Rabies virus glycoprotein (RVGP) expression in Drosophila S2 cells and by Semliki Forest Virus. Synthesis and protection studies.

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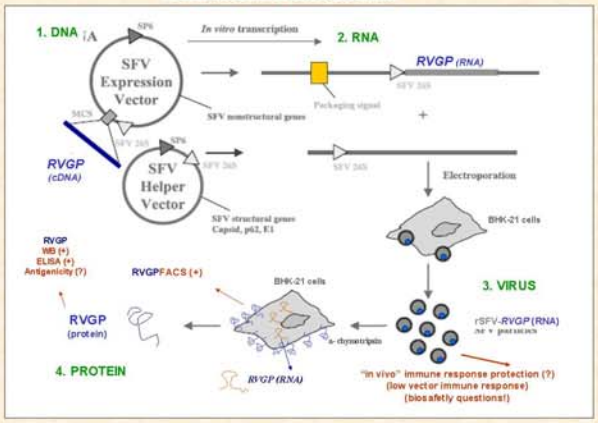
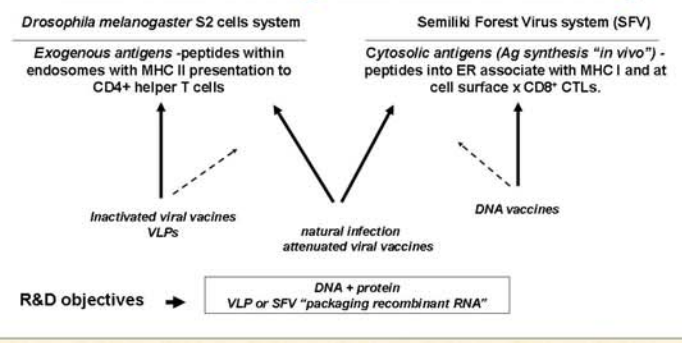
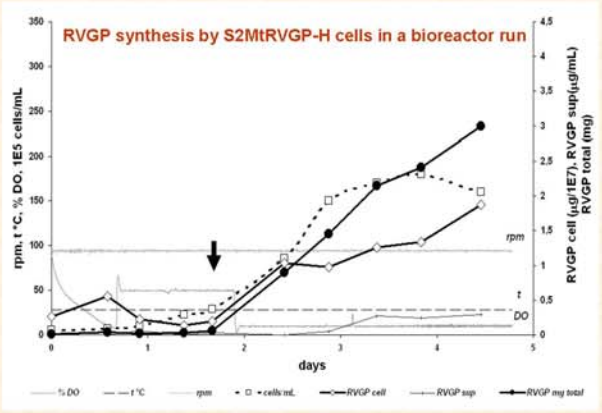
SFV-RVGP construction



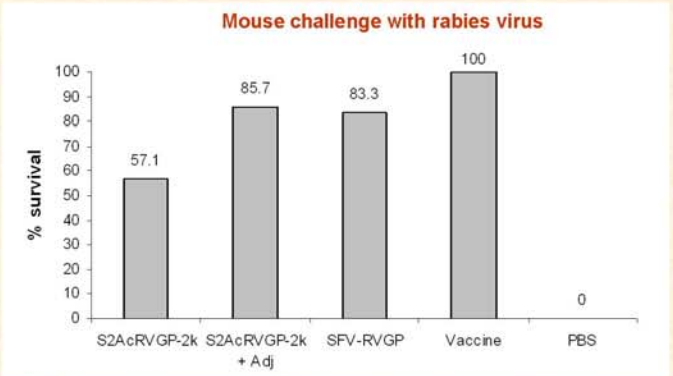
Theoretical basis of viral antigen immunization for vaccine design



RVGP synthesis by S2MtRVGP-H cells in a bioreactor run

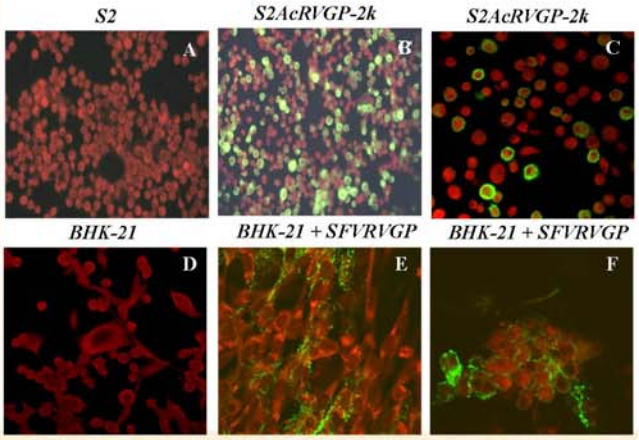


Mouse challenge with rabies virus



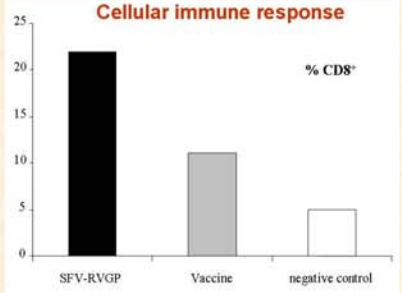
Mouse protection against the challenge with rabies virus. Immunized mice were challenged with rabies virus CVS (30 DL_{50}) for 30 days beginning at the 21st day after the first immunization. S2AcRVGP-2k present *in vitro* synthesized RVGP for immunologic system, SFV-RVGP promotes RVGP *in vivo* production in the own organism cells.

RVGP expression by S2 a BHK/SFV cells



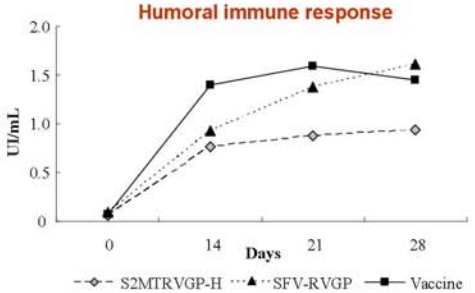
Imunofluorescence of S2MTRVGP-H and BHK-21 cells infected with SFV carrying RVGP genetic information (SFV-RVGP). Labeled with monoclonal antibodies IgG anti-RVGP conjugated with fluorescein. Evans blue contrast (red). Visualization and digital photography in fluorescence microscope (**A** – **B**) or confocal (**C** – **F**). Wild-type S2 cells (**A**), S2MTRVGP-H (**B**) and (**C**), BHK-21 (**D**), BHK-21 + SFV-RVGP (**E**) and (**F**).

Cellular immune response



Cell activation after immunization. Splenocytes from immunized or naïve mice were stimulated with RVGP for cell proliferation, recognized with anti-CD8 antibodies labeled with fluorescein and measured by flow cytometry. Figure shows a higher quantity of activated lynfocytes in SFV-RVGP immunized mice than in vaccinated mice.

Humoral immune response



Antibody production after immunization. Balb/c mice (n = 14 / group) were immunized 3 times (days 0, 7, 14) with S2MTRVGP-H (0.2 µg RVGP), with SFV-RVGP (8,3 x 10^6 SFV-RNA) and rabies vaccine. The titres of anti-rabies virus antibodies were determined at days 14, 21 and 28 after the first immunization. Titres above 0.5 UI/mL are considered sufficient seroconversion levels.

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