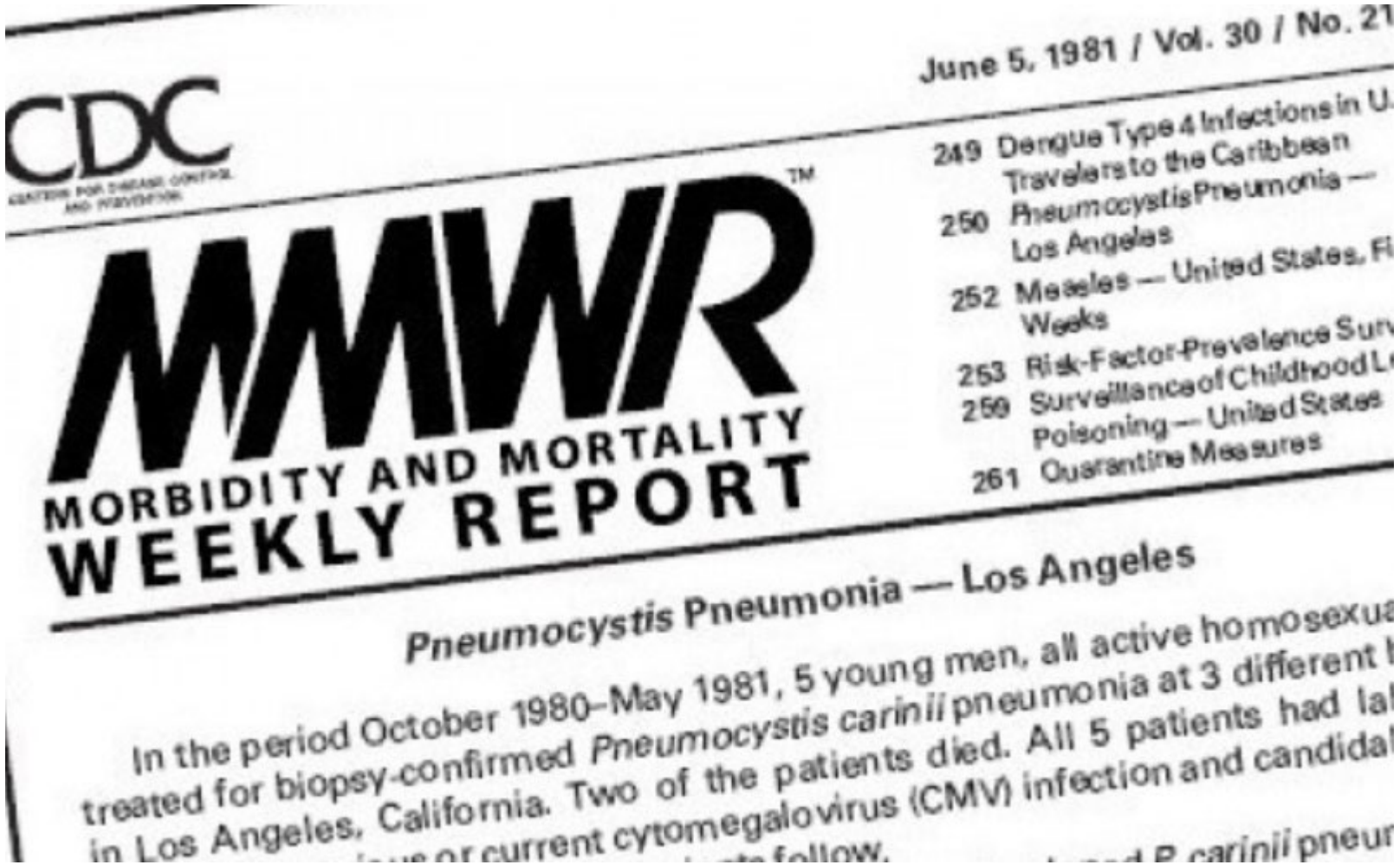
SIDA et Covid19/ASTEC-PSL

23/01/2024

Clement.Mettling@igh.cnrs.fr

1981



CDC

June 5, 1981 / Vol. 30 / No. 21

MMWR™

MORBIDITY AND MORTALITY
WEEKLY REPORT

***Pneumocystis* Pneumonia — Los Angeles**

In the period October 1980–May 1981, 5 young men, all active homosexua... treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different ... in Los Angeles, California. Two of the patients died. All 5 patients had la... ...or current cytomegalovirus (CMV) infection and candida... ...follow. ...*P. carinii* pneu...

(UCLA Health)

Charles Chamberland

Charles Chamberland vers 1880.

(1851-1908)

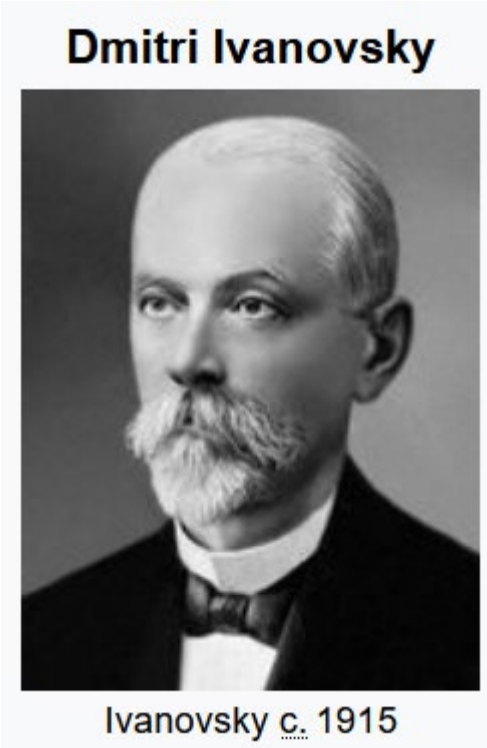
Composants d'un filtre Pasteur-Chamberland

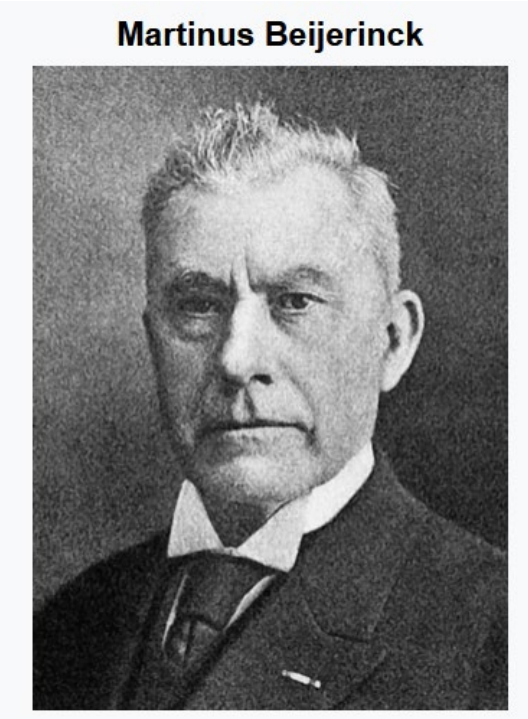
(wikipedia)

Élimine les microbes de l’eau de boisson
(fièvre thypoide à Paris en 1884)

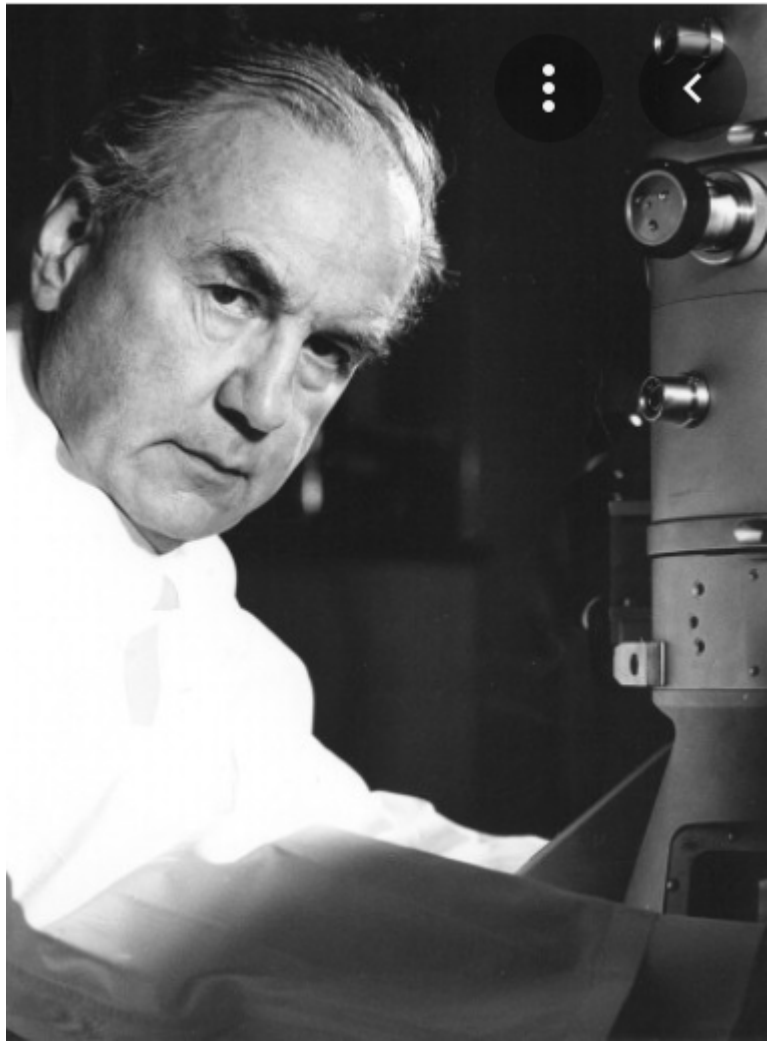
1898: premier virus (VMT)

(wikipedia)

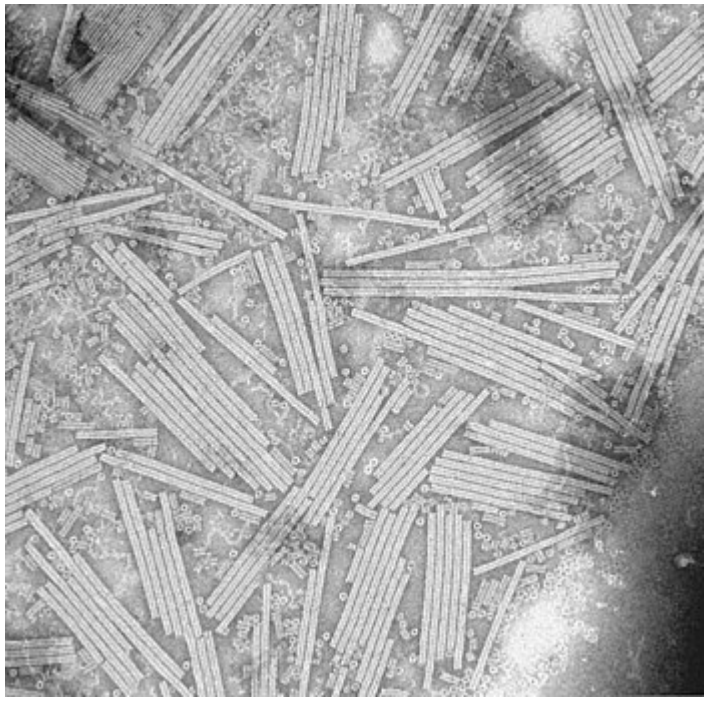




1939: les virus ne sont pas liquides



Helmut Ruska (1908-1973)

