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Patawa virus, a new arenavirus hosted by forest rodents in french guiana

Vincent and Lacoste
France

For decades, emerging viral diseases have become a major public health problem. Three-quarters of them are zoonotic and rodents are reservoirs for the most part. In the Amazonian region, these emergence phenomena are closely related to environmental disturbances inducing changes in richness, diversity, relative specific abundance and movements of animal communities. In French Guiana, 28 species of rodents are present, living in different habitats (various kinds of forests, savanna, agricultural areas, peri-urban and urban zones). This French overseas department faces increasing environmental pressures, mainly on the coast where most of the population lives. This situation favors contacts between wild fauna and humans, with an associated increased risk of pathogen transmission. Strikingly, emerging viral diseases have recently appeared in the department: rabies in 2008, the first reported case of Hantavirus pulmonary syndrome in 2009 followed by three fatal cases in 2009, 2010 and 2013, but no human case of arenavirus infection has been registered. Arenaviridae constitutes a diverse family of enveloped single-stranded RNA viruses distributed worldwide. Some described in South America can induce, in severe cases, hemorrhagic fevers, but most are asymptomatic or cause relatively mild illnesses. They are mainly hosted by rodent species living in open areas and only a few have been reported in the Amazonian forest region. Molecular investigations on 409 rodents allowed us detecting a new arenavirus, tentatively named "Patawa virus", in two *Oecomys* species (Muridae, Sigmodontinae), characterizing its genome and studying its evolutionary relationships with other New World arenaviruses. Further serological investigations, in rodent and human populations, are needed to determine if this virus can infect humans.

Biography

Vincent Lacoste has obtained his PhD in virology in 2002. During his thesis at the Institut Pasteur, he has conducted molecular epidemiology, pathogenesis and evolution studies of Kaposi's Sarcoma-associated HerpesVirus (KSHV). As post-doc at the George Washington University in Washington DC (2002-2004), he contributed to the development of a multivirus array, using it in combination with chromatin immunoprecipitation to investigate the relationship between chromatin structure and viral gene expression of KSHV. He joined the Institut Pasteur de la Guyane in 2004 to head the Laboratoire des Interactions Virus-Hôtes (LIVH). Since then, his main research activities focus on phylogenetics of viruses and their hosts (herpesviruses, arboviruses) and on viral emerging diseases and the role of the wild mammalian fauna in different virus cycles (hantavirus, arenavirus and rabies). Moreover, by performing HIV genotypic resistance tests to antiretroviral drugs, his lab contributes in managing HIV infected people regionally. Since 2006, in parallel to his research activities, he acts as a member of the Herpesvirus Study Group of the International Committee on Taxonomy of Viruses.

vlacoste@pasteur-cayenne.fr