Successful antibody trial in HIV-infected individuals

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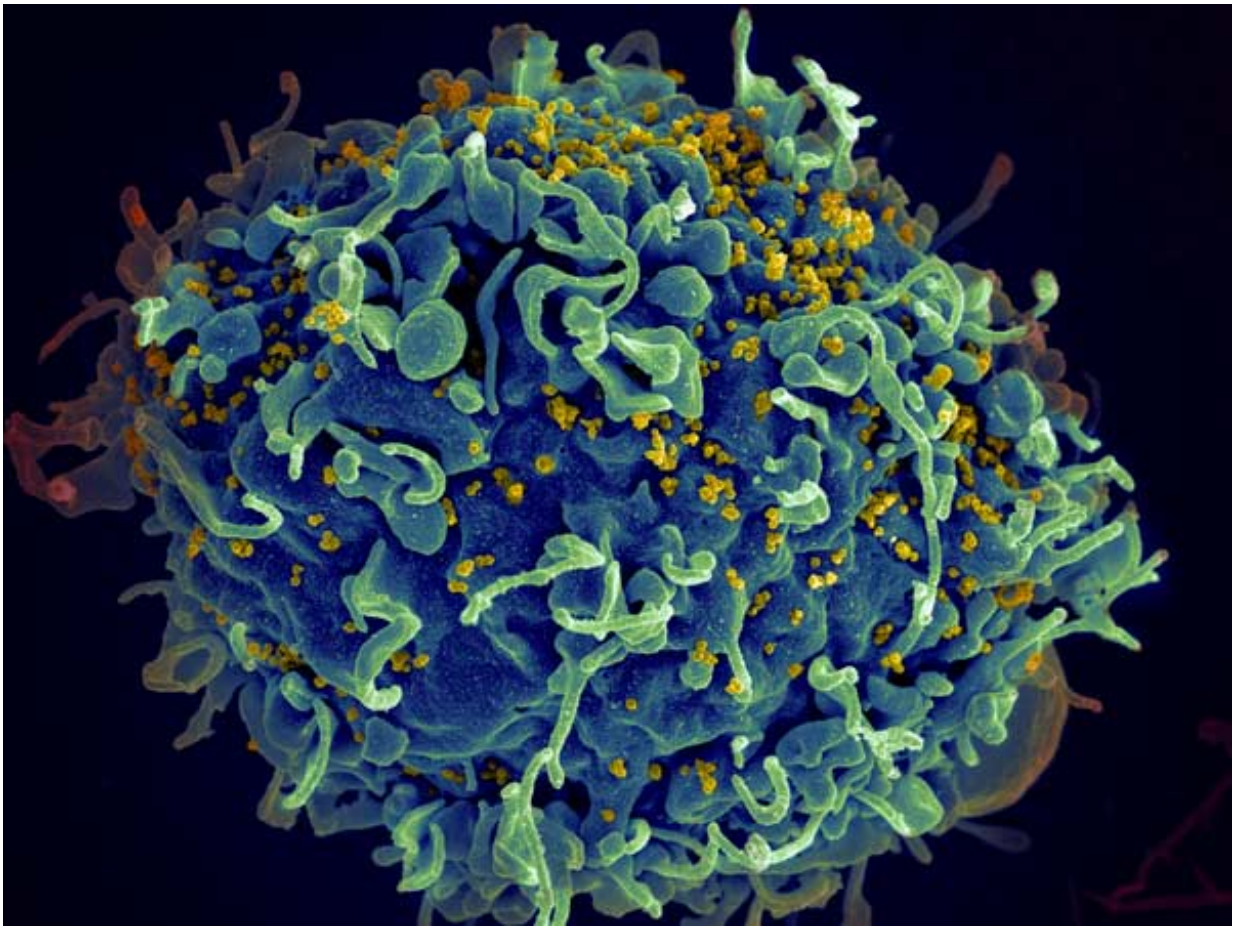

HIV infecting a human cell. Credit: NIH

A research team led by investigators of the Rockefeller University in

New York and Prof Florian Klein, University Hospital Cologne and German Center for Infection Research (DZIF), has tested a new HIV neutralising antibody, called 10-1074, in humans. The results of the trial have just been published in *Nature Medicine*.

Over the last years, a new generation of HIV neutralizing antibodies was identified. "These antibodies are highly potent and are able to effectively neutralize a large number of different HIV strains. Therefore, they play an important role in the quest for and development of an HIV vaccine," explains Prof Klein. Additionally, in close collaboration with the Division of Infectious Diseases at the University Hospital Cologne (Prof Gerd Fätkenheuer) and scientists of the Rockefeller University in New York, Prof Klein's research group is investigating whether broadly neutralising antibodies can be used to treat HIV infection.

The just published trial investigates this approach. The broadly neutralizing antibody 10-1074 targets a specific structure (V3 loop) on the HIV envelope protein. In the study, the investigators show that the antibody was well tolerated and demonstrated favourable pharmacokinetic properties. Additionally, the antibody showed high antiviral activity in the participants with HIV infection. Furthermore, the team was able to specifically investigate the development of resistant HIV variants. "We performed a comprehensive HIV sequence analysis to investigate the dynamics and mechanisms HIV uses to escape the selection pressure by the antibody," says Dr Henning Gruell, one of the first authors of the current publication.

"This trial was only possible because of the intensive collaboration with the Rockefeller University and many other clinical and scientific partners," says Prof Klein, principal investigator in Germany and co-last author of the study. The scientists are planning further trials to investigate an antibody-mediated treatment approach in patients with HIV infection. Further trials have already been scheduled for spring.

Medical Xpress

More information: Marina Caskey et al, Antibody 10-1074 suppresses viremia in HIV-1-infected individuals, *Nature Medicine* (2017). DOI: 10.1038/nm.4268

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