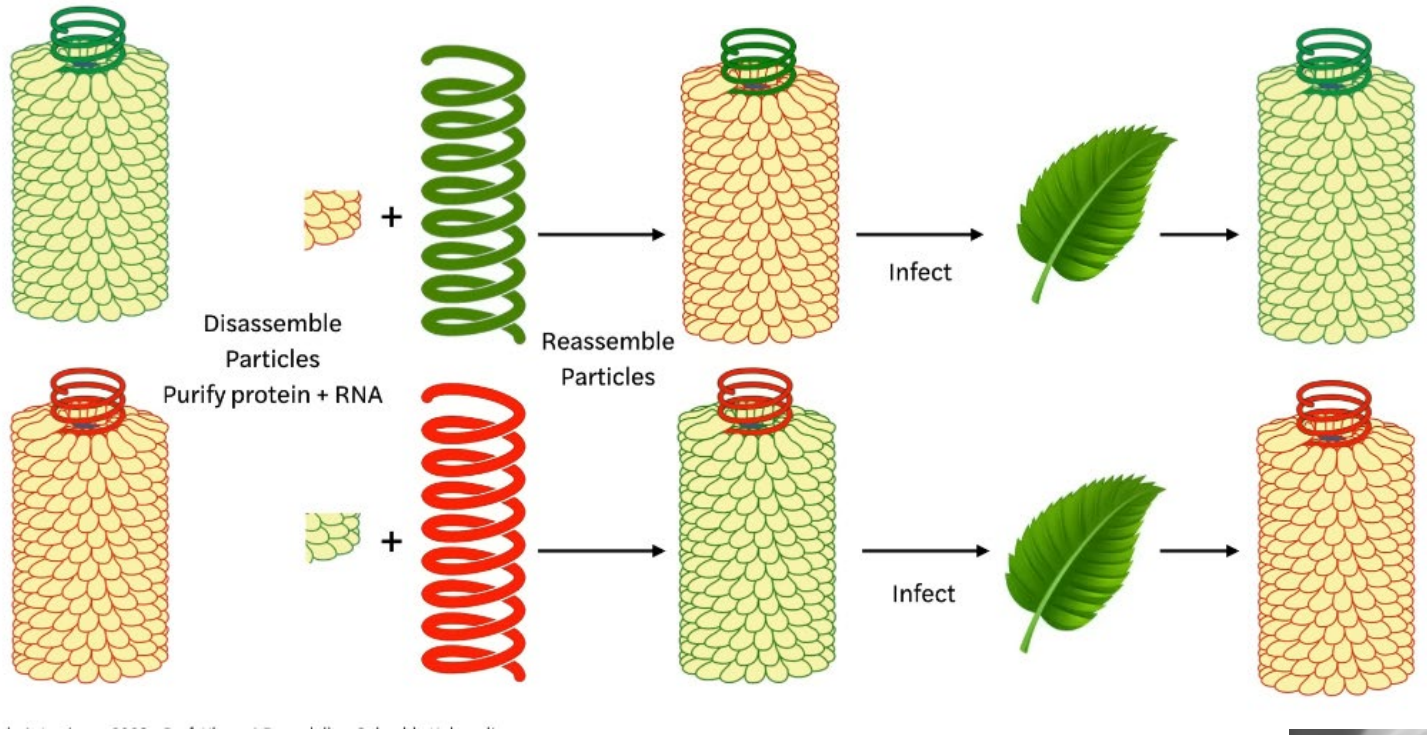


(wikipedia)

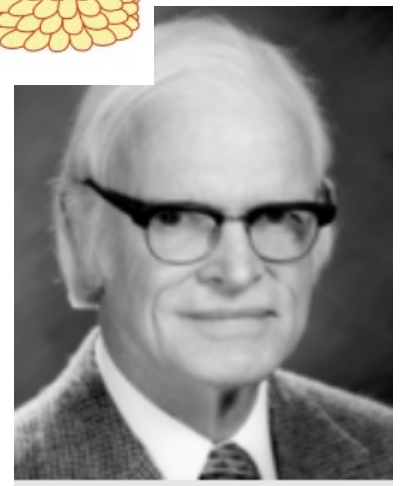
Bâtonnets de VMT vu au microscope électronique

(1910-1999)

1955



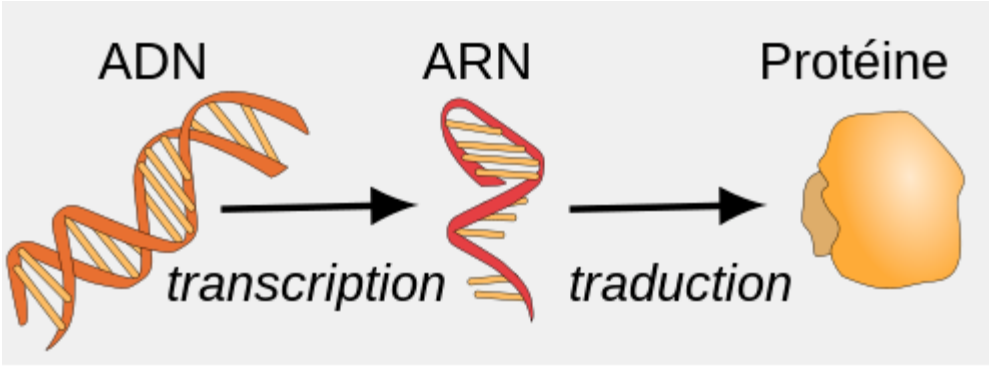
(www.youtube.com/@Microbe_tv)



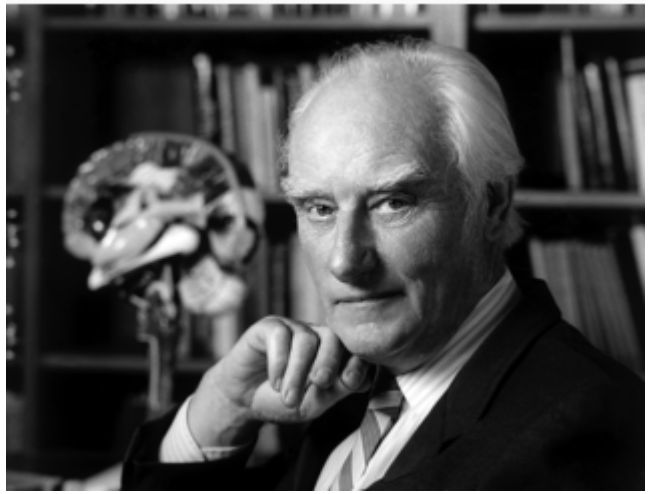
(Robley Cook Williams 1908-1995)

https://www.nasonline.org

1958
Dogme central de la biologie moléculaire



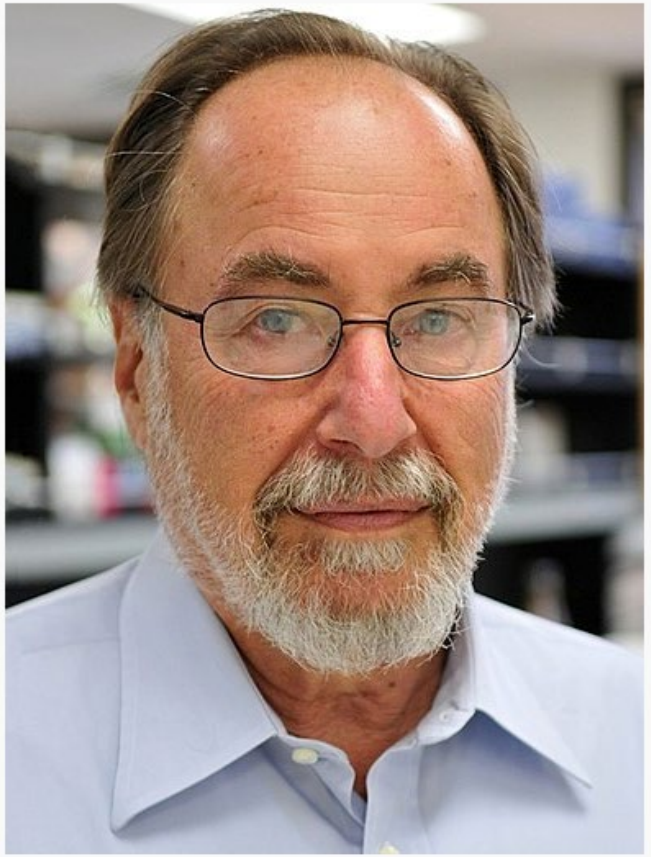
(wikipedia)



Francis Crick
(1916-2004)

1970: RTase

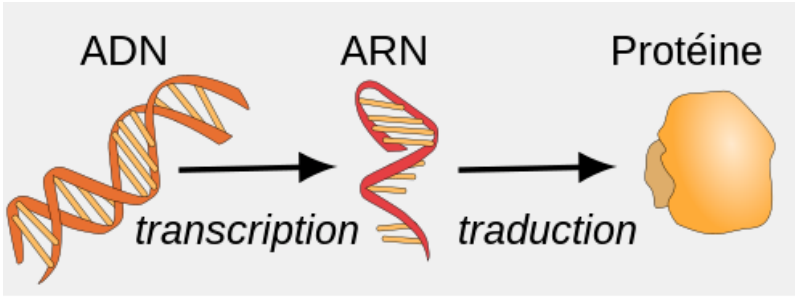
David Baltimore



Biographie

Naissance 7 mars 1938 (85 ans)

(wikipedia)



Howard Temin

Howard Temin en 1975

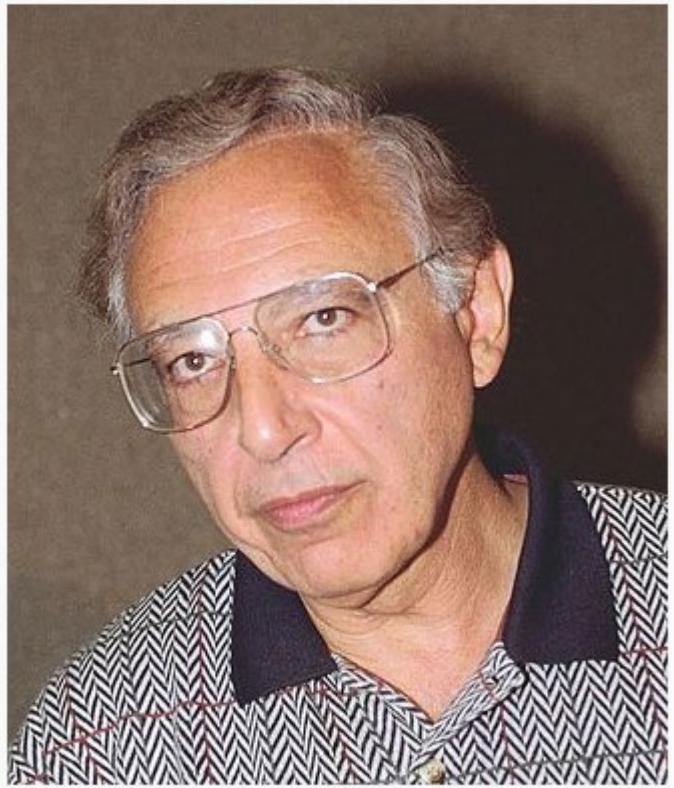
(1934-1994)

