

19 Sept 2024

## Perspective

# Virology—The next fifty years

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<sup>6</sup>Department of Immunobiology, BIO5 Institute, University of Arizona, Tucson, AZ, USA

<sup>7</sup>Ignaz Semmelweis Institute, Interuniversity Institute for Infection Research, Medical University of Vienna, Vienna, Austria

<sup>8</sup>These authors contributed equally

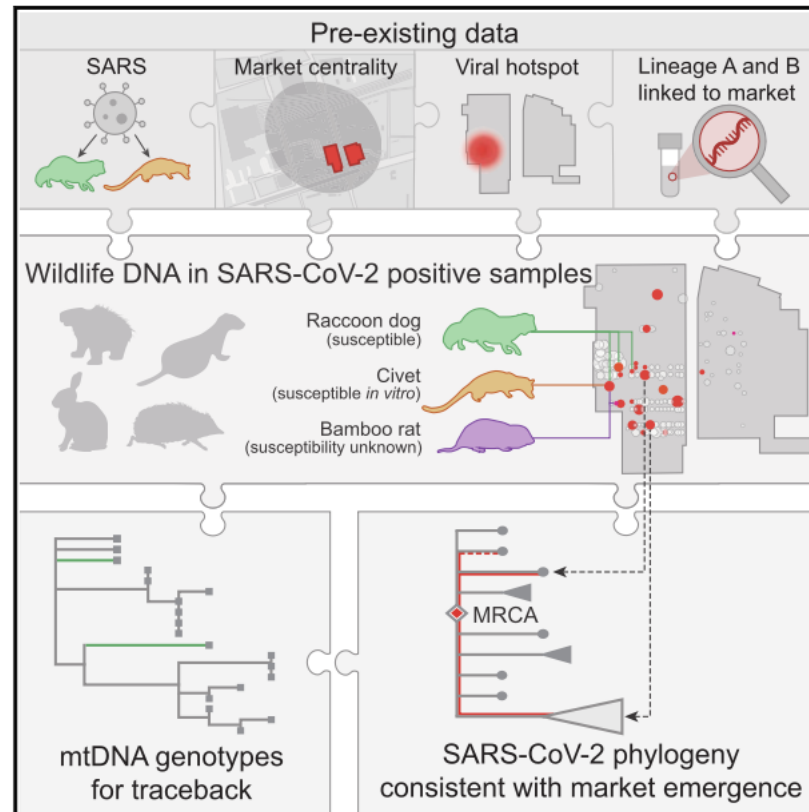
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<https://doi.org/10.1016/j.cell.2024.07.025>

Virology needs to stand firm in the face of these assaults but also to learn important lessons. Virology, like any science, cannot function without public support. We must better communicate our work and acknowledge where failings occur. Most

# Genetic tracing of market wildlife and viruses at the epicenter of the COVID-19 pandemic

## Graphical abstract



## Authors

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## In brief

DNA of mammalian wildlife species susceptible to SARS-CoV-2 was detected along with SARS-CoV-2 and other viruses in environmental samples from animal stalls located at the market epicenter of the emergence of COVID-19.

DNA from raccoon dogs, civets, and other wildlife species detected in market samples (but no progenitor virus)

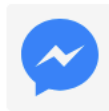
Genotypes of potential hosts reconstructed for retracing animal geographic origins

19 Sept 2024

## It WASN'T a lab leak! Scientists say they've finally discovered the truth about the origins of Covid

By [LUKE CHAFER](#)

PUBLISHED: 16:09 GMT, 19 September 2024 | UPDATED: 10:46 GMT, 20 September 2024



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Scientists believe they've uncovered the true origin of the Covid pandemic — and have rejected the popular theory that the virus was leaked from a laboratory.

A major international study published today insists that the virus began life in a 'wet market' in **Wuhan, China**, rather than in a scientific experiment.

