



Testing of virus-neutralizing activities of the recombinant human antibodies against pathogenic orthopoxviruses

Tikunova N., Bulychev L., Khlusevich Ya., Bormotov N., Dubrovskaya V., Morozova M., Belanov E.

Federal State Research Center of Virology and Biotechnology "Vector" Rospotrebnadzor, Koltsovo, Novosibirsk reg. 630559, Russia

A panel of scFv human antibodies to orthopoxviruses was isolated from a phage display library of human scFv antibodies constructed from Vh and Vl genes cloned from the peripheral blood lymphocytes of vaccinia virus (VACV) immune donors. Plaque-reduction neutralization tests demonstrated that nine from the antibodies selected against cowpox virus (CPXV) were able to neutralize infectivity of the virus, and four antibodies selected against VACV were proven to neutralize VACV. Six scFv human antibodies were shown to be able to neutralize infectivity of variola virus, Ind-3a and monkeypox virus. Neutralizing antibodies recognize H3L orthopoxvirus protein.