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The first identification of tula hantavirus in Iran

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Abstract

The control and prevention of rodent-borne diseases is mainly based on our knowledge of the infectious status of their reservoir hosts and on their identification. Small mammals including rodents, shrews, moles and bats are reservoirs of hantaviruses. Although the majority of hanta viral infections are reported from east Asian countries such as Korea and China, the infection has also been reported in the Middle-East countries including Iran. As the first attempt looking for evidence of hantavirus reservoir in Iran, this study aimed to investigate hantaviral infection in rodents from East-Azerbaijan Province, Northwest of Iran in 2017 and 2018 in collaboration with Pasteur Institute of Iran. Spleen and lung samples were obtained from 200 trapped small mammals and were used for rodent identification and molecular detection of hantaviruses. The results of Pan-hantavirus nested RT-PCR and sequence analysis showed the presence of Tula hantavirus RNA in one lung specimen of glirid rodent belonging to the genus *dryomys nitedula*. Phylogenetic analysis showed the similarity of the Tula virus identified in this study with Tula hantavirus strains from Turkey. This study for the first time showed Tula virus infection in Iran and in *dryomys nitedula* as the first formal record from a non-murid rodents. The current study not only is the first genetic identification of any hantavirus circulating in Iran, it is also the first report of a hantaviral infection (Tula virus) in a rodent in this country.

Biography:

Aude Lalis has performed a PhD in population genetics and viral infection, focusing on rodent in West Africa, where she works since 2008. She has completed her Postdoctoral studies by joining a research program on "Modern human installation in Morocco influence on the small terrestrial vertebrate biodiversity and evolution". Currently, she is an Assistant Professor at the Museum of Natural History-CNRS in Paris, where she continues to study genetics in several species of mammals, such as rat in Paris, bats in Africa, rodents in Iran, fox in Canada and their possible role in many human health problems.

Speaker Publications:

1. "The impact of human conflict on the genetics of *mastomys natalensis* and lassa virus in West Africa"; 2012.
2. "Phylogeography and demographic history of shaw's jird (meriones shawii complex) in North Africa"; 2020.
3. "New molecular data favour an anthropogenic introduction of the wood mouse (*Apodemus sylvaticus*) in North Africa"; 2015.
4. "Morphological identification of sibling species: the case of West African Mastomys (Rodentia: Muridae) in sympatry"; C R Biol/ Vol 332, 2009, 480-488.
5. "Genetic variation in a North African rodent pest, *Meriones shawi*: microsatellite polymorphism"; African Zoology/ Vol 32, 2013, 157-160.

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