19 Sept 2024



## Crits-Christoph et al., 2024 Retraction Request



BRYCE NICKELS

SEP 19, 2024

“Phylogenomic evidence, epidemiological evidence, and documentary evidence all indicate that SARS-CoV-2 entered humans in July-November 2019 (..). As such, conclusions based on data for the Huanan Seafood Market on or after mid-to-late December 2019--as in Crits-Christoph et al. 2024--cannot, even in principle, shed light on spillover into humans that occurred one to five months earlier, in July-November, 2019 (4,29).”

21 Sept 2024

The Telegraph

Your Say News Sport Business Money Opinion Ukraine Travel Health



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Matt Ridley

# Don't fall for the Chinese wet market theory for Covid

Contrary to reports, the evidence still points to a lab leak being the most likely cause of the pandemic

<https://www.telegraph.co.uk/news/2024/09/21/dont-believe-the-chinese-wet-market-theory-for-covid/>

22 Sept 2024



Scientists now believe they have more evidence that Covid-19 originated in a food market in Wuhan. Norwegian experts are skeptical.

“There are some researchers who have a great interest in rejecting the lab leak theory (..) Again they are trying to close the whole discussion about the lab leak. The only people who are absolutely certain about the origin of the virus are this group of scientists.”

[https://www-vg-no.translate.google.nyheter/i/63BQaL/ny-studie-hevder-at-covid-19-kom-fra-marked?\\_x\\_tr\\_sl=no&\\_x\\_tr\\_tl=en&\\_x\\_tr\\_hl=no&\\_x\\_tr\\_pto=wapp](https://www-vg-no.translate.google.nyheter/i/63BQaL/ny-studie-hevder-at-covid-19-kom-fra-marked?_x_tr_sl=no&_x_tr_tl=en&_x_tr_hl=no&_x_tr_pto=wapp)

<https://www.vg.no/nyheter/i/63BQaL/ny-studie-hevder-at-covid-19-kom-fra-marked>

7 Oct 2024

Preparing for the  
Next Pandemic:  
Evolution,  
Pathogenesis and  
Virology of  
Coronaviruses, AWAJI,  
JAPAN

Awaji Yumebutai Conference  
Center, JAPAN

December 2-5, 2024

Abstract deadline: October 11, 2024

**Organized by:**

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**Ravindra Gupta**, University of  
Cambridge

**Zhengli Shi**, Guangzhou Laboratory  
(Virtual)

**Alex Sigal**, Africa Health Research  
Institute

2 Dec 2024

Report by the Republican-majority select committee  
of the US House of Representatives



About ▾

Committee Activity ▾

Press Release

Published: Dec 2, 2024

# FINAL REPORT: COVID Select Concludes 2-Year Investigation, Issues 500+ Page Final Report on Lessons Learned and the Path Forward

“COVID-19 most likely emerged from a laboratory in Wuhan”



[nature](#) > [news](#) > article

NEWS | 04 December 2024

# Sick animals suggest COVID pandemic started in Wuhan market

**A preliminary analysis takes a closer look at genomic data collected at the market.**

By [Smriti Mallapaty](#)



The analysis finds evidence that the immune systems of some animals had been activated, which supports the theory that they were infected, says Stanley Perlman, a virologist at the University of Iowa in Iowa City. But “it doesn’t substitute for finding the virus in an infected animal”.



 OPEN ACCESS  PEER-REVIEWED

RESEARCH ARTICLE

# Receptor binding and structural basis of raccoon dog ACE2 binding to SARS-CoV-2 prototype and its variants

Chunliang Luo, Linjie Li, Yuhang Gu, Hangchuan Zhang, Zepeng Xu, Junqing Sun, Kaiyuan Shi, Sufang Ma, Wen-Xia Tian, Kefang Liu , George F. Gao 

Published: December 5, 2024 • <https://doi.org/10.1371/journal.ppat.1012713>

“Some scientists raised the possibility that raccoon dogs could serve as natural hosts for SARS-CoV-2 [33, 34]. However, this finding alone falls short of conclusively establishing raccoon dogs as natural hosts. To date, while 45 species have been documented as naturally infected with SARS-CoV-2, there has been no confirmation of raccoon dogs being naturally infected with or carrying the virus. Furthermore, investigations during the early stages of the COVID-19 epidemic failed to detect SARS-CoV-2 in raccoon dogs [35]. Thus, there is currently no direct evidence supporting that raccoon dogs are the natural hosts of SARS-CoV-2.”

