

Novel vaccines induce neutralising antibodies against Epstein-Barr virus in mice



Following the development of two new vaccines for the treatment of Epstein-Barr virus, a recent study by Wei, et al., have evaluated the effectiveness of these vaccines in mouse models

Epstein-Barr is a virus causing [mononucleosis](#) through infection, and may lead to other diseases such as cancer ([READ MORE](#)). A recent paper has found the virus to be linked with Multiple Sclerosis ([READ MORE](#)). Due to the high positivity rate in adults, up to 95% of adults have been infected, researchers have prioritised the development of vaccines to combat the virus.

In this present study, the researchers developed two nanoparticle-based vaccines, . gH/gL+gp350D₁₂₃ and gH/gL/gp42+gp350D₁₂₃, that target the glycoproteins which facilitate viral entry. The virus targets B cells and endothelial cells.

The researchers were able to prove the effectiveness of the vaccines in successfully generating a sufficient immune response in mice and ferrets. They performed subsequent testing on genetically engineered mice who had immune systems

closely representing that of humans. In their own words; “To confirm its efficacy *in vivo*, humanized mice were challenged with EBV after passive transfer of IgG from mice vaccinated with control, gH/gL/gp42+gp350D₁₂₃, or gH/gL+gp350D₁₂₃ nanoparticles. Although all control animals were infected, only one mouse in each vaccine group that received immune IgG had detectable transient viremia. Furthermore, no EBV lymphomas were detected in immune animals. This bivalent EBV nanoparticle vaccine represents a promising candidate to prevent EBV infection and EBV-related malignancies in humans.”

With such promising results, the researchers are looking to test the vaccines in clinical trials next year.

Journal article: Wei, C., et al., 2022. [A bivalent Epstein-Barr virus vaccine induces neutralizing antibodies that block infection and confer immunity in humanized mice](#). *Science Translational Medicine*.

Summary by Stefan Botha