1975: prix Nobel

1980: HTLV-1

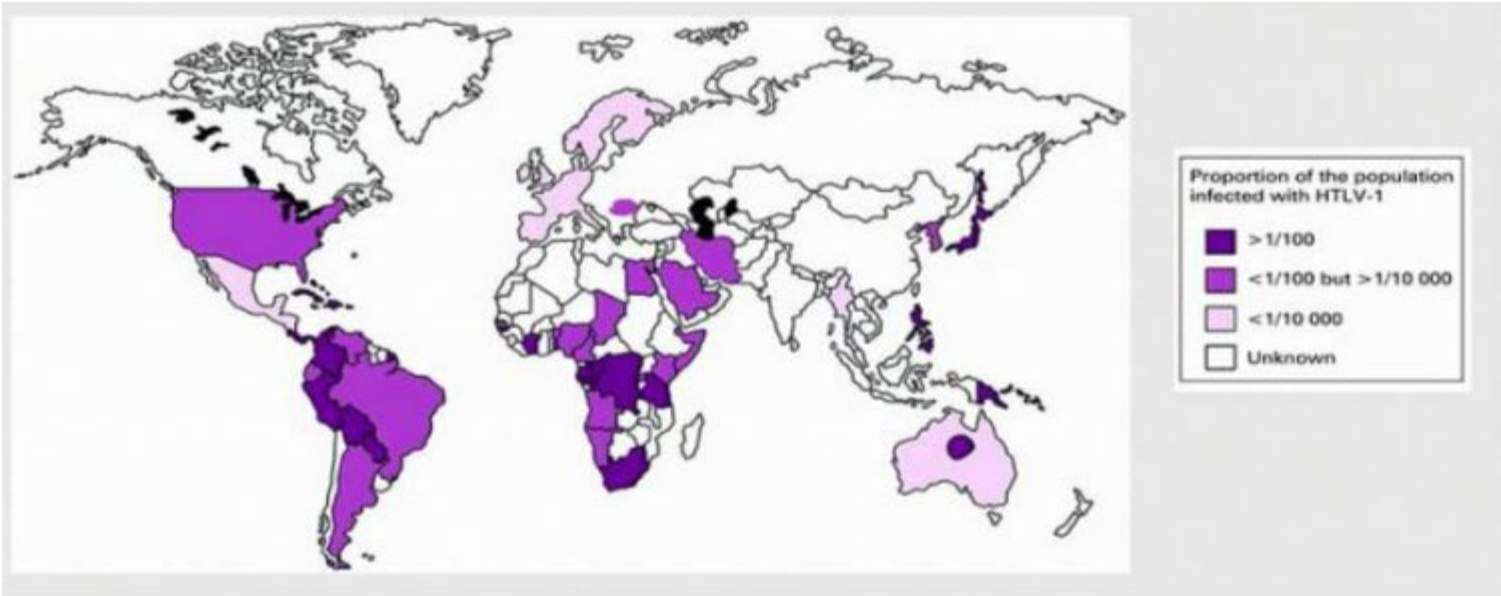
Premier rétrovirus humain

Robert Gallo



Robert C. Gallo en 1995

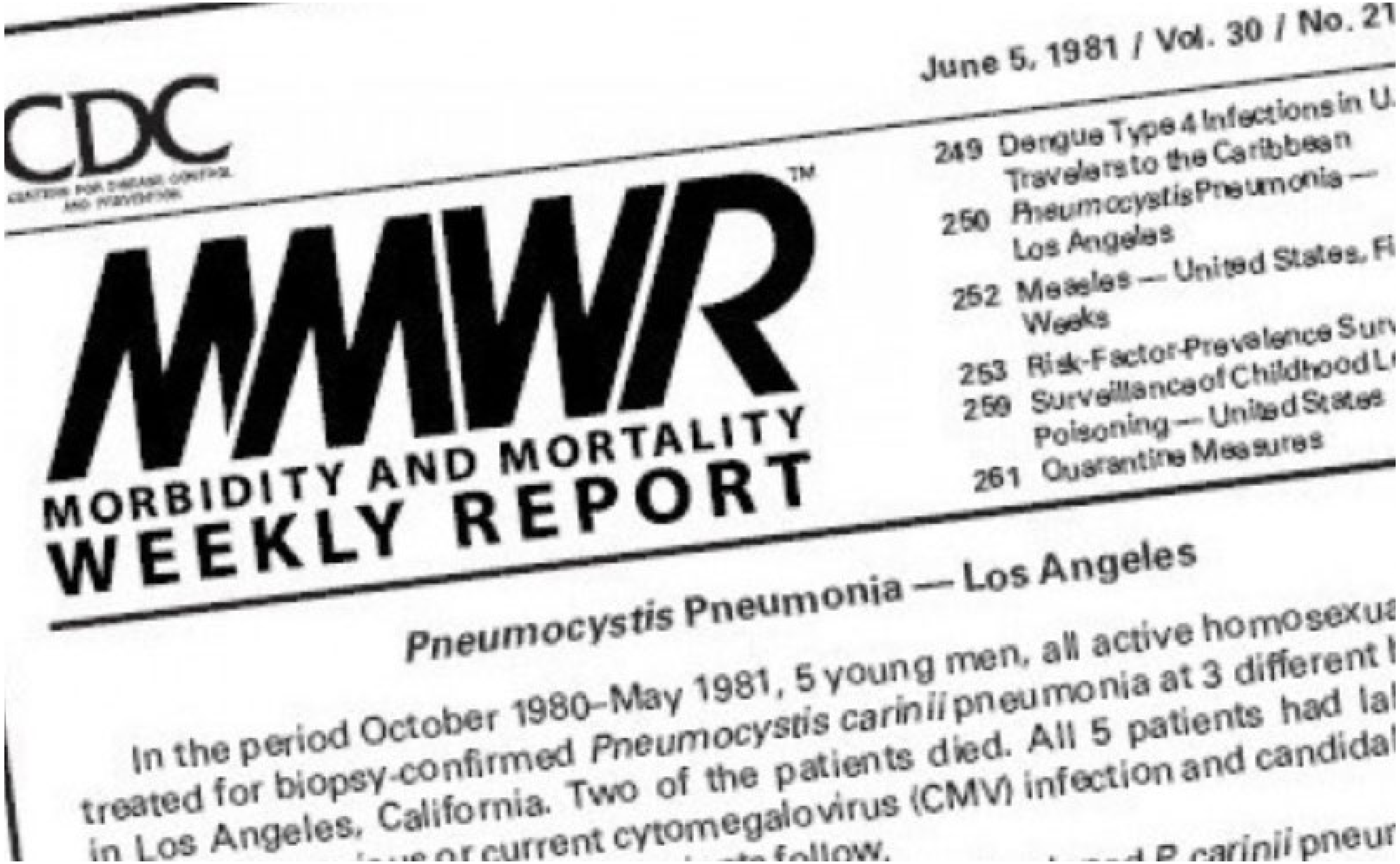
Naissance 23 mars 1937 (86 ans)



Prévalence dans le monde de l'infection HTLV-1

(www.sfm-microbiologie.org/)

1981


June 5, 1981 / Vol. 30 / No. 21

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

MMWR™
MORBIDITY AND MORTALITY
WEEKLY REPORT

Pneumocystis Pneumonia — Los Angeles

In the period October 1980–May 1981, 5 young men, all active homosexua
treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different h
in Los Angeles, California. Two of the patients died. All 5 patients had la
previous or current cytomegalovirus (CMV) infection and candidal
follow.
P. carinii pneu

(UCLA Health)

(wikipedia)

Willy Rozenbaum

(Hopital Bichat)

Françoise Brun-Vézinet

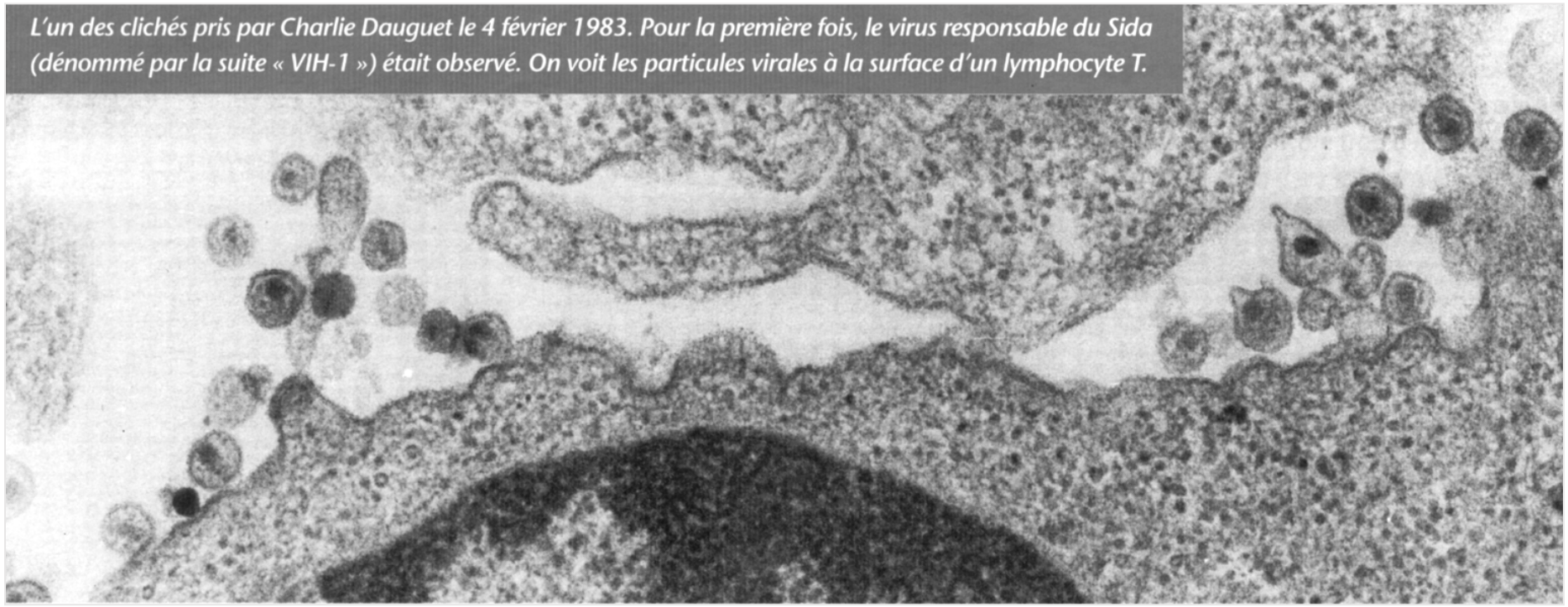
1983: LAV/VIH

L. Montagnier*, JC Chermann, F Barré-Sinoussi*

(Institut Pasteur)

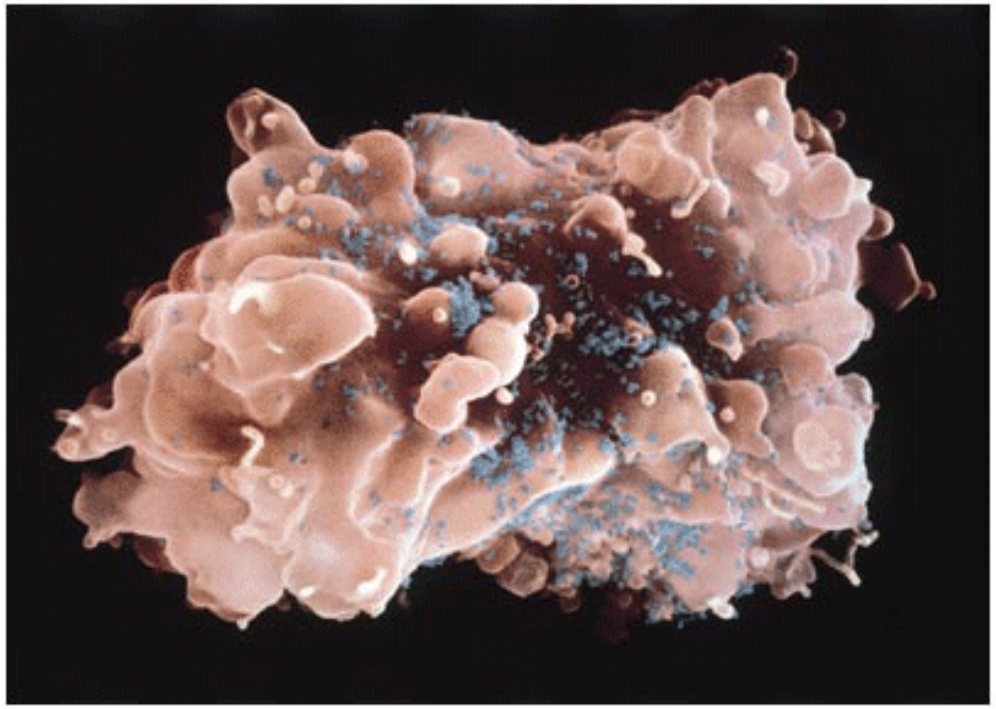
(*Prix Nobel 2008)

C. Dauguet

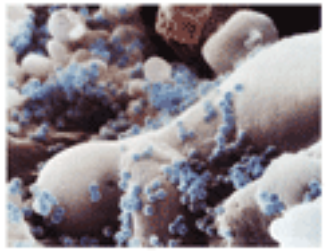


L'un des clichés pris par Charlie Dauguet le 4 février 1983. Pour la première fois, le virus responsable du Sida (dénommé par la suite « VIH-1 ») était observé. On voit les particules virales à la surface d'un lymphocyte T.