17 Dec 2025

## BMC Genomic Data

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Data Note | [Open access](#) | Published: 17 December 2024

# Pre-pandemic artificial MERS analog of polyfunctional SARS-CoV-2 S1/S2 furin cleavage site domain is unique among spike proteins of genus *Betacoronavirus*

[Andreas Martin Lisewski](#) 

[BMC Genomic Data](#) **25**, Article number: 104 (2024) | [Cite this article](#)


The furin cleavage site “includes two additional functional motifs: a pat7 nuclear localization signal and two flanking O-glycosites.”

“a fully analogous S1/S2 domain was found in only one other virus: the artificial MERS infectious clone MERS-MA30, described already in 2017”

19 Dec 2025

Retraction Note | [Open access](#) | Published: 19 December 2024

## Retraction Note: Origin and cross-species transmission of bat coronaviruses in China



[Alice Latinne](#), [Ben Hu](#), [Kevin J. Olival](#), [Guangjian Zhu](#), [Libiao Zhang](#), [Hongying Li](#), [Aleksei A. Chmura](#), [Hume E. Field](#), [Carlos Zambrana-Torrel](#), [Jonathan H. Epstein](#), [Bei Li](#), [Wei Zhang](#), [Lin-Fa Wang](#), [Zheng-Li Shi](#)  & [Peter Daszak](#) 

[Nature Communications](#) **15**, Article number: 10706 (2024) | [Cite this article](#)

Article | [Open access](#) | Published: 19 December 2024

<https://www.nature.com/articles/s41467-024-55454-w>

## Origin and cross-species transmission of bat coronaviruses in China

[Alice Latinne](#), [Ben Hu](#), [Kevin J. Olival](#), [Guangjian Zhu](#), [Li-Biao Zhang](#), [Hongying Li](#), [Aleksei A. Chmura](#), [Hume E. Field](#), [Carlos Zambrana-Torrel](#), [Jonathan H. Epstein](#), [Bei Li](#), [Wei Zhang](#), [Lin-Fa Wang](#), [Zheng-Li Shi](#)  & [Peter Daszak](#) 

[Nature Communications](#) **15**, Article number: 10705 (2024) | [Cite this article](#)

<https://www.nature.com/articles/s41467-024-55384-7>

Laotian and duplicate sequences removed

Why?



**Gilles Demaneuf**    
@gdemaneuf

Because they could have been forced to retract if they had kept these samples in their data, for reasons linked to the way the Laos samples were collected.

10:29 AM · Dec 21, 2024 · **278** Views

<https://x.com/gdemaneuf/status/1870401116397359440>

# Milestone: COVID-19 five years ago

30 December 2024 | Statement | Reading time: 1 min (282 words)

“We continue to call on China to share data and access so we can understand the origins of COVID-19. This is a moral and scientific imperative.”



# COVID 5 years later: Learning from a pandemic many are forgetting

Five years after SARS-CoV-2 surfaced, scientists reflect and look ahead to the next threat

2 JAN 2025 • 9:00 AM ET • BY [JON COHEN](#)

“In Japan, a 4-day conference” (..)

“two of the country’s most prominent COVID-19 researchers were notable no shows. Shi Zhengli (..) only gave a prerecorded video talk (..) despite being a co-organizer of the event. So did Chinese Academy of Sciences virologist George Gao, former head of China’s Center for Disease Control and Prevention. Shi, now with the Guangzhou Laboratory, and Gao both declined to explain their absence to Science.”

