

Australian virus might be answer to effective Ebola vaccine

March 3 2015, by Aarti Kapoor



Ebola virus

An experimental Ebola vaccine made using an Australian virus called Kunjin might help in the fight against the deadly Ebola virus, an international study led by The University of Queensland has found.

The study, which involved research with monkeys, is one of the latest efforts in the worldwide race to find an effective Ebola vaccine.

Lead researcher Professor Alexander Khromykh, from UQ's School of Chemistry and Molecular Biosciences, said the researchers from Australia, France and Russia found the engineered vaccine gave significant protection from Ebola infection.

"We immunised four African green monkeys with a vaccine made from the Kunjin [virus](#) engineered to produce an Ebola virus protein," Professor Khromykh said.

"We vaccinated them twice in an interval of four weeks, before challenging them with a dose of the Ebola virus three weeks later."

"Three out of the four, or 75 per cent of the animals that were immunised, were completely protected against the Ebola virus challenge."

Professor Khromykh said further tests in a larger number of monkeys would be conducted before proceeding to phase 1 clinical trials in human volunteers.

Researcher Professor Andreas Suhrbier, from QIMR Berghofer Medical Research Institute, said there were only a few Ebola vaccine candidates that had worked in non-human primates.

"Our results are therefore an impressive achievement in the global battle against this deadly virus," he said.

The Ebola virus, responsible for a severe form of viral haemorrhagic fever in humans, with fatality rates up to 90 per cent, was first documented in 1976 in Africa, in Zaire (now Democratic Republic of

Congo) and Sudan.

Outbreaks have since been reported in Central Africa, with the largest ever outbreak recorded starting in 2014 in West Africa and reaching about 23,900 cases and 9700 deaths (as of 2 March 2015).

"The large scale of this ongoing outbreak in West Africa has triggered the urgent need for an effective vaccine," Professor Khromykh said.

"This is particularly so for Ebola crisis responders such as health care workers, as well as other groups such as those sharing accommodation with known or suspected infected individuals."

The Kunjin virus-derived vaccine vector was first constructed by Professor Khromykh in 1997 and since then has been used to develop several vaccine candidates, including the current Ebola [vaccine](#) candidate.

The research, published in the *Journal of Infectious Diseases*, also involved UQ's Dr Yin Xiang Setoh, and researchers from the State Centre for Virology and Biotechnology "Vector" (Russian Federation), as well as INSERM and Claude Bernard University (both in Lyon, France).

More information: "A Kunjin Replicon Virus-like Particle Vaccine Provides Protection Against Ebola Virus Infection in Nonhuman Primates." *J Infect Dis.* first published online March 2, 2015 [DOI: 10.1093/infdis/jiv019](https://doi.org/10.1093/infdis/jiv019)

Provided by University of Queensland

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