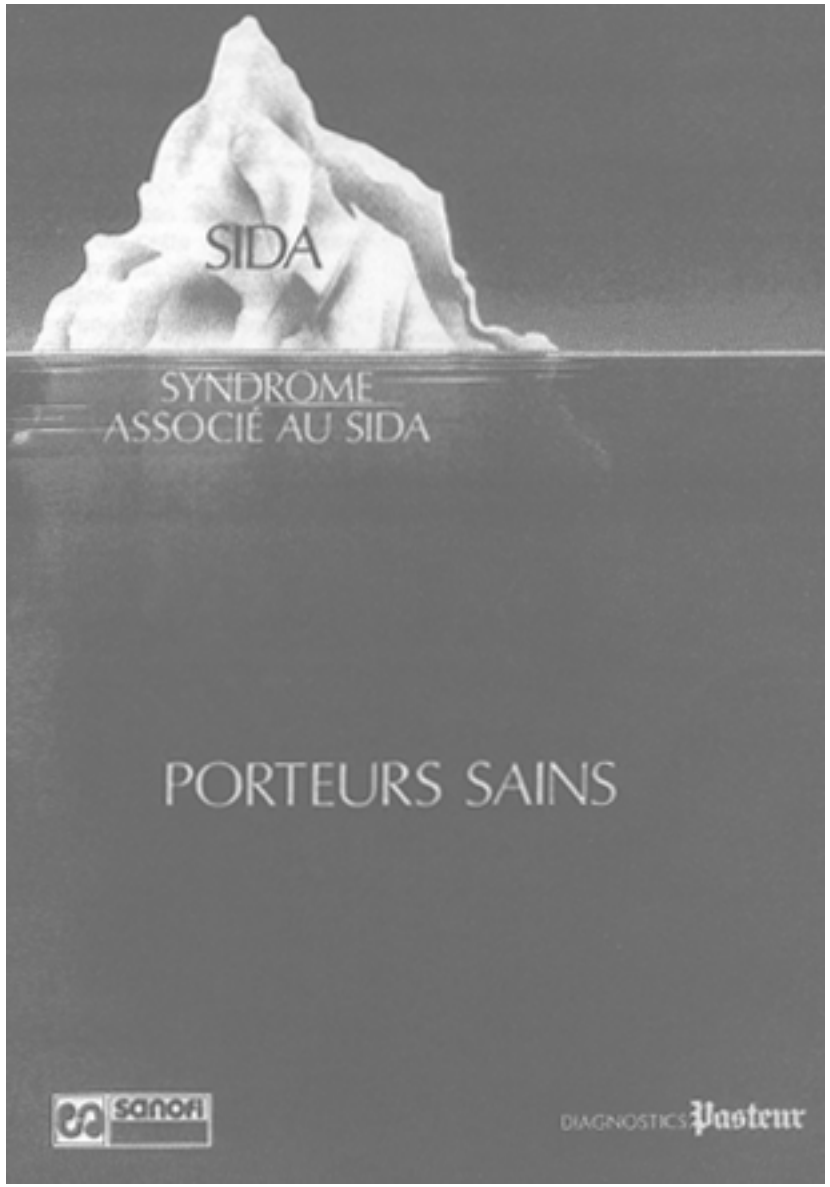
(Institut Pasteur)



Lymphocyte T infecté

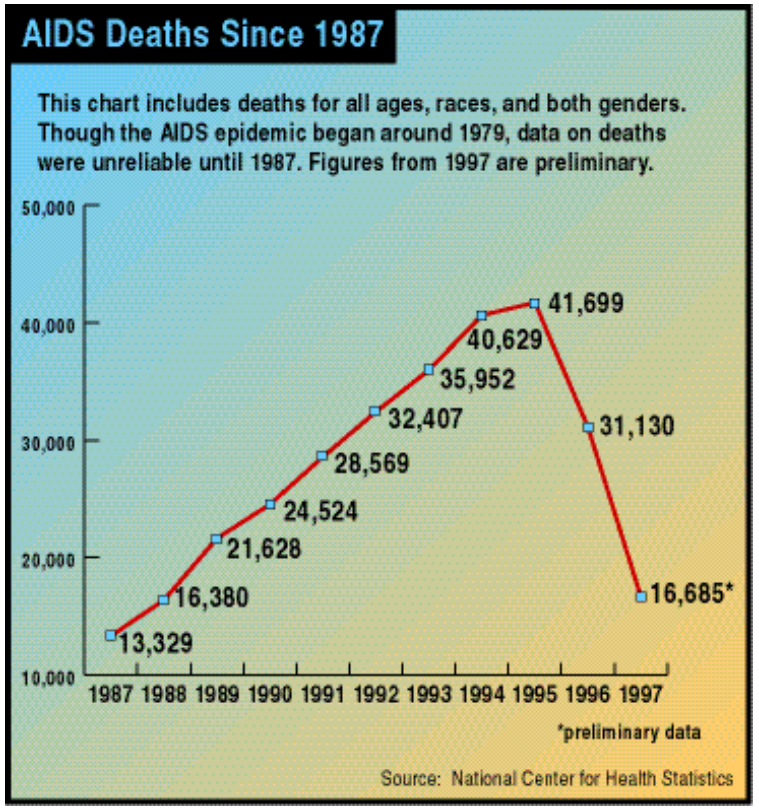


N Engl J Med 2003; 349:2283-2285
DOI: 10.1056/NEJMp038194

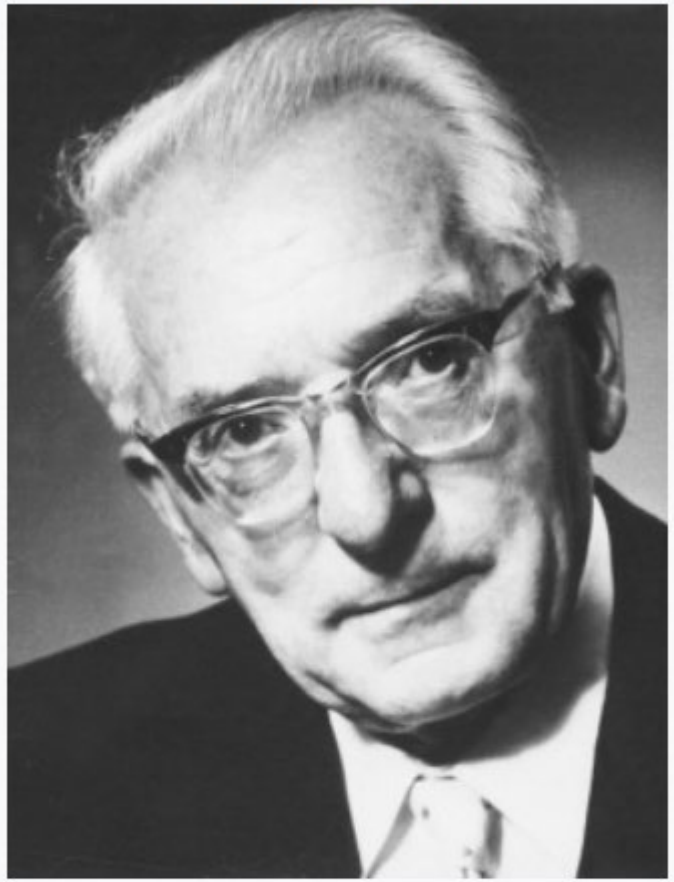

SIDA
SYNDROME
ASSOCIÉ AU SIDA
PORTEURS SAINS
sanofi
DIAGNOSTICS Pasteur

Mai 1985

1995: trithérapie



Jakob Segal



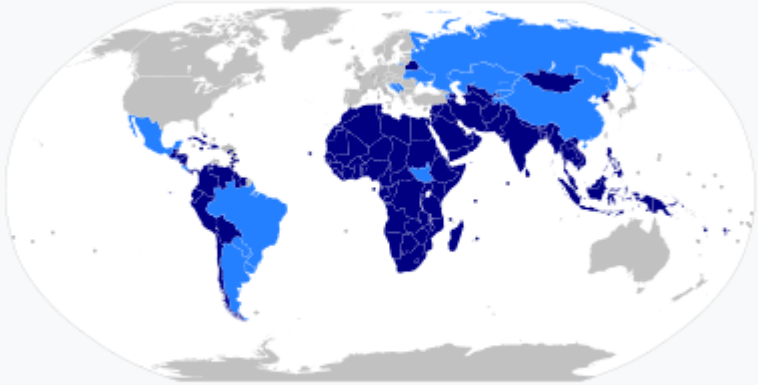
Born	17 April 1911 Saint Petersburg, Russian Empire
Died	30 September 1995 (aged 84) Berlin, Germany
Nationality	Soviet and German

Operation INFEKTION

Soviet Bloc Intelligence and Its AIDS Disinformation Campaign

Thomas Boghardt

Non-Aligned Movement

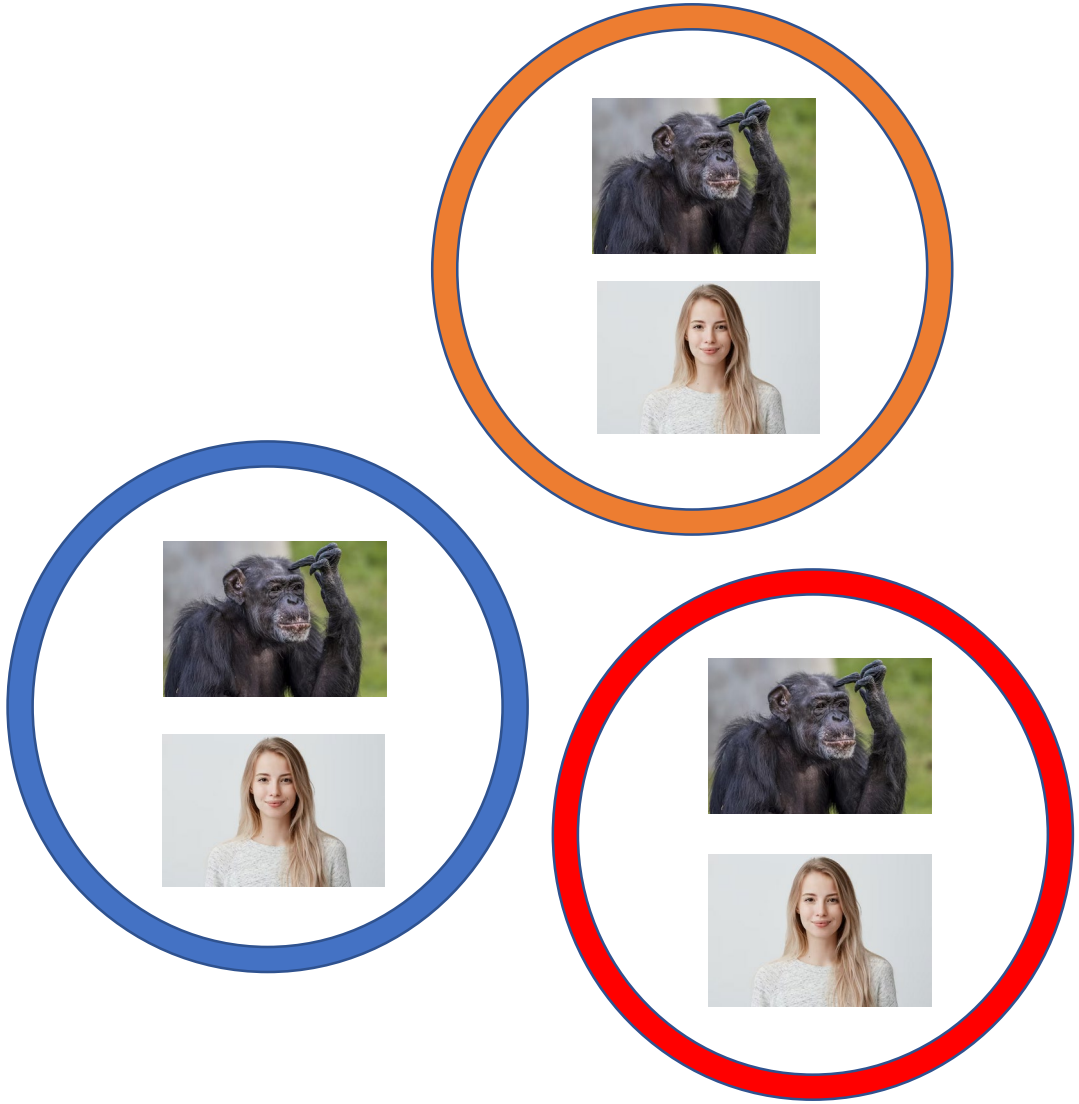


Current members of the Non-Aligned Movement. The light-blue colour denotes countries with observer-status.

