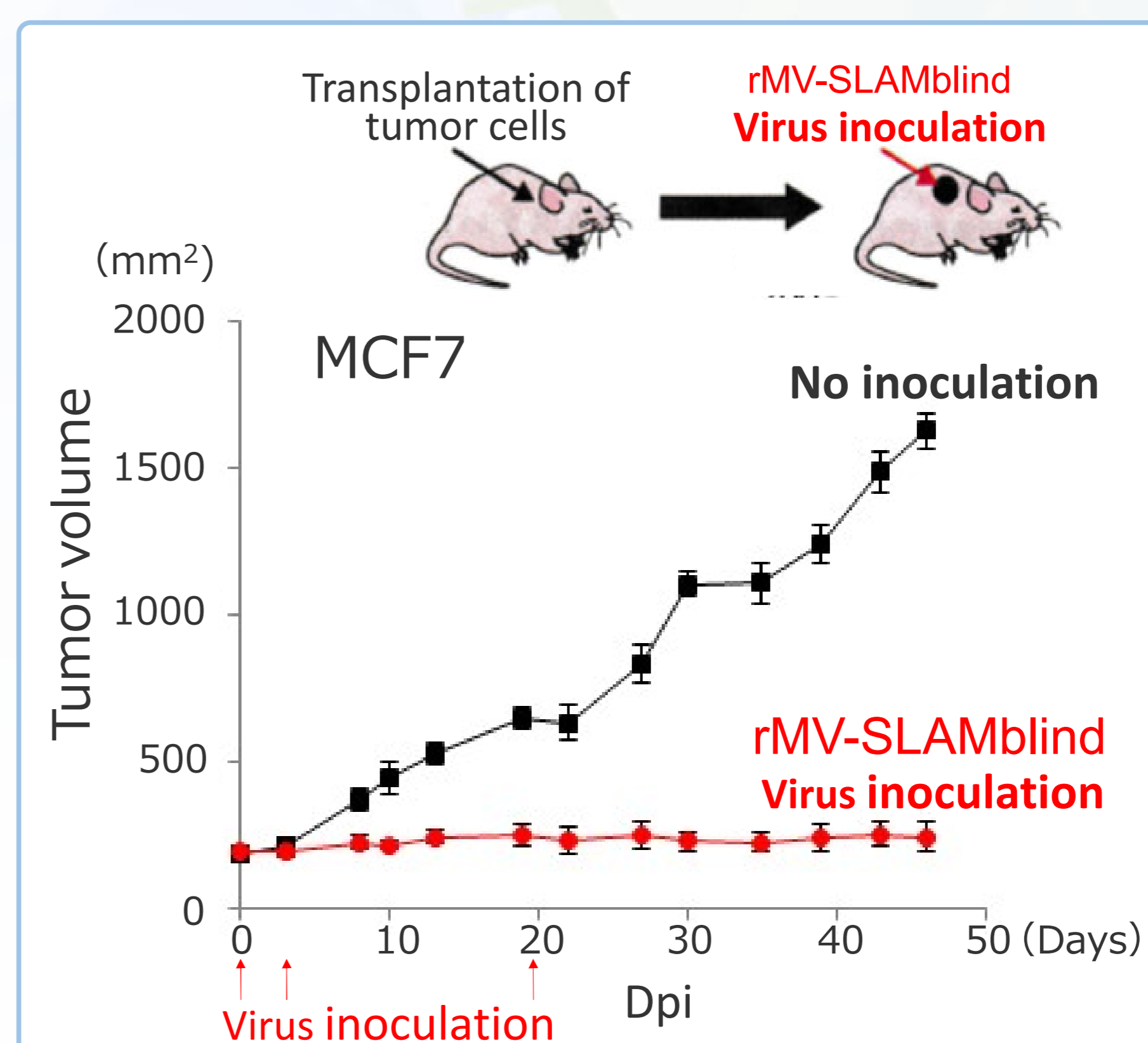
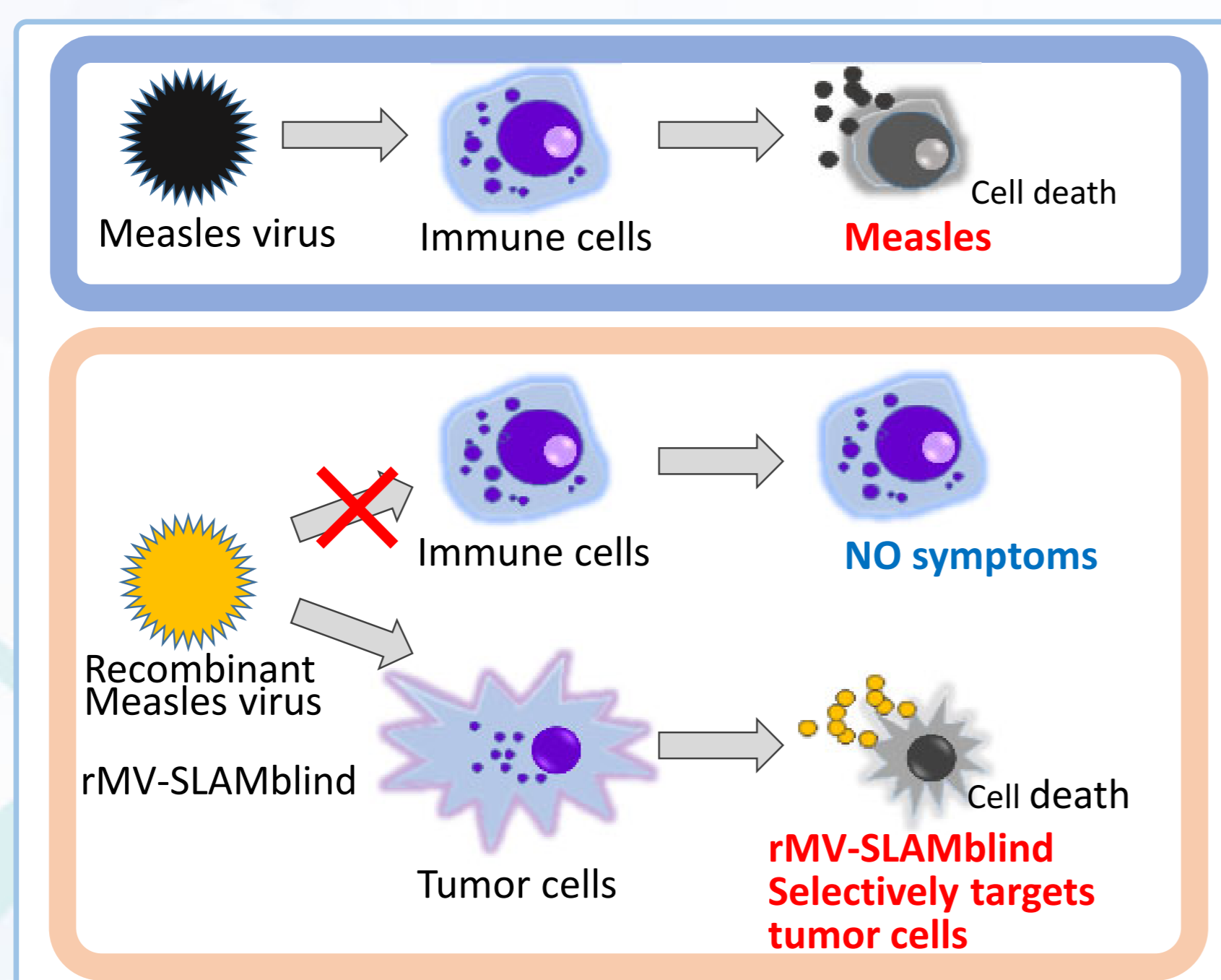
<https://www.kailab.iis.u-tokyo.ac.jp>

