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[The Battle between Virus and Cells]

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Molecular Virology

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

Morbillivirus

Measles virus (The cause of measles virus in humans)
Canine distemper virus etc.

Causes serious and fatal symptoms when infected

Aiming to elucidate the understanding of the battle between virus vs cells

Morbillivirus proteins are multifunctional.

Why does the Mobilivirus show a completely different post-infection response depending on the host cell types?

Lymphoid cells

No response

Suppression of interferon production Cell cycle arrest



Use of cells as a **vehicle** to carry the virus itself throughout the body

Change in Gene expression

Lymphoid cells | Epithelial cells | 6 24 h

Various antiviral responses

Activation of interferon production

Epithelial cells

Battle with Virus!!

Activation of interferon production

Comprehensive



Development of recombinant bivalent vaccine

Leishmaniasis



- Caused by Leishmania protozoan
 Infected 12 million
- Infected 12 million people in 88 countries
- · Vectored by sandflies
- Dogs are also a reservoir animal.
- Epidemiological studies have shown that a decrease in local canine leishmania also reduces human leishmania.

Canine distemper virus vaccine strain

Generate Recombinant virus carrying the Leishmania antigen gene

Vaccinate dogs with Recombinant virus

Challenge Leishmania protozoans to dogs

Leishmania Protozoan Challenge Experiment



Vaccination of recombinant virus

Leishmania S

Significantly reduced ulcers

Recombinant virus is effective!

