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Responses in rabbits to novel HIV vaccines based on immune network theory

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1F7 is a monoclonal anti-anti-HIV IgM/κ antibody raised against HIVIG. 73% of HIV infected persons and many SIV infected macaques make antibodies that bind to 1F7. 1F7 binds to all of the six well characterized monoclonal broadly neutralizing antibodies B12, 2G12, VRC01, 2F5, 4E10. We have proposed that conjugates of 1F7 and HIV antigens are candidates for use as novel prophylactic HIV vaccines. We are investigating a possible role for 1F7 as a component of a prophylactic HIV vaccine.

We immunized two rabbits with 1F7-gp120 conjugates (group 1), two with 1F7 conjugated to the gp41 peptide MPER (group 2), one with gp120 (positive control, group 3), one with a mixture of 1F7 and the BnAb B12 (group 4), two with 1F7 sham conjugation treated (group 5) and two with TEPC183-MPER complexes, where TEPC183 is a control IgM/κ antibody (group 6).

One rabbit in group 1, one in group 2, one in group 4, and one in group 6 made antibodies that bind to both gp120 and gp41. In this sense, the response in these animals was broad. Both rabbits in group 5 responded with the production of gp120-specific antibodies.

This study is a step towards validation of a network theory based HIV vaccine concept and demonstrates that rabbits may be a suitable model for studies of 1F7 based prophylactic HIV vaccines.

Biography

Sybille Muller is a senior director of Immunological Research, Vice President of Immpheron Inc, and consultant, in Network Immunology Inc. After leaving the academic position at the Roswell Park Memorial Caner Institute in Buffalo, NY, he moved his NIH program project sponsored research program to IDEC Pharmaceutical, San Diego CA, and continued to work on AIDS vaccines. Subsequently, he joined the Sidney Kimmel Cancer Center in San Diego and worked on therapeutic antibodies against HIV-1 infection. In 1993, he joined the Markey Cancer Center, University of Kentucky, in Lexington KY, continuing the HIV-1 antibody project. In 1996, he joined the start-up company, Immpheron Inc., as vice president and senior director of research. At Immpheron, he was involved in the autophilic and transmembrane antibody development project sponsored by Innexus Biotechnology, Inc. He was managing the business of Immpheron, attracting Angel Investors money, receiving a SBIR grant from NIH, and a Science and Engineering award from the Governor in KY. He took over the function of a CFO at Immpheron, Inc. Furthermore, he served on the Board of Directors of Immune Network, Ltd., Vancouver, BC to which Immpheron licensed IP on his discovery of a HIV-infection related therapeutic antibody. He served on the Board of Directors of Immpheron's IND partner, Innexus Biotechnology, Vancouver, BC. He continued to serve as vice president and senior director of Research of Immpheron until presently. Recently, he joined Network Immunolgy Inc.

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