

Ebola drugs: A factfile

October 2 2014

There is no licensed treatment or vaccine for Ebola, which has killed more than 3,300 people in West Africa since the start of 2014.

This is the status of the quest for drugs to tackle the emergency.

- VACCINES -

Two prototype vaccines have been earmarked for Phase I trials, the first step in the three-pronged process to vet a new drug for safety and effectiveness.

More than 10 sites for the trials have been selected in Africa, Europe and North America.

- cAd3-ZEBOV: Developed by British company GlaxoSmithKline (GSK) with the US National Institute for Allergy and Infectious Diseases (NIAID). Based on a chimpanzee adenovirus to which an Ebola virus gene has been added in a bid to stimulate an immune response. Trials started in September, among 20 healthy adults in the United States and 60 in Britain. Two groups of 40 people will be enrolled for Phase I trials in Gambia and Mali.

- rVSV-ZEBOV: Developed by the Public Health Agency of Canada; the license for commercialisation is held by a US company, NewLink Genetics of Ames, Iowa. Uses a weakened virus for [vesicular stomatitis](#), a livestock disease, of which one of the genes has been replaced an Ebola virus gene. Trials to start in the United States early October.

Phase II tests could start in January-February 2015.

If early tests show the vaccines are safe, some doses could be available for a small number of frontline healthcare workers by November, with wider use from early next year, according to the UN's World Health Organization (WHO).

Another experimental vaccine is made by Crucell, a subsidiary of US company Johnson & Johnson, but evaluations are several months behind the others, according to the WHO.

- TREATMENTS -

- Of several prototypes in the pipeline, one dubbed ZMapp has been fast-tracked for use. A cocktail of three antibodies that cling to the virus and inhibit its reproduction, ZMapp is developed by Mapp Biopharmaceutical in California, in conjunction with the US Army.

Since the WHO gave the green light on August 12 for experimental treatment to be used in the Ebola crisis, ZMapp has been given to a small number of infected frontline workers. Among those who survived, it was unclear whether ZMapp was the cause.

Stocks of ZMapp, which is derived from tobacco leaves and is difficult to produce on a large scale, are exhausted, its manufacturer said in August.

- TKM-Ebola: A drug that kills virus-infected cells, is being developed by Vancouver-based Tekmira Pharmaceuticals under a \$140-million (105-million-euro) contract with the Pentagon.

In tests on a small group of monkeys, it provided 100 percent protection against an otherwise lethal dose of Ebola virus. It is being tested in a

Phase I trial on humans.

— Anti-viral drugs: Several proposed Ebola treatments started out as influenza drugs, designed to inhibit virus replication.

Avigan, a tablet developed by Toyama Chemical, a subsidiary of Fujifilm Holdings was approved in Japan in March and is undergoing clinical trials in the United States.

French doctors are to start tests on Ebola patients in Guinea in November, with preliminary results expected by year's end.

North Carolina-based BioCryst Pharmaceuticals has received \$2.4 million (1.8 million euros) from NIAID to test the efficacy in primates of its BCX4430 antiviral as a treatment for Ebola.

— Plasmapheresis: This is a time-honoured technique whereby blood serum is taken from survivors and their antibodies given to patients. It has been used as an ad-hoc treatment in Ebola-hit countries but its effectiveness has never been put through the rigour of a clinical trial.

SOURCES:

World Health Organization (WHO) Experimental Ebola Vaccine Situation Assessment, October 1;

[www.gsk.com/en-gb/our-stories/ ... ainst-ebola/](http://www.gsk.com/en-gb/our-stories/...ainst-ebola/)

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