Harare 1986

Mangabey enfumé

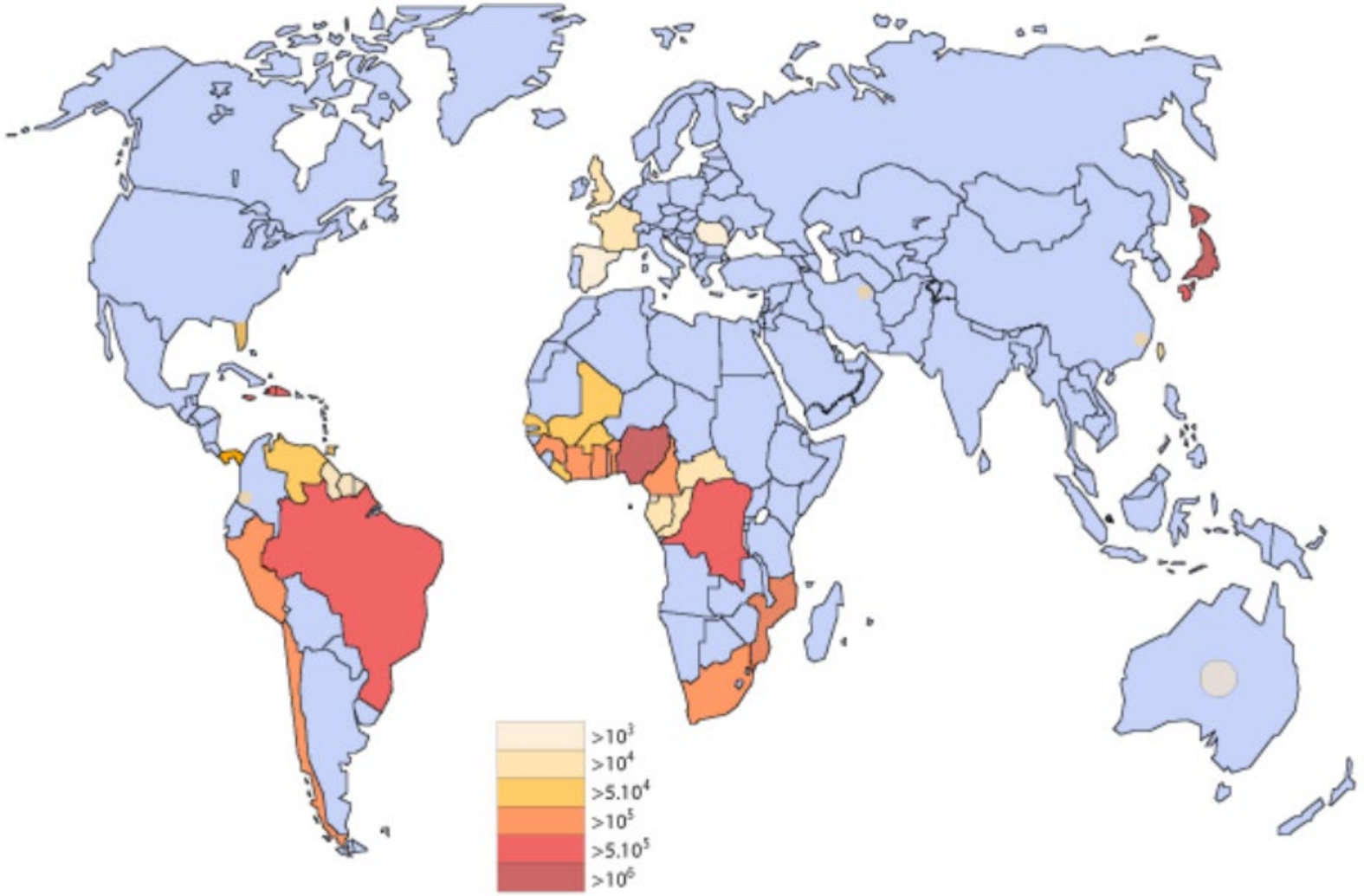
9 passages de l’animal à l’homme pour HIV2



?

(freepik.com)

Prévalence du HTLV I



Estimate of HTLV-1 infected carriers (A. Gessain and O. Cassar-2012)

(ViralZone)

1999: Marylin

(IRD)

Martine Peeters

(IRD)

Eric Delaporte

Origin of HIV-1 in the chimpanzee *Pan troglodytes troglodytes*

Feng Gao*, Elizabeth Bailes†, David L. Robertson‡, Yalu Chen*, Cynthia M. Rodenburg*, Scott F. Michael*§, Larry B. Cummins‖, Larry O. Arthur¶, Martine Peeters#, George M. Shaw*☆, Paul M. Sharp† & Beatrice H. Hahn*

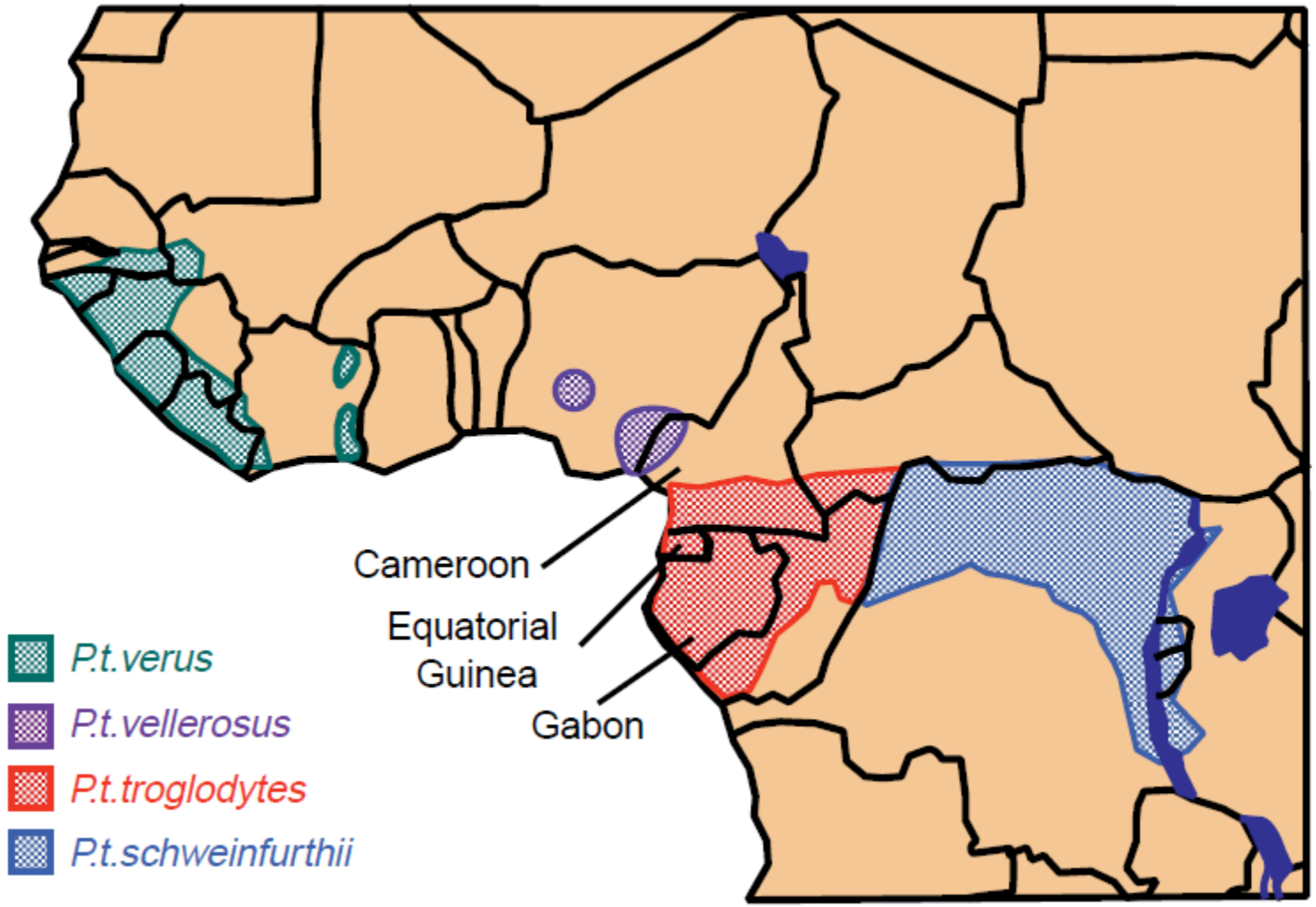
NATURE | VOL 397 | 4 FEBRUARY 1999

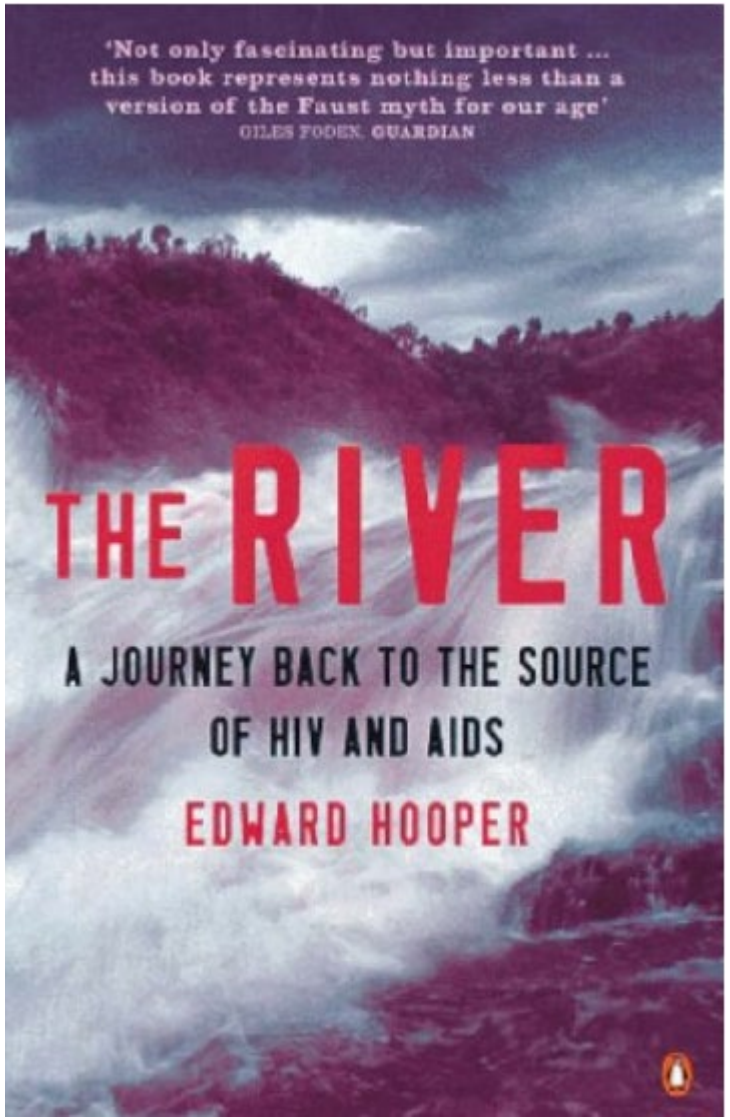
Beatrice Hahn

(Penn Med)

Paul Sharp

(wikipedia)


Cameroon
Equatorial Guinea
Gabon
P.t.verus
P.t.vellerosus
P.t.troglodytes
P.t.schweinfurthii



La théorie OPV

2000: congrès académie royale de Londres. (Robin Weiss) : absence de trace de HIV dans le lot de vaccin

