

PROGRESS IN DEVELOPMENT OF AFRICAN HORSE SICKNESS VACCINE

The Equine Research Centre (headed by Prof Alan Guthrie), in collaboration with various international experts successfully developed a preliminary recombinant canarypox virus vectored (ALVAC) vaccine for protective immunisation of equines against African horse sickness virus (AHSV) infection. The vaccine was tested on eight horses, which were immunised with either of two concentrations of ALVAC®-AHSV incorporating the proteins of the AHSV-4 type. These horses showed complete resistance to infection with a virulent strain of AHSV-4. In contrast, a horse immunized with a commercial canarypox virus vectored vaccine depicted typical “dikkop” or cardiac form of African horse sickness following infection with virulent AHSV-4 type virus.

This study confirmed that the ALVAC®-AHSV will be useful for the protective immunization of equines against African horse sickness, and it also avoids many of the problems inherent to live-attenuated AHSV vaccines.

Results from this study caused scientists to hypothesise that there could be a participation of cell mediated immunity (CMI) in protection against AHSV4. A further study was then conducted aimed at characterising the CMI induced by the experimental ALVAC®-AHSV4 vaccine. It was found that ALVAC®-AHSV4 vaccinations induced significant CMI specifically against VP2 and VP5 proteins in AHSV4.

This vaccine is still in experimental stage, with ongoing studies underway. While AHSV4 has been tackled, researchers are now evaluating two further serotypes. The materials to be used in the next trial are currently undergoing safety testing, with samples due imminently.

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