Researchers in Paris have successfully completed testing of a novel preventive hepatitis C virus (HCV) vaccine in animal studies, according to a paper published in Science Translational Medicine and reported by Reuters.

Charlotte Dalba, CEO of Epixis, the French biotech firm developing the vaccine, said that if the company—which is being purchased by an undisclosed U.S.-based pharmaceutical firm—can secure funding, human trials should begin in 2012.

The vaccine uses noninfectious virus-like particles, which resemble HCV but use none of its genetic material, to stimulate a broad neutralizing antibody response. In tests involving monkeys and mice, antibodies generated by the vaccine staved off several distinct strains of HCV, suggesting that the vaccine will remain viable even when the virus mutates.

Preventive vaccines stimulate the production of neutralizing antibodies to target a specific pathogen and thus keep a person from becoming infected, whereas therapeutic vaccines stimulate CD4 cells to improve the body’s immune response after an infection has occurred. There are currently no approved vaccines of either type for hepatitis C, though two European pharmaceutical companies—France’s Transgene and Austria’s Intercell—are testing therapeutic HCV vaccines.

“For a preventive vaccine, neutralizing antibodies are absolutely essential, and for a therapeutic product they would also be a big advantage,” said researcher David Klatzmann, MD, PhD, professor of immunology at the Pierre and Marie Curie University’s Faculty of Medicine in Paris and a lead author of the study.

Between 75 percent and 85 percent of people living with HCV are unable to rid their bodies of the virus, resulting in chronic illness that can lead to liver damage or cancer. According to the World Health Organization, 130 million to 170 million people are infected worldwide, with 350,000 dying each year from liver related disease.