17 Jan 2025



About ▼ Committee A

Press Release

Published: Jan 17, 2025

# **BREAKING: HHS Formally Debars EcoHealth Alliance, Dr. Peter Daszak After COVID Select Reveals Pandemic-Era Wrongdoing**

“the U.S. Department of Health and Human Services (HHS) cut off all funding and formally debarred EcoHealth Alliance Inc. (EcoHealth) and its former President, Dr. Peter Daszak, for five years”

“This letter also confirms that EcoHealth terminated Dr. Daszak’s employment effective January 6, 2025.”

13 Jan 2025




## Interview of The Seeker

**Firstpost.** Home Video Shows World Explai

Home / World / 'Millions could've been saved if Chinese were transparent': The Seeker, Indian...

# 'Millions could've been saved if Chinese were transparent': The Seeker, Indian whistleblower, who exposed Covid-19 cover-up

Madhur Sharma • January 13, 2025, 11:12:55 IST

*Prasenjit Ray and others at the collective DRASTIC spent months scouring the*



25 Jan 2025

**NR** The CIA 'Now Favors the Lab Theory' For Covid-19's Origin

**THE CORNER** NATIONAL SECURITY & DEFENSE

# The CIA 'Now Favors the Lab Theory' For Covid-19's Origin

“the agency issued a new assessment this week, with analysts saying they now favor the lab theory”

27 Jan 2025

MONDAY, JANUARY 27, 2025

# **DR. PAUL ISSUES SUBPOENAS TO FOURTEEN AGENCIES REGARDING COVID-19 ORIGINS AND RISKY GAIN-OF- FUNCTION RESEARCH**

<https://www.hsgac.senate.gov/media/reps/dr-paul-issues-subpoenas-to-fourteen-agencies-regarding-covid-19-origins-and-risky-gain-of-function-research/>

<https://www.washingtonexaminer.com/policy/healthcare/3302227/rand-paul-subpoenas-14-agencies-covid-origins/>

28 Jan 2025

Australia News > Coronavirus

EXCLUSIVE

# Former US State Department COVID investigator reveals Australian spy agencies collected intelligence related to COVID origins in China

Australian spy agencies collected top-secret intelligence related to the origins of COVID-19 in Wuhan, China, a leading investigator has revealed.



**Sharri Markson** Sky News Host



less than 2 min read January 28, 2025 - 10:30PM

sky news .COM.AU

<https://www.skynews.com.au/australia-news/coronavirus/former-us-state-department-covid-investigator-reveals-australian-spy-agencies-collected-in-telligence-related-to-covid-origins-in-china/news-story/daac6c683b87b789df1c85d564f4d286>

<https://www.zerohedge.com/medical/australian-spy-agency-collected-signals-intelligence-related-covid-china-origins-former>

22 Feb 2025



Volume 11, Issue 1  
2025

(In Progress)

JOURNAL ARTICLE

## Recently reported SARS-CoV-2 genomes suggested to be intermediate between the two early main lineages are instead likely derived

Jonathan E Pekar , Niema Moshiri, Philippe Lemey, Alexander Crits-Christoph, Florence Débarre, Stephen A Goldstein, Zach Hensel, Andrew Rambaut, Michael Worobey, Edward C Holmes, Joel O Wertheim 

*Virus Evolution*, Volume 11, Issue 1, 2025, veaf008, <https://doi.org/10.1093/ve/veaf008>

**Published:** 22 February 2025    **Article history** ▼

“these two T/T genomes represent an evolutionarily intermediate haplotype between lineages A and B, or if they are a later descendent of either of these two lineages.”

“After including additional data from the start of the pandemic, including these two T/T genomes, we again find a discrepancy in the molecular clock when inferring the ancestral haplotype of SARS-CoV-2, corroborating existing evidence for the separate introductions of SARS-CoV-2 lineages A and B into the human population in late 2019.”

