

INVESTIGATION OF REPRODUCTIVE AND ANTIGENIC PROPERTIES OF BOVINE ROTAVIRUS ISOLATED IN LITHUANIA

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Summary. Four rotavirus (RV) strains were isolated from diarrhoeic calves in primary bovine fetal kidney cells (strains 12 M and 19) or continuous fetal porcine kidney SPEV cells (isolates 357 and 359). All the isolates were adapted and propagated on SPEV cell line. The investigation revealed that RV isolate 12 M reached the titre $7,3 \log_{10}$ TCID₅₀/ml and $2,7 \log_{10}$ in ELISA. The titres of isolates 19; 357 and 359 were 6,3; 6,5 and $5,8 \log_{10}$ TCID₅₀/ml in cell culture and 2,1; 2,2 and 2,0 in ELISA respectively. For further investigations the 12 M strain was selected. The virus suspension was treated with formaldehyde and bisethylene imine and it was established that 24 hour exposition at 4°C with 0,1% of formaldehyde inactivated more than 99,99% of RV particles. However, bisethylene imine was not an effective inactivator under these conditions and decreased RV infectivity only by $2,0 \log_{10}$ TCID₅₀/ml, e.g. in 99,00%.

Adjuvant Aerosil (Kaluzhski khimkombinat, Ukraine) was selected for development of inactivated RV vaccine. Aerosil consists of amorphous powder of SiO₂ with the surface area of 300 m² per 1 g. It was established that 2% of Aerosil adsorbs 94,5% of inactivated RV particles. The vaccine containing Aerosil was most effective on white mice.

Keywords: rotavirus, bovine, cell culture, propagation, inactivation, vaccine.