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### An oncolytic measles virus as a novel promising tool for cancer therapy

Oncolytic viruses are promising tools for novel therapy for various tumor types. Wild type measles virus (MV) has high oncolytic activity. Since wild type MV infects immune cells using signaling lymphocyte activation molecule (SLAM) as a receptor and the infection causes its pathogenicity in host animals, we generated a recombinant MV selectively unable to use SLAM (rMV-SLAMblind). The rMV-SLAMblind lost infectivity to lymphoid cells and lost pathogenicity in monkey models, but maintained its infectivity to breast cancer cells using another receptor of MV, PVRL4 (poliovirus receptor related-4)/Nectin-4. Recent studies reported that Nectin-4 expression is up-regulated in various types of tumor cells, including breast and non-small-cell lung cancer, which is the leading cause of cancer-related death, whereas it is hardly expressed in other tissues except placenta in healthy adults. We examined the efficacy of rMV-SLAMblind on various cell lines derived from refractory cancers, in which Nectin-4/PVRL4 was expressed. The virus showed high oncolytic activity against them and also effectively suppressed tumor mass growth in xenotransplanted immunodeficient mice. In addition, systemic inoculation induced remarkable suppression of tumor growth in a xenograft model. Thus, rMV-SLAMblind is a promising candidate of a novel therapeutic agent for cancer treatment by even systemic treatment.

### Biography

Chieko Kai is a full Professor and Director of Animal Research Center, Institute of Medical Science, the University of Tokyo since 1999, and is also a Professor of International Research Center for Infectious Diseases, in the same Institute. She is a member of Science Council of Japan. Her major interests are mechanisms of pathogenicity of RNA viruses, and to control viral diseases. Her current research focus is on developing a novel cancer therapy using oncolytic viruses by genetic engineering.

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