

Development of Reoviridae virus-based mucosal vaccine vector systems

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Project Outline

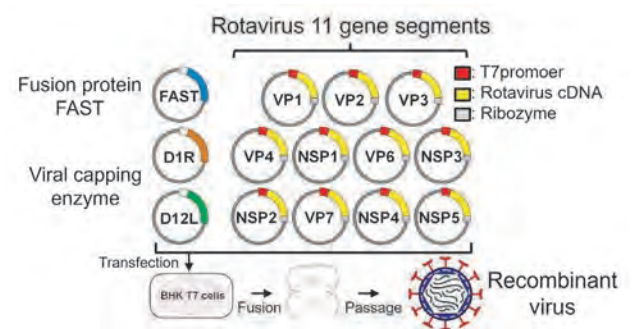
Introduction

Recombinant *Reoviridae* virus (rotavirus and reovirus) technology can apply variously for such as new oral vaccines, viruses for cancer therapy by utilizing its vector function. Our *Reoviridae* virus reverse genetics technology can apply for mucosal vaccine design and for oncolytic virus development.

Technology

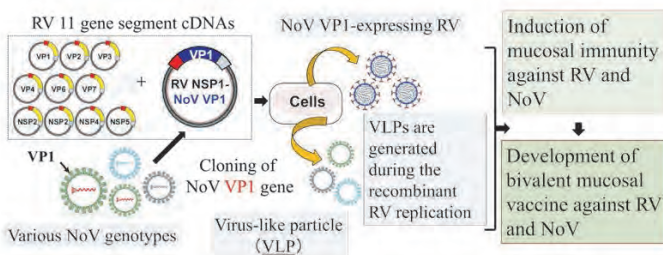
The new technology, generation of recombinant *Reoviridae* viruses entirely from cloned cDNAs, make it possible to create new recombinant viruses intentionally changed the DNA.

- It is possible to insert foreign genes and can develop various oral vaccines and a drug screening system.
- Can apply to design more appropriate and safer rotavirus vaccine rapidly.
- Can apply also to design and create more potent oncolytic reovirus.

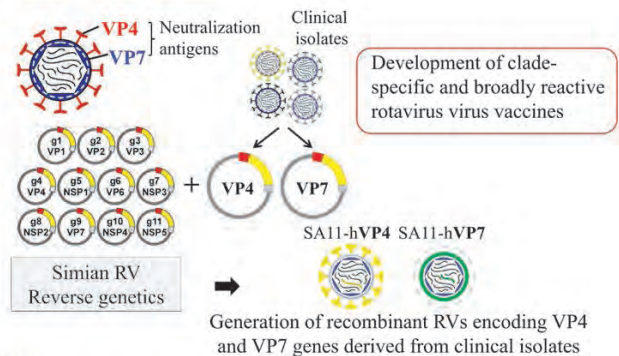


Application example

Rotavirus (RV) expressing norovirus (NoV) VP1 protein

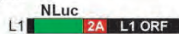


New rotavirus vaccines



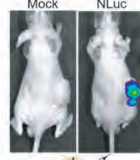
Oncolytic reovirus (MRV) vector

Insertion of NLuc gene into MRV L1 gene

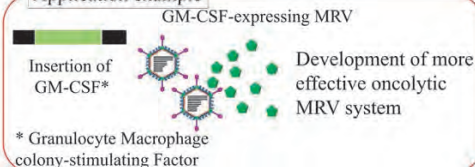


In vivo live imaging of NLuc-expressing MRV

BALB/c nude mice transplanted with human cancer A253 cells



Application example



Target disease: Infectious diseases, Cancers

Patent:

1. Patent No: JP6944213, Title: Method for producing artificially recombinant rotavirus, Registration: September 14 2021, Patentee: Osaka University
2. Patent No: JP6762070, Title: Method for producing artificially recombinant rotavirus, Registration: September 10 2020, Patentee: Osaka University