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Titel des Beitrags:
Neutralization assay using a modified vaccinia virus Ankara vector expressing the green fluorescent protein is a high-throughput method to monitor the humoral immune response against vaccinia virus.

Abstract:
Vaccination against smallpox is again considered in order to face a possible bioterrorist threat, but the nature and the level of the immune response needed to protect a person from smallpox after vaccination are not totally understood. Therefore, simple, rapid, and accurate assays to evaluate the immune response to vaccinia virus need to be developed. Neutralization assays are usually considered good predictors of vaccine efficacy and more informative with regard to protection than binding assays. Currently, the presence of neutralizing antibodies to vaccinia virus is measured using a plaque reduction neutralization test, but this method is time-consuming and labor-intensive and has a subjective readout. Here, we describe an innovative neutralization assay based on a modified vaccinia virus Ankara (MVA) vector expressing the green fluorescent protein (MVA-gfp). This MVA-gfp neutralization assay is rapid and sensitive and has a high-throughput potential. Thus, it is suitable to monitor the immune response and eventually the efficacy of a large campaign of vaccination against smallpox and to study the vector-specific immune response in clinical trials that use genetically engineered vaccinia viruses. Most importantly, application of the highly attenuated MVA eliminates the safety
concern in using the replication-competent vaccinia virus in the standard clinical laboratory.