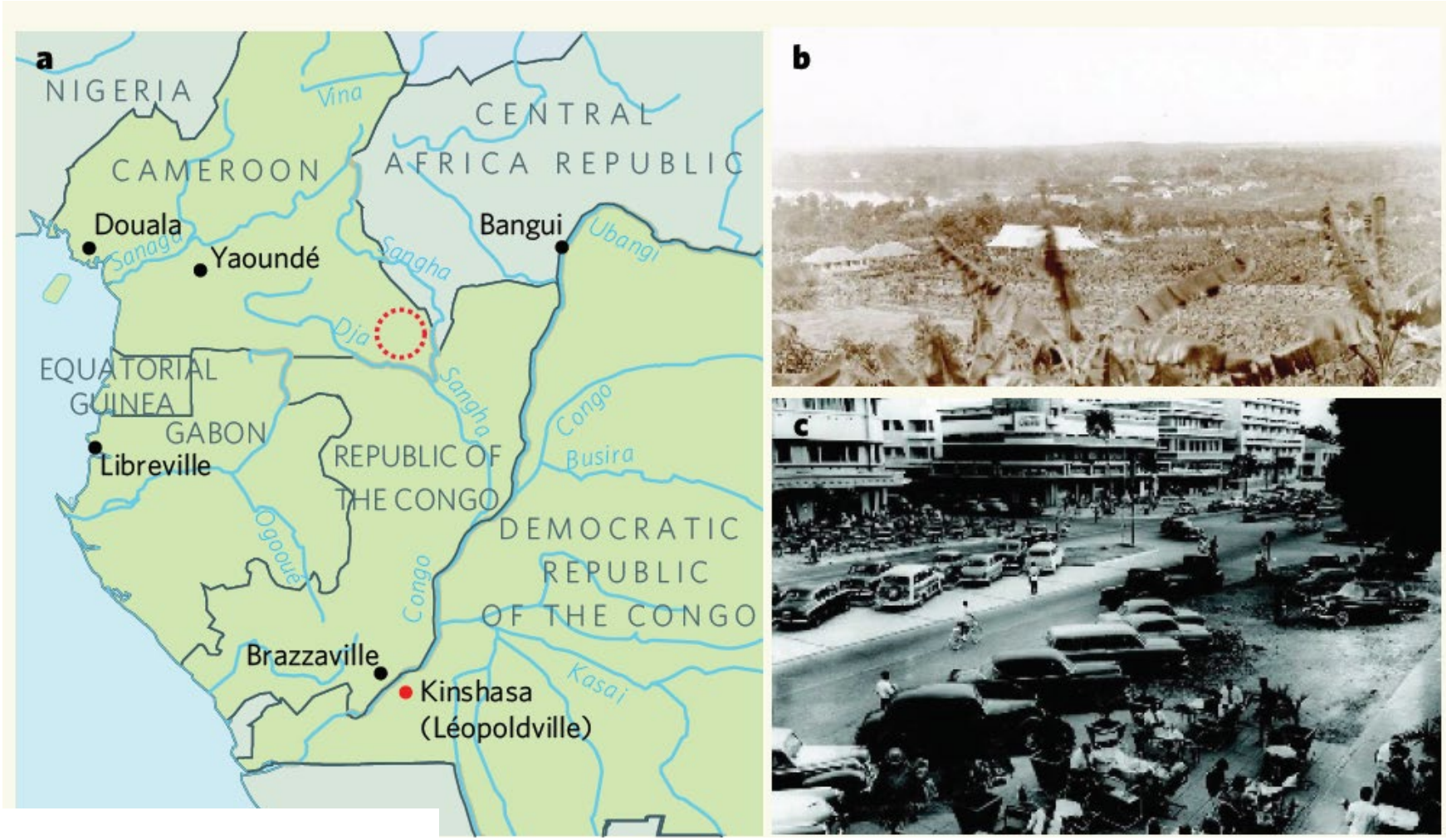
2001: Paabo : absence d'ADN de chimpanzee.

Infection les plus anciennes connues :

a) le plasma prélevé chez un homme adulte à Leopoldville (Kinshasa) en 1959.

b) un adolescent mort à St Louis en 1969

c) un marin Norvegien mort en 1976



AIDS

Prehistory of HIV-1

Paul M. Sharp and Beatrice H. Hahn

NATURE|Vol 455|2 October 2008

Science. 2014 October 3; 346(6205): 56–61. doi:10.1126/science.1256739.

The early spread and epidemic ignition of HIV-1 in human populations

Nuno R. Faria[1,2], **Andrew Rambaut**[3,4,5], **Marc A. Suchard**[6,7], **Guy Baele**[2], **Trevor Bedford**[8], **Melissa J. Ward**[3], **Andrew J. Tatem**[4,9], **João D. Sousa**[2,10], **Nimalan Arinaminpathy**[1], **Jacques Pépin**[11], **David Posada**[12], **Martine Peeters**[13], **Oliver G. Pybus**[1,*,†], and **Philippe Lemey**[2,*,†]

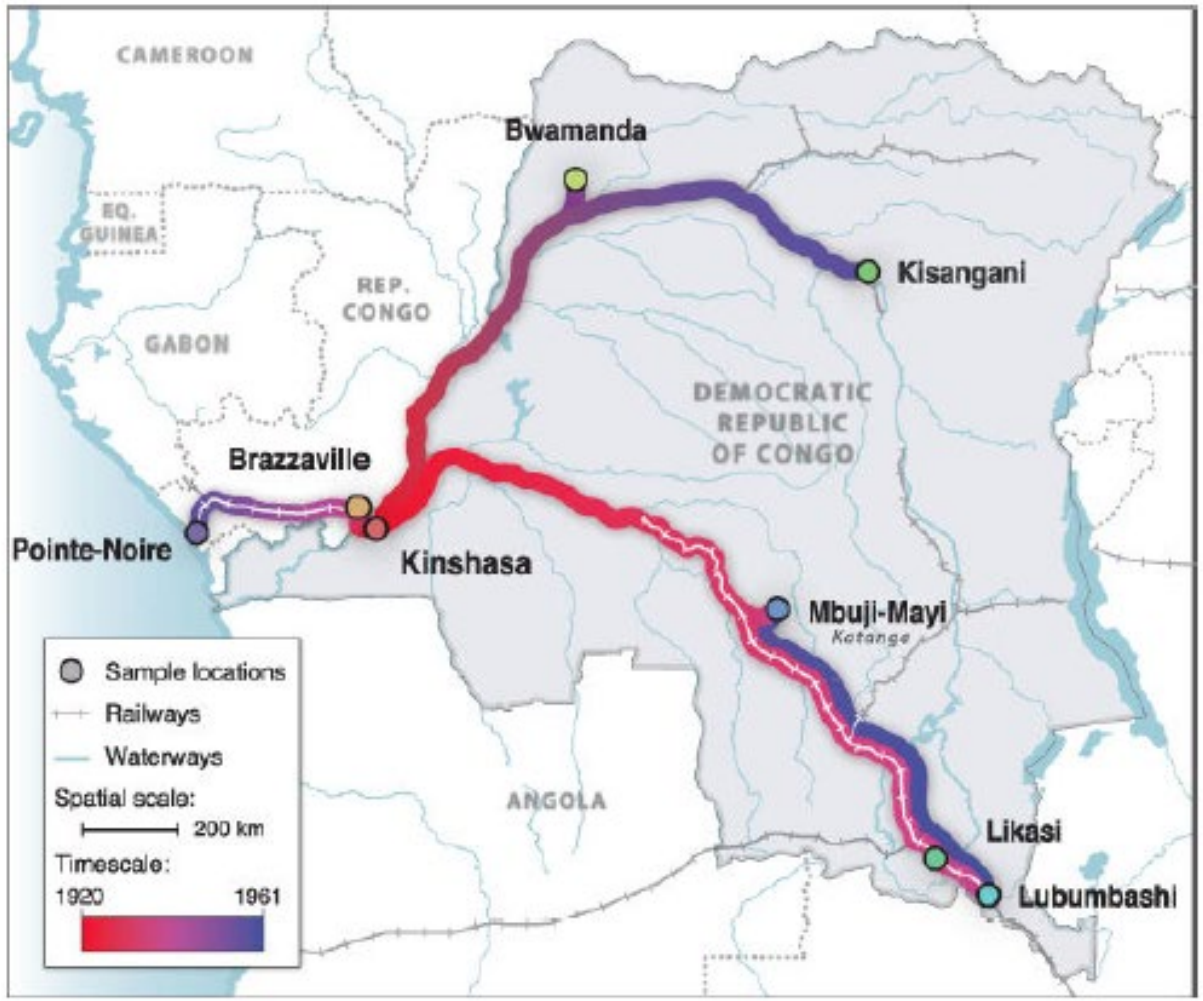
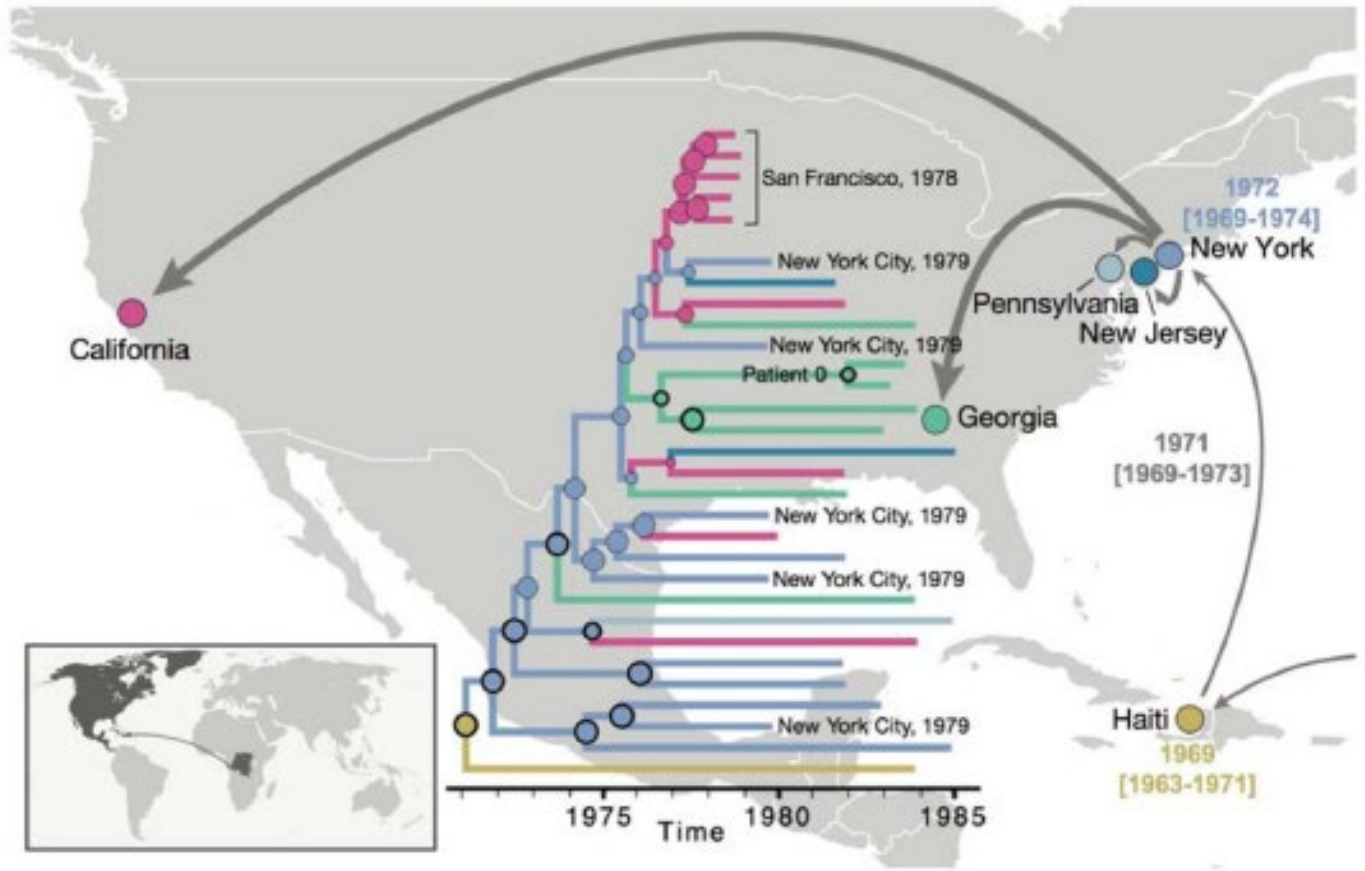


Fig. 2. Spatial dynamics of HIV-1 group M spread

(University of Arizona)

Michael Worobey



Nature. 2016 November 03; 539(7627): 98–101. doi:10.1038/nature19827.

