

Antibodies against Nipah virus in bat species in Maharashtra

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In news

The Nipah virus has been found in two species of bats in Maharashtra for the first time by scientists from the Pune-based National Institute of Virology (NIV).

Key updates

- The new study '**Detection of possible Nipah virus infection in Rousettus leschenaultii and Pipistrellus bats in Maharashtra**, India', published in the Journal of Infection and Public Health has found the virus and antibodies in different species.
- The NIV article states that India has witnessed four Nipah outbreaks so far.

FIRST NIPAH DETECTION IN MAHARASHTRA

THE VIRUS Nipah Virus (NIV) is on the top 10 pathogen list of WHO

- First identified in Malaysia in 1998-99 during an encephalitis-like outbreak among pigs and pig handlers, with a case fatality rate (CFR) of 40%

NIPAH IN INDIA India has experienced four NIV outbreaks, with CFR ranging from 65 to 100%

- 2001 in Siliguri district, West Bengal
- 2007 in Nadia district in West Bengal
- 2014 in Kozhikode district in Kerala with 18 deaths
- 2019 in Kozhikode

MAHABALESHWAR FINDINGS

- Large fruit-eating Pteropus medius bats said to be NIV reservoir in India
- 65 Rousettus leschenaultii (medium fruit-eating) bats and 15 (tiny, insectivorous) Pipistrellus pipistrellus
- Infected bats shed the virus in excretion & it can jump to humans
- NIV can be fatal, causing swelling of brain (encephalitis) after signs of respiratory illness
- Antibodies found in 33 leschenaultii and one Pipistrellus bat
- First report of possible NIV infection in R leschenaultii bats in India

from a Mahabaleshwar cave tested in 2020

Researchers test bats in Kozhikode in 2018

- The NIV team looked at Pteropus medius, Rousettus leschenaultii and Pipistrellus pipistrellus bats that are common in India.
- It trapped 65 leschenaultii and 15 pipistrellus bats and collected blood, throat and rectal swabs in the Mahabaleshwar cave from the anaesthetised bats.
- One bat each from R leschenaultii and P pipistrellus

species tested positive for both NiV RNA and anti NiV IgG antibodies

- This is the first report of possible NiV infection in *R. leschenaultii* bats in India, which was demonstrated by the presence of both NiV RNA and anti-NiV IgG antibodies in bats.
- *Leschenaultii* bats were found to harbour Nipah for the first time in India.
- *Pteropus medius* bats, which are large fruit-eating bats, are the incriminated reservoir for NiV in India as both NiV RNA and antibodies were detected in the samples of these bats collected during previous NiV outbreaks.

About Nipah Virus

- The virus, usually found in bats, features in the top 10 priority list of pathogens identified by the World Health Organisation, and its transmission to humans has resulted in deadly outbreaks across the world.
- Nipah is considered dangerous as there is no medicine or vaccine, and the death rate is high.
- It has a death rate of 65% to 100%.
- The Nipah virus is a type of RNA virus in the genus *Henipavirus*.
- The infection is generally believed to be emerging from fruit bats from the *Pteropodidae* family.
- Nipah's symptoms are similar to influenza, including fever, muscle pain and breathing problems.

Rousettus leschenaultii

- *Leschenault's rousette* is a species of fruit bat.
- The scientific name of the species was first published by Desmarest in 1820.
- *Leschenault's rousette* is brown to grey-brown in colour with lighter underparts.
- This bat species is found in a variety of habitats ranging from tropical forests to urban environments.

- It roosts in caves, old abandoned buildings and tunnels, and other such structures.

Pipistrellus bats

- The common pipistrelle is a small pipistrelle microbat whose very large range extends across most of Europe, North Africa, South Asia, and may extend into Korea.
- The common pipistrelle is a very small species of bat.
- It has a short muzzle.
- The common pipistrelle is an edge specialist, preferring to forage along woodland edges and along isolated tree lines.
- It is insectivorous, preying on flies, caddisflies, lacewings, and mayflies.
- Mosquitoes, midges, and gnats are particularly favored prey items.

Extra reading: <https://journalsofindia.com/nipah-virus/>