

# Two recent papers further confirm natural origin of SARS-CoV-2 virus

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Two papers published in the journal *Science* on July 26 represent a further confirmation of the zoonotic origins of the SARS-CoV-2 virus, that is that the virus was present in an animal reservoir and jumped over to infect humans. This represents a further blow against the largely discredited “Wuhan lab” conspiracy theory.

The first paper, by Michael Worobey from the Department of Ecology and Evolutionary Biology at the University of Arizona and his team—“The Huanan Seafood Wholesale Market in Wuhan was the early epicenter of the COVID-19 pandemic”—maps the earliest period of the outbreak and determines that wild animals caged at the market were the most likely source of the virus.

The second paper by Jonathan E. Pekar, from the Bioinformatics and Systems Program at the University of California San Diego, et al.—“The molecular epidemiology of multiple zoonotic origins of SARS-CoV-2”—determines that two variants were present at the earliest stages of the outbreak dubbed strains A and B and that they were the result of two separate spillover events from animals to humans.

The researchers explain the underlying motivation of their research: “Understanding how severe acute respiratory syndrome coronavirus (SARS-CoV-2) emerged in 2019 is critical to preventing zoonotic outbreaks before they become pandemic”.

This is an undoubtedly essential task, as the pandemic has gone on to kill 6,440,245 people according to the Worldmeter current estimate, and this is sure to be an underestimate. The virus has been able to proliferate unhindered due to all governments except China adopting a “let it rip” approach, renouncing even the most basic public health measures.

The studies both appeared in preprint form in February 2022 but the peer review process has taken several months. The main difference between the preprint and the versions appearing in *Science*, especially for the Worobey paper, is that most of the references in the preprint using Chinese research and sources have been dropped. This includes extensive material on the layout of stalls in the Huanan market, especially the western wing that housed live animals. Chinese scientific work on the SARS-CoV-2 virus has been branded as somehow biased by the corporate media and promoters of the “Wuhan lab” conspiracy.

## First study—the Huanan market

On December 31, 2019 Chinese authorities reported an outbreak of severe pneumonia of unknown cause in Wuhan to the World Health Organisation (WHO). Out of the 41 people who were hospitalised, 27 (66 percent) had a direct exposure to the Huanan market.

The initial diagnosis of COVID-19 was made independently in several Wuhan hospitals between December 18 and 29, 2019.

Chinese authorities decided to close and sanitise the Huanan market on

January 1, 2020, as it was known to sell several species of farmed and wild animals known to carry the virus.

In this study, the scientists set out to meticulously map the initial outbreak. They were able to obtain longitude and latitude coordinates for 155 cases from maps published in a 2021 WHO report on the outbreak. The researchers used the Chinese social media platform Sina Weibo to map the cases. They found that while the December 2019 cases were clustered around the Huanan market, later cases from January and February 2020 were more widely dispersed due to community transmission, according to an earlier study by the Chinese Center for Disease Control and Prevention (CCDC).

They found the December cases with no known links to the market resided closer to the market than those with known links.

The two SARS-CoV-2 lineages, known as A and B, associated with the early outbreak, were both found in close proximity to the Huanan market. Out of the 11 lineage B cases from the December 2019 outbreak where location data was available, the scientists found that their centre point was 1.95 km from the market. The two lineage A cases were detected close by and within the market.

The researchers concluded that this evidence “support[s] the likelihood that during the early epidemic lineage A was, like lineage B, disseminating outward from the Huanan market into the surrounding neighbourhoods.”

This analysis represents a devastating blow against the “Wuhan lab” conspiracy theory, as the laboratory is 23 km from the Huanan market and on the other side of the Yangtze River. One would expect the earliest cases would have been around the virology institute if the lab leak theory was correct.

The Huanan market was known to sell live, wild captured or farmed species in the leadup to the outbreak. They included red foxes (*Vulpes vulpes*), hog badgers (*Arctonyx albogularis*) and common raccoon dogs (*Nyctereutes procyonades*), all known hosts for the SARS-CoV-2 virus.

The CCDC collected five samples containing SARS-CoV-2 in November 2019 at a stall within the market known to sell raccoon dogs.

The scientists point out that the “events leading up to the COVID-19 pandemic mirror the SARS-CoV-1 outbreaks from 2002-2004, which were traced to infected animals in Guangdong, Jiangxi, Henan, and Hubei provinces.”

But the capitalist governments drew no lessons from this connection, creating the conditions for the emergence of the COVID-19 pandemic in 2020.

Importantly, the scientists point out that nothing is known about the upstream events leading to the market outbreak, and they call for an investigation in order to prevent future pandemics.

Worobey commented, “It now puts us at a point where we know that the Huanan market was the epicenter of this pandemic. That much is now established. If others want to argue with that, they’re now essentially

taking a pseudoscientific approach...Even though you don't have the smoking gun of, 'Yes we've sampled the raccoon dog with the virus in December,' when you put it all together, it's the only theory that actually explains all the data."

University of Saskatchewan virologist and co-author Angela Rasmussen argued, "There is no alternative explanation that fits the facts, so anyone trying to come up with one will have to become adept at wilful ignorance, a logical contortionist, or simply a fabulist."

