US and Chinese researchers team up for hunt into Covid origins

Scientists co-operate on search for Covid-19 origins despite charges Beijing is withholding data

US scientists are working with China to investigate the origin of coronavirus, despite criticism from the Trump administration that Beijing is failing to co-operate with outsiders to stem the disease.

Ian Lipkin, director of the Center for Infection and Immunity at the Mailman School of Public Health at Columbia University, said he was working with a team of Chinese researchers to determine whether coronavirus emerged in other parts of China before it was first discovered in Wuhan in December. The effort relies on help from the Chinese Centers for Disease Control and Prevention.

“The China CDC is interested in learning as much as it can about the origins [of] these types of viruses,” Prof Lipkin, a virologist who worked on the 2003 Sars and 2012 Mers coronavirus outbreaks and advised on the 2011 pandemic film Contagion, told the Financial Times. “We share whatever we learn with the entire scientific community.”
Prof Lipkin, who has developed longstanding relationships with Chinese officials since he helped develop rapid testing for Sars in 2003, visited China earlier this year to discuss responses to Covid-19. He met premier Li Keqiang, and also received an award, his second from China.

Lu Jiahai, a professor at the Public Health School of Sun Yat-sen University in Guangzhou and Prof Lipkin’s research partner in China, told the FT that China CDC had helped him liaise with hospitals and local CDCs across the country. This was to access nationwide blood bank samples taken from pneumonia patients so the group could study whether coronavirus had been present in the population before it was detected in Wuhan.

“We are working across regions and departments to trace the origin of the virus,” he said, adding the study began in early February and may produce results later this year.

Prof Lu said the problem with existing research on coronavirus was that it depended overwhelmingly on cases reported by hospitals, but that some people may have been infected with the virus and later developed antibodies before anyone was aware of the disease.

“A critical part of our work, which we conducted with the help of Chinese CDC, is to test blood samples of pneumonia patients nationwide in December, November or even earlier,” he said. He added that it was “very important” to study earlier infection cases given indications between 30 to 50 per cent of virus carriers do not show symptoms.

Beijing and Washington have lobbed accusations at each other over the origin of the disease, which the World Health Organization says most likely emerged from bats via an intermediary animal in the last quarter of 2019.

US officials have criticised China for what they say is a cover-up of the early outbreak and failure to share information. Secretary of state Mike Pompeo this week accused China of destroying early samples of the virus and waiting until the outbreak was “in every province” before reporting sustained human-to-human transmission to the WHO.

“Even after the CCP [Chinese Communist party] did notify the WHO of the coronavirus outbreak, China didn’t share all of the information it had,” said Mr Pompeo.

“We still do not have a sample of the virus nor has the world had access to the facilities or other locations where this virus may have originated inside of Wuhan,” he said, adding this had made it impossible to track the disease’s evolution.
Only three of 12 WHO officials who visited China in February were allowed to visit Wuhan, and their [final report](https://www.ft.com/content/f08181a9-526c-4e4b-ac5f-0614bf1cffb3) said “the timely filling” of knowledge gaps including the source of infection was “imperative to enhance control strategies”.

“As the animal origin of the Covid-19 virus is unknown at present, the risk of reintroduction into previously infected areas must be constantly considered,” it said.

Chinese authorities censored early warnings from the medical community, with one Wuhan doctor who drew attention to the disease and [subsequently died](https://www.ft.com/content/f08181a9-526c-4e4b-ac5f-0614bf1cffb3) from it, hailed as a [national hero](https://www.ft.com/content/f08181a9-526c-4e4b-ac5f-0614bf1cffb3) after police forced him to retract his statement.

The US CDC offered help to China in the early stages of the outbreak, but has not made a formal request to its Chinese counterpart for research sharing.

“The US-China research team is also studying blood samples of various wild animals that the team thought might be the origin of the virus, Prof Lu said. “We want to understand how animal-to-human transmission happened,” he said, adding he worked with Prof Lipkin because he was a leading expert in identifying and diagnosing unknown viruses.

Prof Lipkin was part of a multinational team that published a March paper in [Nature Medicine](https://www.ft.com/content/f08181a9-526c-4e4b-ac5f-0614bf1cffb3) that noted the illegally imported Malayan pangolins carried a coronavirus similar to the one that causes Covid-19, but which argued neither the pangolin nor the bat were the likely “direct progenitor” of the virus.

“Obtaining related viral sequences from animal sources would be the most definitive way of revealing viral origins,” the paper said, adding it would be “highly informative” to sequence the virus from “very early cases”.

The Financial Times is making key coronavirus coverage free to read to help everyone stay informed. [Find the latest here](https://www.ft.com/content/f08181a9-526c-4e4b-ac5f-0614bf1cffb3).
A separate international group of scientists, including from the US and China, is also working with WHO to pool research in support of developing a vaccine.

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The main options

Antivirals

Drugs designed for treatment of Ebola, HIV, flu and malaria. They try to stop the replication of coronavirus by interfering with enzymes that help it copy itself and spread. They are believed to be most useful in the earlier stages of the disease. The virus uses similar machinery to copy itself as Ebola, giving some experts hope that Gilead’s Ebola drug remdesivir may help patients.

Anti-inflammatories

Designed for conditions such as arthritis. Several groups are investigating the potential of IL6 inhibitors, which lower the production of inflammatory proteins called cytokines. They are most useful in the latter stages of the disease, when some patients suffer from acute respiratory distress syndrome because their immune systems are overwhelmed.

Antibodies

Drugs derived from Covid-19 patients’ immune response. They reproduce the antibodies of patients’ immune systems to support people with less robust responses. Plasma from recovered patients is being infused into the seriously ill. But drugmakers aim to refine the process, strengthening the potency of the antibodies or creating artificial ones that will be more effective.