CHARACTERISTICS OF rVSV-ZEBOV PRODUCTION KINETICS IN HEK293 AND VERO CELLS

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The vesicular stomatitis virus (VSV) can be used as an effective vaccine platform, inducing both cellular and humoral immunity. Because VSV infections of humans are mostly asymptomatic, recombinant VSV (rVSV) can be used as a platform to safely deliver and express foreign antigens. This research study focuses on cell culture production of an rVSV expressing the Ebola virus glycoprotein on its surface (rVSV-ZEBOV). This virus has been demonstrated to be safe to administer to humans. In addition, recent results of a human phase III clinical trial showed that this vaccine can efficiently protect against Ebola virus infection. However, limited data is available in the literature about the growth characteristics of this virus during the production process. In our study, we investigated the influence of multiplicity of infection (MOI), time of infection (TOI), time of harvest (TOH), media components and temperature on the viral titer (TCID50/mL, ddPCR) of rVSV-ZEBOV produced from cell culture. Results are compared between the standard production in the Vero cell line and in a suspension-adapted HEK293-based cell line without serum.