







Article

# Virome characterization of game animals in China reveals a spectrum of emerging pathogens

Wan-Ting He<sup>1, 11</sup>, Xin Hou<sup>2, 11</sup>, Jin Zhao<sup>1, 11</sup>, Jiumeng Sun<sup>1</sup>, Haijian He<sup>7</sup>, Wei Si<sup>4</sup>, Jing Wang<sup>2</sup>, Zhiwen Jiang<sup>1</sup>, Ziqing Yan<sup>1</sup>, Gang Xing<sup>4</sup>, Meng Lu<sup>1</sup>, Marc A. Suchard<sup>5</sup>, Xiang Ji<sup>6</sup>, Wenjie Gong<sup>3</sup>, Biao He<sup>3</sup>, Jun Li<sup>8</sup>, Philippe Lemey<sup>9</sup>, Deyin Guo<sup>2</sup>, Changchun Tu<sup>3</sup>, Edward C. Holmes<sup>10, 12</sup>  , Mang Shi<sup>2, 12</sup>   
, Shuo Su<sup>1, 12, 13</sup>  

1941 game animals from China

“No viruses closely related to either SARS-CoV or SARS-CoV-2 (or other sarbecoviruses) were detected in any of the animals examined.”



Photo illustration: Soohie Cho for The Intercept, Getty Images

# NIH SENT THE INTERCEPT 292 FULLY REDACTED PAGES RELATED TO VIRUS RESEARCH IN WUHAN

The NIH continues to withhold critical documents that could shed light on the origin of the coronavirus pandemic.



Sharon Lerner

February 20 2022, 1:00 p.m.

<https://theintercept.com/2022/02/20/nih-coronavirus-research-wuhan-redacted/>

# Wuhan lab leak theory ‘accepted as likely behind closed doors at No 10’

Biosecurity expert helping Government to prevent future pandemics claims ministers consider leak as most likely origin of Covid pandemic

By Sarah Knapton, SCIENCE EDITOR

22 February 2022 • 7:00pm

“The Prime Minister told the House of Commons that the UK biosecurity strategy would be refreshed to protect against “natural zoonosis and laboratory leaks”, in a public acknowledgement of the threat from insecure research facilities.”

IDEAS • COVID-19

# Knowing the Origins of COVID-19 Won't Change Much

BY **ROBERT C. GALLO AND DEAN T. JAMISON** FEBRUARY 23, 2022 2:39 PM EST

25 February 2022

**In Review** | **nature portfolio**

BIOLOGICAL SCIENCES - ARTICLE

# Surveillance of SARS-CoV-2 in the environment and animal samples of the Huanan Seafood Market

> George Gao, William Liu, Peipei Liu, Wenwen Lei, Zhiyuan Jia, Xiaozhou He, Lin-Lin Liu, Weifeng Shi, Yun Tan, Shumei Zou, Xiang Zhao, Gary Wong, Ji Wang, Feng Wang, Gang Wang, Kun Qin, Rongbao Gao, Jie Zhang, Min Li, Wenling Xiao, Yuanyuan Guo, Ziqian Xu, Yingze Zhao, Jingdong Song, Jing Zhang, Wei Zhen, Wenting Zhou, Beiwei Ye, Juan Song, Mengjie Yang, Weimin Zhou, Yuhai Bi, Kun Cai, Dayan Wang, Wenjie Tan, Jun Han, Wenbo Xu, Guizhen Wu

26 February 2022



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February 26, 2022

Preprint

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# The Huanan market was the epicenter of SARS-CoV-2 emergence

Michael Worobey; Joshua I. Levy; Lorena M. Malpica Serrano; Alexander Crits-Christoph; Jonathan E. Pekar; Stephen A. Goldstein; Angela L. Rasmussen; Moritz U. G. Kraemer; Chris Newman; Marion P. G. Koopmans; Marc A. Suchard; Joel O. Wertheim; Philippe Lemey; David L. Robertson; Robert F. Garry; Edward C. Holmes; Andrew Rambaut; Kristian G. Andersen

Geographical clustering of the earliest known COVID-19 cases and the proximity of positive environmental samples to live-animal vendors suggest that the Huanan Seafood Wholesale Market in Wuhan was the site of origin of the COVID-19 pandemic.