Aiming for effective use of morbillivirus

Morbilliviruses, including measles virus, have the property of inducing strong immunity in the infected host, resulting in lifelong immunity. Our goal is to contribute to society based on the accumulation of many years of morbillivirus research.

Development of a new cancer treatment with recombinant measles virus

We found that the HL strain of measles virus has a strong toxic effect on various tumor cells including breast cancer cells. We genetically modified the measles virus HL strain using reverse genetics to produce a recombinant virus (rMV-SLAMblind) that selectively targets only tumor cells and produces oncolytic activity without causing measles symptoms.



So far, rMV-SLAMblind shows remarkable antitumor effect in various tumor-bearing mouse models, suggesting that it is promising as a new cancer treatment method.

Our clinical development plan for the oncolytic measles virus has already begun the investigator-initiated clinical trial, meaning we are making progress toward the practical application of this new cancer treatment.

Development of bivalent vaccines against infectious diseases

The Kai LAB. succeeded in constructing the first reverse genetics system that produces infectious virus from genes and worked on the development of a bivalent vaccine against infectious diseases caused by various viruses, parasites and measles virus. Nipah virus was first identified in Asia, causing acute encephalitis with a human fatality rate of 90%. The Nipah virus vaccine using recombinant measles virus developed by the Kai LAB. was recognized to be a promising vaccine. With the large-scale support from the **Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response (SCARDA)**, our international joint research is making full-scale efforts toward the practical implementation and application of the world's first Nipah virus vaccine.

