# New study suggests COVID-19 originated in bats across China and Laos before Wuhan outbreak



## The Evolving Story of COVID-19's Origins: New Insights from American Researchers

Recent research conducted by a team at the University of California, San Diego, has reignited discussions about the origins of COVID-19, suggesting that the virus may not have originated in China as widely believed. The investigators propose that SARS-CoV-2, which causes COVID-19, began its evolutionary journey in bats around 2012, spanning regions of western China and northern Laos. This finding builds on earlier hypotheses regarding the virus’s natural origins and highlights the importance of understanding zoonotic transmission pathways.

The researchers scrutinized over 100 coronaviruses found in horseshoe bats, drawing comparisons with SARS-CoV-2 and its close relative, SARS-CoV-1, the virus responsible for the 2002 SARS outbreak. Their analysis unveiled that the closest relatives of SARS-CoV-2 had likely emerged five to seven years prior to the onset of the pandemic in Wuhan. This timeline echoes previous findings associated with SARS-CoV-1, where familial viruses were traced back a decade before the outbreak in Guangdong province.

This research underscores a significant notion; the genetic analysis challenges the perception that the geographical distance—from the identified bat reservoirs to urban outbreak points—is too vast for a natural origin. As Dr Joel Wertheim, a leading infectious disease specialist and senior co-author of the study, noted, "At the start of the Covid pandemic, people worried the distance between Wuhan and the bat virus reservoir was too vast for a natural origin. This paper shows that it isn't unusual." Such insights emphasise the complexity of these viral transmissions and the role of intermediaries, such as raccoon dogs or civets, which may have carried the virus to markets where human infections began.

In analysing the pathways that may have facilitated SARS-CoV-2’s transmission to humans, the researchers also pointed to four live animal markets in Wuhan known to have sold species susceptible to bat viruses in late 2019. This may provide crucial evidence that these markets played a role as the epicentre of the infection's emergence. Nevertheless, while the findings bolster the argument for a natural spillover event, they do not entirely dismiss the possibility of a laboratory leak from the Wuhan Institute of Virology (WIV). This notion continues to garner attention, especially given the ongoing debates surrounding the virus's origins. Experts, including Dr Simon Clarke, an infectious diseases specialist, express caution, noting that while the paper adds support for a wildlife transmission hypothesis, it does not conclusively eliminate the lab leak theory.

The study also leverages advanced genomic methodologies, filtering out sequences that could complicate the evolutionary analysis due to natural recombination phenomena. This innovative approach has allowed the authors to construct a clearer genetic timeline than was previously achievable.

The release of these findings comes amidst renewed geopolitical tensions surrounding COVID-19's origins. In a white paper, Chinese officials recently suggested that the virus might have originally emerged from the United States, framing this assertion as a rebuttal to ongoing claims that it leaked from the WIV. This notion of blame-shifting in international discourse highlights the complexities surrounding accountability and transparency in addressing global health crises.

As the discourse evolves, the implications of this research could extend beyond understanding the origins of COVID-19. Experts assert that intensified wildlife monitoring and preventative measures are essential to mitigate future pandemics stemming from zoonotic diseases, where interventions could significantly reduce the likelihood of viruses jumping from animals to humans. Therefore, while the question of COVID-19's origins remains partially unresolved, the latest evidence underscores the critical importance of recognising and managing the risks posed by wildlife pathogens in an increasingly interconnected world.

## Reference Map:

* Paragraph 1 – [[1]](https://www.dailymail.co.uk/health/article-14687461/covid-origin-study-not-china.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[2]](https://www.science.org/doi/full/10.1126/science.abh0117)
* Paragraph 2 – [[1]](https://www.dailymail.co.uk/health/article-14687461/covid-origin-study-not-china.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[3]](https://www.nature.com/articles/nrmicro3167), [[4]](https://www.pnas.org/doi/full/10.1073/pnas.2020216118)
* Paragraph 3 – [[2]](https://www.science.org/doi/full/10.1126/science.abh0117), [[5]](https://pubmed.ncbi.nlm.nih.gov/16169905/)
* Paragraph 4 – [[1]](https://www.dailymail.co.uk/health/article-14687461/covid-origin-study-not-china.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[6]](https://www.pnas.org/doi/full/10.1073/pnas.0506735102)
* Paragraph 5 – [[1]](https://www.dailymail.co.uk/health/article-14687461/covid-origin-study-not-china.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[7]](https://www.ucdavis.edu/news/new-sars-virus-discovered-chinese-horseshoe-bats)

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.dailymail.co.uk/health/article-14687461/covid-origin-study-not-china.html?ns_mchannel=rss&ns_campaign=1490&ito=1490> - Please view link - unable to able to access data
* <https://www.science.org/doi/full/10.1126/science.abh0117> - This article discusses the origins of COVID-19, highlighting that SARS-CoV-2's closest relatives are found in horseshoe bats across China and Southeast Asia. It emphasizes that the virus likely emerged from a natural spillover event, with live animal markets playing a significant role in transmission. The study also notes that while the Wuhan Institute of Virology is located in Hubei province, the virus's genetic makeup suggests a natural origin rather than a lab-based one. The findings underscore the importance of monitoring wildlife to prevent future pandemics.
* <https://www.nature.com/articles/nrmicro3167> - This study reports the isolation of a novel coronavirus from Chinese horseshoe bats, which is closely related to the SARS-CoV virus. Whole-genome sequencing revealed a 95% sequence identity with human SARS-CoV, with the receptor-binding domain in the spike protein showing an identical amino acid sequence. The novel virus also uses the human ACE2 receptor for cell entry, suggesting it might be capable of directly infecting humans. These findings provide strong evidence that SARS-CoV might have originated in bats.
* <https://www.pnas.org/doi/full/10.1073/pnas.2020216118> - This research examines the cross-species recognition of SARS-CoV-2 to bat ACE2 receptors. The study provides insights into how SARS-CoV-2 interacts with bat ACE2, contributing to our understanding of the virus's origins and its potential to infect humans. The findings have implications for future research on zoonotic diseases and the development of preventive measures.
* <https://pubmed.ncbi.nlm.nih.gov/16169905/> - This study identifies a coronavirus closely related to SARS-CoV in wild Chinese horseshoe bats. The research found that 39% of bat samples tested positive for the virus, which shares a distinct phylogenetic relationship with human SARS-CoV. The findings suggest that horseshoe bats are natural hosts of SARS-like coronaviruses, providing evidence for the zoonotic origin of SARS-CoV.
* <https://www.pnas.org/doi/full/10.1073/pnas.0506735102> - This research identifies a coronavirus closely related to SARS-CoV in wild Chinese horseshoe bats. The study found that 39% of bat samples tested positive for the virus, which shares a distinct phylogenetic relationship with human SARS-CoV. The findings suggest that horseshoe bats are natural hosts of SARS-like coronaviruses, providing evidence for the zoonotic origin of SARS-CoV.
* <https://www.ucdavis.edu/news/new-sars-virus-discovered-chinese-horseshoe-bats> - This article reports the discovery of a new SARS-like coronavirus in Chinese horseshoe bats. The research team isolated and cultured the live virus that binds to the human SARS ACE2 receptor, proving that it can be transmitted directly from bats to people. The study provides insights into the origins of SARS-CoV and highlights the importance of monitoring wildlife to prevent future pandemics.