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# SARS-CoV-2 emergence very likely resulted from at least two zoonotic events

Pekar, Jonathan E.; Magee, Andrew; Parker, Edyth; Moshiri, Niema; Izhikevich, Katherine; Havens, Jennifer L.; Gangavarapu, Karthik; Malpica Serrano, Lorena M.; Crits-Christoph, Alexander; Matteson, Nathaniel L.; Zeller, Mark; Levy, Joshua I.; Wang, Jade C.; Hughes, Scott; Lee, Jungmin; Park, Heedo; Park, Man-Seong; Ching Zi Yan, Katherine; Tzer Pin Lin, Raymond; Mat Isa, Mohd Noor; Muhammad Noor, Yusuf; Vasylyeva, Tetyana I.; Garry, Robert F.; Holmes, Edward C.; Rambaut, Andrew; Suchard, Marc A.; Andersen, Kristian G.; Worobey, Michael; Wertheim, Joel O.

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# SARS-CoV-2 infection at the Huanan seafood market

Courtier-Orgogozo, Virginie; de Ribera, Francisco A.

The Huanan market harbored many of the early COVID-19 cases in 2019 and is a key element to understanding the origin of the pandemic. Whether the initial animal-to-human transmission did occur at this market is still debated. Here we do not examine how SARS-CoV-2 virus was introduced at the market, but focus on how early cases may have been infected at the market. Based on available evidence, we suggest that several early infections at the Huanan market may have occurred via human-to-human transmission in closed spaces such as canteens, Mahjong rooms or toilets. We advocate for further studies to investigate this hypothesis.



# HAMBURG DECLARATION 2022 Call for a Global End to High-Risk "Gain-of-Function" Research on Potential Pandemic Pathogens

February 2022

Project: COVID-19 Origin



Roland Wiesendanger

Signed by 50 scientists  
Translated in several languages

# European Commission could play a decisive role in investigations on COVID-19 origins

March 2022

DOI: [10.13140/RG.2.2.34518.73285](https://doi.org/10.13140/RG.2.2.34518.73285)

Projects: [COVID-19 Origin](#) · [Pandemics](#)

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Virginie Courtier-Orgogozo ·



Valentin Bruttel · Lounes Chikhi ·

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Roland Wiesendanger



Peter Daszak and Wuhan Institute of Virology in China's central Hubei province. Photo illustration: Soohee Cho for The Intercept; Getty Images



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## PETER DASZAK ANSWERS CRITICS AND DEFENDS CORONAVIRUS RESEARCH

“Scientists disagree over an issue where there’s no definitive proof,” said the EcoHealth Alliance president on the origins of the Covid-19 pandemic.



Sharon Lerner, Mara Hvistendahl













MARCH 11, 2022 3:53

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## Analysis

## Waiting for the truth: is reluctance in accepting an early origin hypothesis for SARS-CoV-2 delaying our understanding of viral emergence?

 Marta Canuti <sup>1</sup>,  Silvia Bianchi <sup>1, 2</sup>, Otto Kolbl <sup>3</sup>,  Sergei L Kosakovsky Pond <sup>4, 5</sup>,  Sudhir Kumar <sup>4, 5, 6</sup>,  Maria Gori <sup>1, 2</sup>,  Clara Fappani <sup>1, 2</sup>,  Daniela Colzani <sup>1, 2</sup>,  Elisa Borghi <sup>1, 2</sup>,  Gianvincenzo Zuccotti <sup>7, 8</sup>,  Mario C Raviglione <sup>9</sup>,  Elisabetta Tanzi <sup>1, 2</sup>,  Antonella Amendola <sup>1, 2</sup>

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