

# Bats carrying viruses similar to Sars-CoV-2 found outside China

This implies virus could have come to Wuhan from elsewhere, says co-author of new study

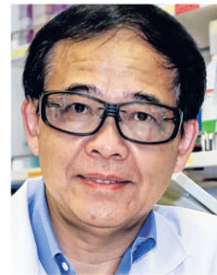
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Horseshoe bats carrying coronaviruses very similar to the one that causes Covid-19 have been found outside China, new research has found.

This implies that the virus could have arrived at the Chinese city of

Wuhan from elsewhere, said one of the study's co-authors, Professor Wang Linfa from Duke-NUS Medical School in Singapore.

The study, which was published yesterday in the *Nature Communications* journal, had found a coronavirus in the horseshoe bat *Rhinolophus acuminatus* in Thailand that was 91.5 per cent similar to Sars-CoV-2, the virus that causes Covid-19.



Duke-NUS Medical School Professor Wang Linfa is one of the co-authors of the study published yesterday.

So far, the closest relative to Sars-CoV-2 has been detected in the horseshoe bat *Rhinolophus affinis* in China's Yunnan province – with a genetic similarity of 96.2 per cent.

In another study published as a

pre-print pending peer review last month, researchers had also found – in the horseshoe bat *Rhinolophus shameli* in Cambodia – coronaviruses 92.6 per cent similar to Sars-CoV-2.

All three are horseshoe bats from the genus *Rhinolophus*.

There are more than 100 species in this group, which is widespread from Australia to Europe.

The authors of the latest paper said their findings show that cross-border surveillance is needed to unearth the original host of the virus.

Prof Wang said that to determine this, there has to be a genetic similarity of more than 99 per cent between the genomes of Sars-CoV-2 and the virus in the animal.

The researchers also used serological tests to determine if bats and pangolins – another animal shown to carry coronaviruses similar to Sars-CoV-2 – had neutralising antibodies against the virus.

Neutralising antibodies are a special group of antibodies that can help to prevent the virus from latching on to the host cell and beginning its invasion.

The researchers took samples from bats and pangolins in Thailand and tested them for the presence of neutralising antibodies us-

ing cPass – a neutralising antibody kit developed by Prof Wang.

For the bats, four out of 98 serum samples showed the presence of strong positive neutralising antibodies. The high level of neutralising antibodies detected among them suggests that there might be a more closely related virus in Thai bats, said Prof Wang.

As for the 10 pangolins – whose countries of origin are unclear as they had been confiscated by the Thai authorities from the illegal wildlife trade – molecular tests that look for the presence of viral genetic material all turned up negative, indicating that none of them were currently infected.

However, one pangolin tested positive for neutralising antibodies.

Prof Wang said this shows that pangolins are highly susceptible to such coronaviruses, but it is not clear yet whether they could have acted as the intermediate or transmitting host.

Last November, Denmark decided to cull all the minks being farmed for fur in the country, fearing a mutated form of coronavirus found in the animal could potentially hamper the effectiveness of a future vaccine.

But Prof Wang said culling should not be an option for wildlife.

“Active surveillance and monitoring will be the way to go,” he added.

National University of Singapore mammal researcher Marcus Chua agreed.

He said that compared with the risk of large-scale animal farming, where many animals are in close proximity to humans, the chance of diseases being transmitted from wild animals to humans is lower.

“Extermination of bats is no good because studies have shown that disturbing bat habitats and attempting to cull them could result in a change in their behaviour and may also stress them out – which could cause increased virus prevalence and shedding,” said Mr Chua.

It is important for humans to avoid disturbing wildlife habitats and keep a respectful distance from wild animals.

He added: “Bats perform important ecosystem services such as being bug busters that keep the insect population in the ecosystem in balance, and many are also important seed dispersers.”

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