27 Feb 2025

[Submitted on 27 Feb 2025 (this version), **latest version 14 Mar 2025 (v2)**]

# **Purported quantitative support for multiple introductions of SARS-CoV-2 into humans is an artefact of an imbalanced hypothesis testing framework**

Angus McCowan

A prominent report claimed substantial support for two introductions of SARS-CoV-2 into humans using a calculation that combined phylodynamic inferences and epidemic models. Inspection of the calculation identifies an imbalance in the hypothesis testing framework that confounds this result; the single-introduction model was tested against more stringent conditions than the two-introduction model. Here, I show that when the two-introduction model is tested against the same conditions, the support disappears.

<https://arxiv.org/abs/2502.20076v1>

*See also critics by Florence Débarre on PubPeer and responses*

<https://pubpeer.com/publications/2C73F441513A42FE6D566147E5E76C#4>

28 Feb 2025



Supports open access

Access provided by Institute of Biological Sciences

ARTICLE · Online now, February 18, 2025

# Bat-infecting merbecovirus HKU5-CoV lineage 2 can use human ACE2 as a cell entry receptor

[Jing Chen](#)<sup>1,8</sup> · [Wei Zhang](#)<sup>2,3,8</sup> · [Yang Li](#)<sup>1,8</sup> · [Chen Liu](#)<sup>4,8</sup> · [Tianyi Dong](#)<sup>1,5</sup> · [Huiyu Chen](#)<sup>2,3</sup> · [Chunguang Wu](#)<sup>1,5</sup> · [Jia Su](#)<sup>1,5</sup> · [Bei Li](#)<sup>1</sup> · [Wei Zhang](#)<sup>1</sup> · [Ben Hu](#)<sup>1</sup> · [Jingkun Jia](#)<sup>1,5</sup> · [Cheng-Bao Ma](#)<sup>4</sup> · [Yan Zhu](#)<sup>1</sup> · [Xiangyang He](#)<sup>6</sup> · [Ang Li](#)<sup>2,3</sup> · [Kaiyi Pan](#)<sup>1,5</sup> · [Haofeng Lin](#)<sup>3</sup> · [Zishuo Guo](#)<sup>1,5</sup> · [Cong Li](#)<sup>7</sup> · [Libiao Zhang](#)<sup>6</sup> ✉ · [Huan Yan](#)<sup>4</sup> ✉ · [Peng Zhou](#)<sup>2,3</sup> ✉ · [Wei Peng](#)<sup>2,3</sup> ✉ · [Zheng-Li Shi](#)<sup>2,9</sup> ✉

discovery of HKU5-CoV lineage 2 (HKU5-CoV-2) in bats

Bat HKU5-CoV-2 was isolated and used to infect human-ACE2-expressing cells

Experiments “performed in BSL-2”

COVID ORIGINS

# Exclusive: Inside the FBI's Lab Leak Investigation

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As bird flu spreads, and Team Trump begins dismantling America's public health apparatus, a former FBI scientist and investigator speaks out about the evidence that led the bureau to suspect that COVID-19 was sparked by an incident at the Wuhan Institute of Virology.

BY KATHERINE EBAN

FEBRUARY 27, 2025



11 March 2025





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New Results

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## **The furin cleavage site is required for pathogenesis, but not transmission of SARS-CoV-2**

Angelica L. Morgan, Michelle N. Vu,  Yiyang Zhou, Kumari G. Lokugamage, William M. Meyers, R. Elias Alvarado, Yani Ahearn, Leah K. Estes, Jessica A. Plante, Bryan A. Johnson,  Mehul S. Suthar, David H Walker, Ken S. Plante, Vineet D. Menachery

Here: SARS-CoV-2 PQQAR mutant  
disrupting the FCS, but preserving the S1/S2 loop length  
attenuates pathogenesis  
can be transmitted between hamsters but not as good as WT