Figure 2. The early patterns of HIV-1 subtype B spread in the Americas

1970s and 'Patient 0' HIV-1 genomes illuminate early HIV/AIDS history in North America

Michael Worobey[1,*], Thomas D. Watts[1], Richard A. McKay[2,*], Marc A. Suchard[3], Timothy Granade[4], Dirk E. Teuwen[5], Beryl A. Koblin[6], Walid Heneine[4], Philippe Lemey[7], and Harold W. Jaffe[4]

Facteurs favorisant l’épidémie

a) Pression démographique

b) Transports modernes

c) Changement culturel (sexualité, drogues, transfusion sanguine)

d) Origine iatrogène: lutte sanitaire (trypanosomiase…)

Le SIDA aujourd'hui

40 M séropositifs dans le monde

180 000 séropositifs en France dont ~ 20 000 qui ne le savent pas

5000 nouvelles contamination par an (dont ¼ à un stade avancé)

¼ des jeunes 15-25 ans pensent qu'on peut se contaminer en embrassant

(chiffres SIDACTION)

Les coronavirus et l’espèce humaine:

1890 : OC43
2003 : SARS
2009 : MERS

Exemples de zoonoses :

SARS
Grippe
Sida

Fuite d’un laboratoire:

Hopital de Birmingham (wikipedia)

1967 : virus de Marbourg
1977 : dernier cas de variole (Birmingham)
1977 : grippe russe
Depuis 2003 : 4 cas pour SARSCov1

| PNAS | February 15, 2005 | vol. 102 | no. 7

2005: le réservoir animal du SarsCov1

Civette palmiste (wikipedia)

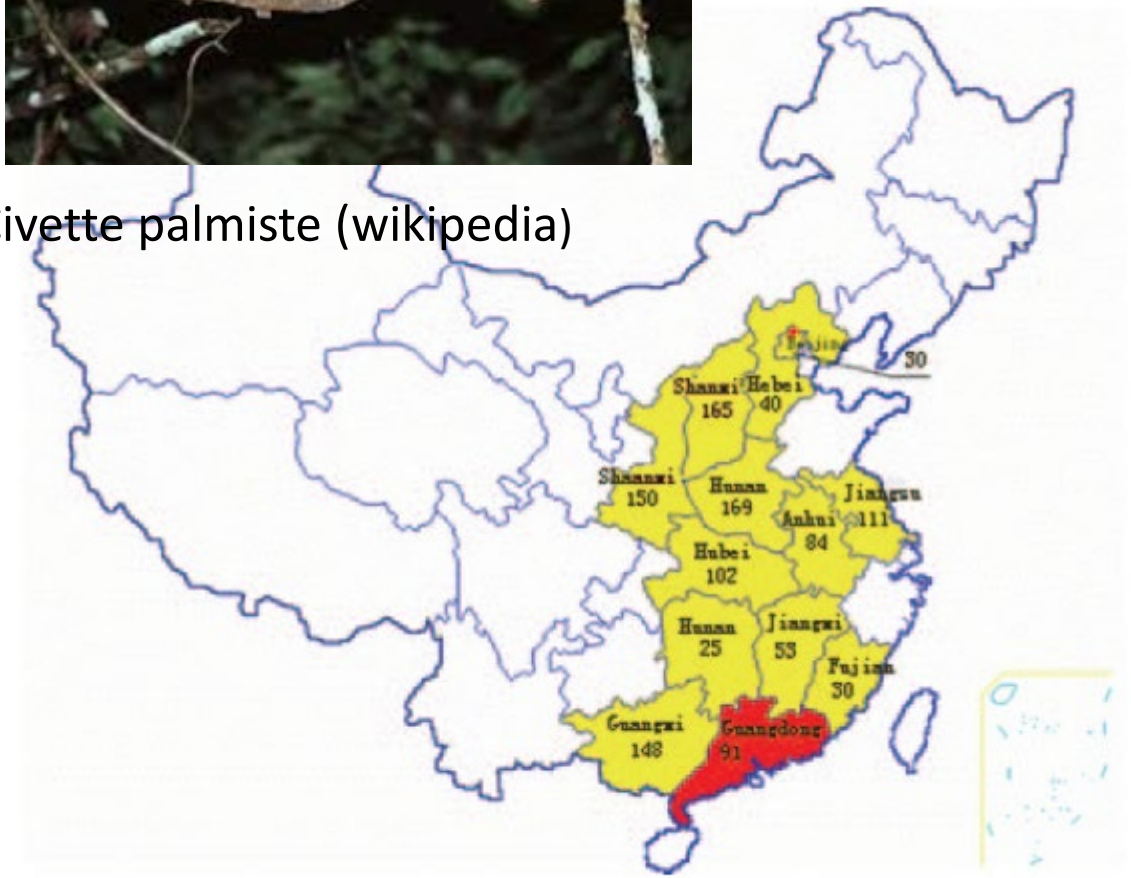
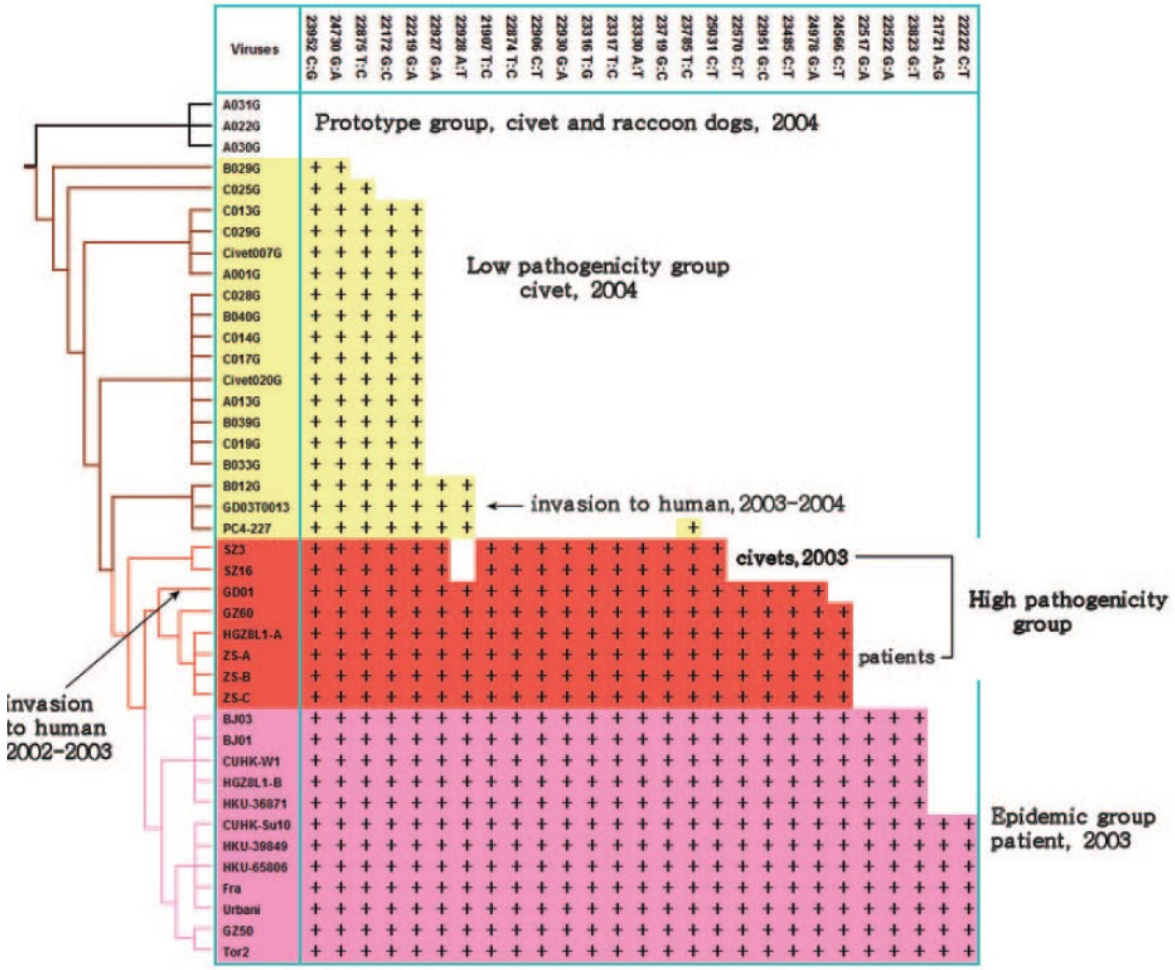


FIG. 1. Geographic locations and numbers of palm civets sampled in China in 2004.



JOURNAL OF VIROLOGY, Sept. 2005, p. 11892–11900
0022-538X/05/$08.00+0 doi:10.1128/JVI.79.18.11892–11900.2005

HECTOR RETAMAL VIA AFP

Sur les origines du Covid, l'hypothèse de la fuite de laboratoire relancée par l'OMS (Photo aérienne du laboratoire P4 de Wuhan où la fuite du virus aurait pu avoir lieu. Par Hector RETAMAL / AFP)

Shi Zheng-Li

Une expérience « gain de fonction » conduit à un moratoire

There are amendments to this paper

A SARS-like cluster of circulating bat coronaviruses shows potential for human emergence

Vineet D Menachery[1], Boyd L Yount Jr[1], Kari Debbink[1,2], Sudhakar Agnihothram[3], Lisa E Gralinski[1], Jessica A Plante[1], Rachel L Graham[1], Trevor Scobey[1], Xing-Yi Ge[4], Eric F Donaldson[1], Scott H Randell[5,6], Antonio Lanzavecchia[7], Wayne A Marasco[8,9], Zhengli-Li Shi[4] & Ralph S Baric[1,2]

nature medicine

VOLUME 21 | NUMBER 12 | DECEMBER 2015 NATURE MEDICINE

9 résidents en zone rurale sur 1600 testés positifs aux anticorps anti SARS-Cov1 (juillet 2019)

Human-animal interactions and bat coronavirus spillover potential among rural residents in Southern China

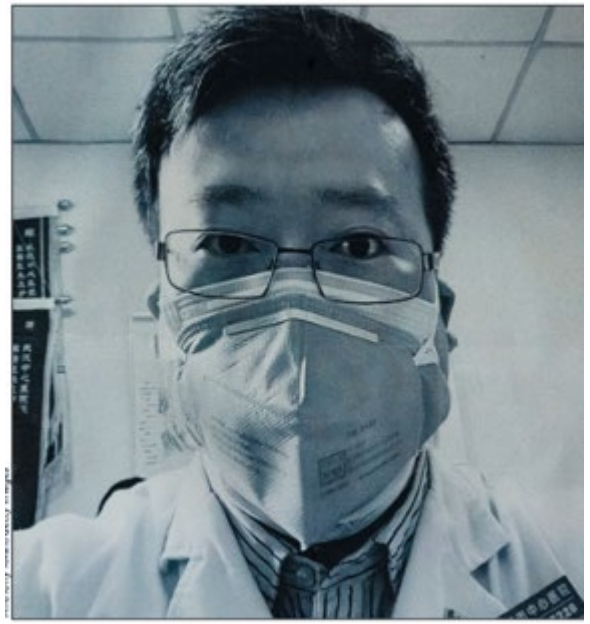
Hongying Li [a,f], Emma Mendelsohn [a], Chen Zong [b], Wei Zhang [c], Emily Hagan [a], Ning Wang [c], Shiyue Li [d], Hong Yan [d], Huimin Huang [d], Guangjian Zhu [a], Noam Ross [a], Aleksei Chmura [a], Philip Terry [e], Mark Fielder [f], Maureen Miller [g], Zhengli Shi [c,*], Peter Daszak [a,**]

Biosafety and Health 1 (2019) 84–90

Peter Daszak, president of the EcoHealth Alliance

Statement in support of the scientists, public health professionals, and medical professionals of China combatting COVID-19

Charles Calisher, Dennis Carroll, Rita Colwell, Ronald B Corley, Peter Daszak, Christian Drosten, Luis Enjuanes, Jeremy Farrar, Hume Field, Josie Golding, Alexander Gorbalenya, Bart Haagmans, James M Hughes, William B Karesh, Gerald T Keusch, Sai Kit Lam, Juan Lubroth, John S Mackenzie, Larry Madoff, Jonna Mazet, Peter Palese, Stanley Perlman, Leo Poon, Bernard Roizman, Linda Saif, Kanta Subbarao, Mike Turner
COVID19statement@gmail.com



Li Wenliang

Peter Daszak, president of the EcoHealth Alliance

« Nous condamnons fermement les théories conspirationistes suggérant que la Covid19 n'a pas une origine naturelle »