### **Second study—analyzing the genetic lineage**

The earliest case of COVID-19 was a seafood vendor at the Huanan Market who started having symptoms on December 10, 2019 and was hospitalised on December 16. The genome of the infecting virus was not available, but it was almost certainly lineage B, as this was found on equipment at the stall.

The earliest lineage A genome was detected in a family cluster whose members experienced symptoms from December 15 and were hospitalised on December 25.

Pekar and his research team were able to determine that the lineage B SARS-CoV-2 virus jumped into humans from an animal reservoir at the Huanan market in mid-November 2019. They determined that two zoonotic events established lineages A and B in the population, although the former was soon to die out.

The existence of animal reservoirs for the SARS-CoV-2 virus at the Huanan market plus the close proximity of the earliest cases led scientists to postulate that the virus jumped into humans on two separate zoonotic events. These were lineage B in mid-November 2019 and Lineage A in late-November 2019. There was no evidence of further zoonotic events before the market was closed on January 1, 2020.

The earliest sampled genomes proved to have 35.2 percent lineage A and 64.8 percent lineage B. Lineage B differs genetically by two nucleotide substitutions that are also found in the coronavirus infecting *Rhinolophus* bats.

In 2021, Wuhan virologist Dr. Shi Zhengli identified a *Rhinolophus* affinis bat found in the Yunnan province that carried coronavirus very similar to the SARS-CoV-2 virus infecting humans. This represented a further devastating blow to the "Wuhan lab" conspiracy theory.

Importantly Pekar's team concluded that "once an animal virus acquires the capacity for human infection and transmission, the only remaining barrier to spillover is contact between humans and the pathogen."

### **The "Wuhan lab" conspiracy theory**

Significantly, some of the scientists have become key opponents of the "Wuhan lab" conspiracy theory.

In an interview with the *Guardian*, Rasmussen explained the significance of their scientific work: "Now, if the virus had escaped from a lab, somebody would have had to get infected with lineage B in the lab, go to the market and infect people there without having infected anyone along the way, and then somebody else would have had to do the exact same thing with lineage A a few weeks later. It's not impossible, but a simpler explanation is that the virus was brought to the market in an animal, from where it spread to other animals, diverging in the process. The two lineages then spilled over separately into humans."

In a Twitter post Rasmussen attacked the "Wuhan lab" conspiracy agenda: "Last I checked, just accusing an entire global community of scientists who rely on evidence to assess data is not itself evidence of said worldwide conspiracy to deliberately cause a pandemic and cover it up. It does, however, fit neatly into a 'Blame China' agenda."

Some of the scientists involved in the study themselves previously

viewed the "Wuhan lab" origin for the pandemic as a serious possibility, but have reversed their position due to the weight of scientific evidence.

Professor Kristian Andersen in the Department of Immunology and Microbiology at Scripps Research and co-author of one of the studies stated, "I was quite convinced of the lab leak myself until we dove into this very carefully and looked at it much closer."

Worobey himself signed a letter published in *Science* in May 2021 along with several other scientists giving the lab leak theory some credence but now importantly advocates for the natural origin of the virus: "When you look at all of the evidence, it is clear that this started at the market. Separate lines of analysis point to it, and it's extremely improbable that two distinct lineages of SARS-CoV-2 could have been derived from a laboratory and then coincidentally ended up at the market."

Scientists such as Rasmussen, Worobey and Andersen have taken an extremely brave stance in supporting a scientific approach to the origins of the pandemic, as they have been subject to the vilest harassment by right wing zealots on social media.

The *World Socialist Web Site* (WSWS) has taken a consistent and principled stance against the "Wuhan lab" conspiracy. The theory originated with fascist Steve Bannon, CEO of Trump's 2016 election campaign and former chief White House strategist. Bannon's allies among right-wing Chinese expatriates include Miles Guo, who claimed, in the words of Trump adviser Peter Navarro, that COVID-19 was a "weaponized" virus.

This lie was echoed and amplified by other far-right commentators. On May 3, 2020 Secretary of State Mike Pompeo declared there was "enormous evidence" that the virus originated in a Wuhan laboratory, adding, "Remember, China has a history of infecting the world."

On May 5, 2021, former *New York Times* science writer Nicholas Wade gave a pseudo-scientific gloss to the conspiracy, claiming that Chinese scientists created SARS-CoV-2 through so-called "gain of function" experiments at the Wuhan Institute of Virology. This was amplified by media outlets such as the *New York Times*, *Washington Post* and *Wall Street Journal*.

On May 26, 2021 President Joe Biden gave credence to the "Wuhan lab" conspiracy, calling on US intelligence agencies to investigate whether COVID-19 arose "from a laboratory accident," ordering them to "report back to me in 90 days."

While the chief role in exposing the fraud were scientists, the WSWS played a critical role in highlighting the lies promulgated by leading media outlets. The WSWS exposed the role of fascistic figures such as Bannon and Guo in the concoction and spreading of the conspiracy.

Principled scientists have vigorously taken up the challenge to prove the zoonotic origins of the pandemic, but they cannot oppose the political conspiracy unaided. The defence of their scientific endeavour requires the mobilization of the working class for such an alliance, through the Global Workers Inquest into COVID-19.



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