March 2024

Many articles in German newspapers

## **Corona Pandemic: BND Believes a Laboratory Accident Was the Cause**

<https://www.spiegel.de/wissenschaft/corona-lothar-wieler-haelt-labor-ursprung-von-sars-cov-2-fuer-die-wahrscheinlichere-these-a-1e2bcf76-2bfa-4fb4-b3bb-a9a0ed6ac606?search=ref=xx-cp-sh>

<https://www.nzz.ch/international/der-deutschen-regierung-liegen-plausible-indizien-vor-dass-das-coronavirus-aus-dem-labor-in-wuhan-kommt-ld.1874840>

<https://www.zeit.de/2025/11/coronavirus-ursprung-wuhan-labor-china-bnd/seite-4>

<https://www.zeit.de/politik/deutschland/2025-03/corona-pandemie-bundestag-laborthese-bundesregierung-bnd>

<https://www.zeit.de/gesundheit/2025-03/ursprung-sars-cov-2-bnd-labor-china-corona>

<https://www.zeit.de/2025/11/coronavirus-ursprung-wuhan-labor-china-bnd/seite-4>

<https://www.zeit.de/politik/ausland/2025-03/coronavirus-bnd-china-labor-ursprung-who>

<https://www.zeit.de/politik/deutschland/2025-03/merkel-corona-wuhan-laborunfall-vertuschung>

15 March 2025

**Mail**Online

# **Boris was convinced by my evidence - but the scientists swallowed Beijing's propaganda on the origin of the Coronavirus, writes SIR RICHARD DEARLOVE**

By SIR RICHARD DEARLOVE FOR THE MAIL ON SUNDAY

PUBLISHED: 22:29 GMT, 15 March 2025 | UPDATED: 22:35 GMT, 15 March 2025

[www.dailymail.co.uk/news/article-14503019/Boris-evidence-scientists-Beijing-propaganda-Coronavirus-SIR-RICHARD-DEARLOVE.html](http://www.dailymail.co.uk/news/article-14503019/Boris-evidence-scientists-Beijing-propaganda-Coronavirus-SIR-RICHARD-DEARLOVE.html)

Versus this old article:  
Oct 2023

**ComputerWeekly.com**

## **Top science journal faced secret attacks from Covid conspiracy theory group**

“The campaign was led by former chief of the Secret Intelligence Service (SIS) Sir Richard Dearlove in conjunction with (..)”

<https://www.computerweekly.com/news/366553435/Top-science-journal-faced-secret-attacks-from-Covid-conspiracy-theory-group>

And : <https://www.dailymail.co.uk/news/article-8389809/Spy-chief-coronavirus-storm.html> June 2020

Q&A

# They Tried to Silence Her COVID Origin Theory. Now Even the CIA Agrees with Alina Chan.

In 2020, the Broad Institute scientist ignited a controversy by suggesting that SARS-CoV-2 originated in a Chinese lab. Five years later, it sure looks like she was right.

by **ROWAN JACOBSEN** • 3/12/2025, 9:00 a.m.

*TheHub*



Opening Lines

## GOING VIRAL

In 2020, Broad Institute scientist Alina Chan sparked controversy by suggesting COVID originated in a Chinese lab. Five years later, the public—including the CIA—may finally believe her.

*By Rowan Jacobsen*

Portraits by Ken Richardson

16 March 2025

**One of the first to suggest Covid was created in a lab, biologist Alina Chan faced death threats and was branded a 'race traitor'. Now she tells IAN BIRRELL...  
'There was a real conspiracy among very powerful scientists. The cover-up was morally repugnant'**

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By [IAN BIRRELL FOR THE DAILY MAIL](#)

**PUBLISHED:** 22:34 GMT, 16 March 2025 | **UPDATED:** 22:40 GMT, 16 March 2025

16 March 2025

**The New York Times**

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**OPINION**

**ZEYNEP TUFEKCI**

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# **We Were Badly Misled About the Event That Changed Our Lives**

March 16, 2025

*All my introduction slides are available online*

*<https://courtier.ijm.fr/news-covid-origin/>*