

# First Ebola-like virus native to Europe discovered

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A team of international researchers has discovered a new Ebola-like virus – Lloviu virus -- in bats from northern Spain. Lloviu virus is the first known filovirus native to Europe, they report in a study published in the journal *PLOS Pathogens* on October 20th.

The study was a collaboration among scientists at the Center for Infection and Immunity (CII) at Columbia University's Mailman School of Public Health, the Instituto de Salud Carlos III (ISCIII) in Spain, Roche Life Sciences, Centro de Investigación Príncipe Felipe, Grupo Asturiano para el Estudio y Conservación de los Murciélagos, Consejo Superior de Investigaciones Científicas and the Complutense University in Spain.

Filoviruses, which include well-known viruses like [Ebola](#) and Marburg, are among the deadliest pathogens in humans and non-human primates, and are generally found in East Africa and the Philippines. The findings thus expand the natural geographical distribution of filoviruses.

"The study is an opportunity to advance the knowledge of filoviruses' natural cycle," said Ana Negrodo, one of the first authors of the study.

Scientists at ISCIII analyzed lung, liver, spleen, throat, brain and rectal samples from 34 bats found in caves in Asturias and Cantabria, Spain, following bat die-offs in France, Spain and Portugal in 2002 affecting mainly one bat species.

They screened these samples for a wide range of viruses using the polymerase chain reaction, a molecular technique that allows scientists to amplify genetic material, and detected a filovirus. Filoviruses include ebolaviruses and marburgviruses, two viruses associated with severe disease in humans and other primates..

CII scientists used high-throughput sequencing to characterize the virus' genome. When they compared it to other well-known filovirus genomes, they found that Lloviu virus represents a class of viruses distantly related to all ebolaviruses and that it may have diverged from ebolaviruses about 68,000 years ago.

"The detection of this novel filovirus in Spain is intriguing because it is completely outside of its previously described range. We need to ascertain whether other filoviruses native to Europe exist, and more importantly, if and how it causes disease," said Gustavo Palacios, the other first author of the study.

Filoviruses typically do not make bats sick, but because the team of researchers only detected Lloviu virus in bats that had died and whose tissues showed signs of an immune response, they think Lloviu may be a cause for concern. They also did not detect Lloviu virus in samples of almost 1,300 healthy bats.

Bats have important roles in plant pollination, spreading plant seeds and controlling insect populations, and pathogens that attack bat populations could have dramatic ecological and health-related consequences.

"The Lloviu [virus](#) discovery highlights how much we still need to learn about the world of emerging infectious diseases and the importance of global collaboration and the One Health initiative in addressing the challenge," said CII Director Dr. Ian Lipkin.

Provided by Columbia University

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