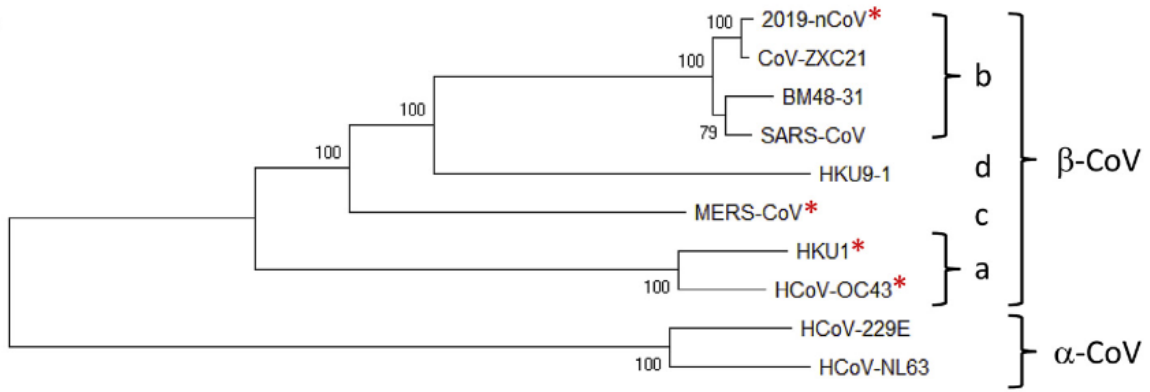
Lancet 19 février 2020

The spike glycoprotein of the new coronavirus 2019-nCoV contains a furin-like cleavage site absent in CoV of the same clade

B. Coutard[a], C. Valle[b], X. de Lamballerie[a], B. Canard[b], N.G. Seidah[c], E. Decroly[b,*]

[a] *Unité des Virus Émergents (UVE: Aix-Marseille Univ – IRD 190 – Inserm 1207 – IHU Méditerranée Infection), Marseille, France*
[b] *Aix Marseille Université, CNRS, AFMB UMR 7257, Marseille, France*
[c] *Laboratory of Biochemical Neuroendocrinology, Montreal Clinical Research Institute (IRCM, Affiliated to the University of Montreal), 110 Pine Ave West, Montreal, QC, H2W1R7, Canada*

A



Virus	Envelope Protein	Cleavage site
HIV	Gp160	VQR**EKR**↓**AV**
Influenza Virus H5	HA	**RKRKKR**↓**GL**
Avian H5N1 A/HK/98	HA	**RERKRKKR**↓**GL**
Avian H5N1 TKY/ENG	HA	**NTPQRKKR**↓**GL**
Human CMV	gB	**HKRTKR**↓**ST**
Human RSV	F protein	**KKRKRR**↓**FL**
Yellow Fever Virus	PrM	SR**RSRR**↓**AI**
Zika Virus	PrM	AR**RSRR**↓**AV**
Ebola virus	GP	GR**RTRR**↓**EA**
2019-nCoV (S1/S2) site	Spike Protein	TNSP**RRAR**↓**SV**

B

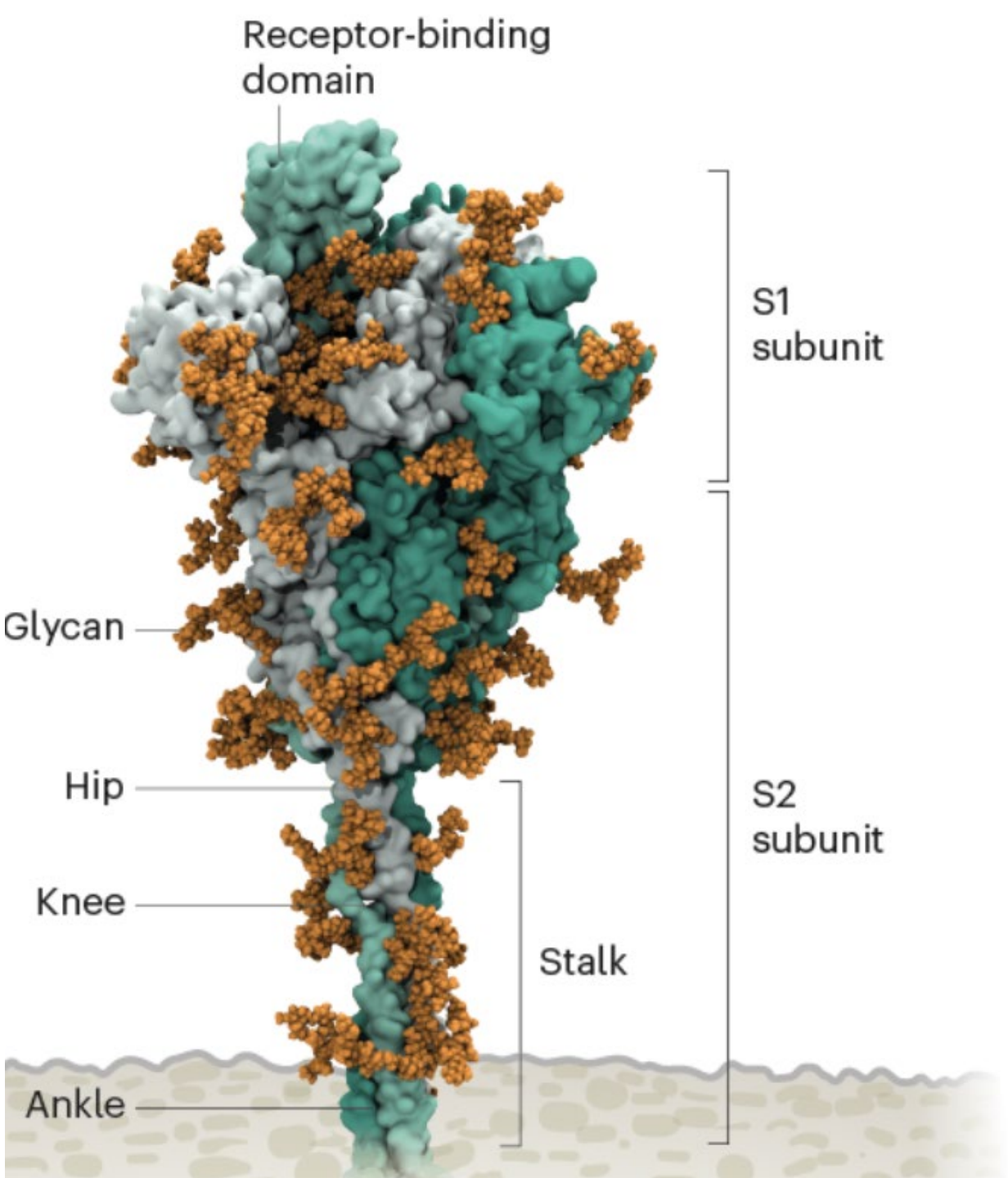
```
651 - T   A   S   I   L                 R ↓ S   T   G   Q   K - 661   CoV-ZXC21
    ACG GCT TCT ATA TTA --- --- --- --- CGT AGT ACA GGC CAG AAA

    ACT CAG ACT AAT TCT CCT CGG CGG GCA CGT AGT GTA GCT AGT CAA
676 - T   Q   T   N   S   P   R   R   A   R ↓ S   V   A   S   Q - 690   2019-nCoV
```

EL PAÍS

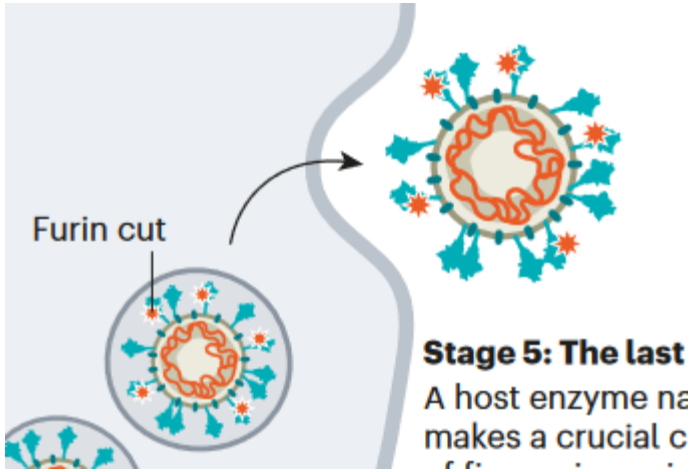
CORONAVIRUS

ccu cgg cgg gca
The 12 letters that changed the world

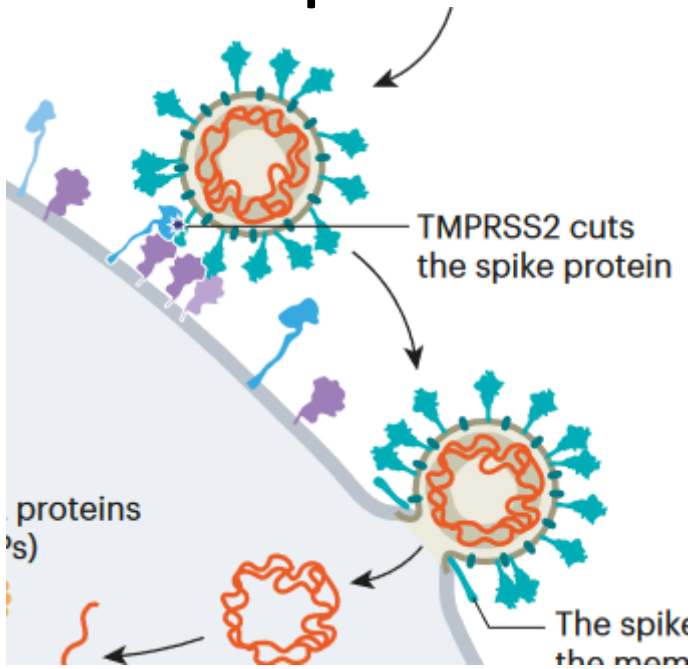


La spicule a 2 sous-unités

Le site original de clivage à la furin n’est pas optimal: Ceux des variants alpha et delta sont plus efficaces



sortie



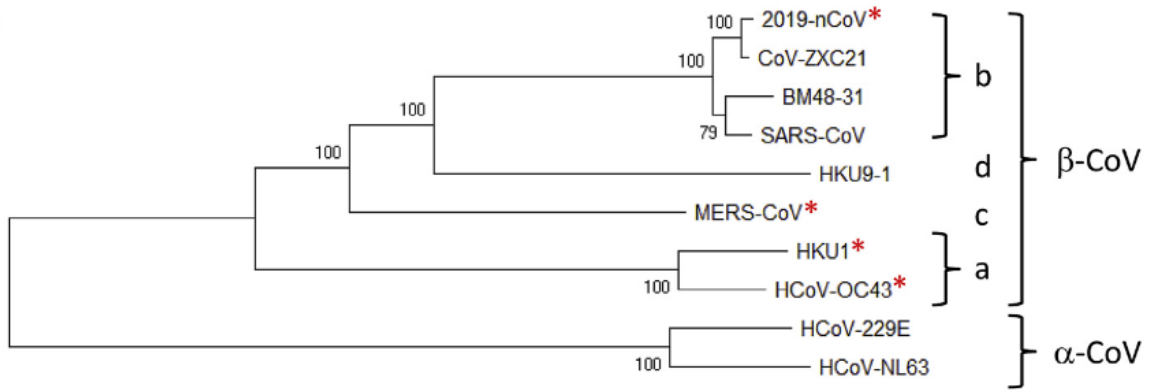
entrée

The spike glycoprotein of the new coronavirus 2019-nCoV contains a furin-like cleavage site absent in CoV of the same clade

B. Coutard[a], C. Valle[b], X. de Lamballerie[a], B. Canard[b], N.G. Seidah[c], E. Decroly[b,*]

[a] *Unité des Virus Émergents (UVE: Aix-Marseille Univ – IRD 190 – Inserm 1207 – IHU Méditerranée Infection), Marseille, France*
[b] *Aix Marseille Université, CNRS, AFMB UMR 7257, Marseille, France*
[c] *Laboratory of Biochemical Neuroendocrinology, Montreal Clinical Research Institute (IRCM, Affiliated to the University of Montreal), 110 Pine Ave West, Montreal, QC, H2W1R7, Canada*

A



Virus	Envelope Protein	Cleavage site
HIV	Gp160	VQ**R**E**KR**↓A**V**
Influenza Virus H5	HA	**R**K**R**K**KR**↓G**L**
Avian H5N1 A/HK/98	HA	**R**E**R**K**R**K**KR**↓G**L**
Avian H5N1 TKY/ENG	HA	**NTPQR**K**KR**↓G**L**
Human CMV	gB	**H**K**R**T**KR**↓S**T**
Human RSV	F protein	**KKRKRR**↓F**L**
Yellow Fever Virus	PrM	S**R**S**RR**↓A**I**
Zika Virus	PrM	A**R**S**RR**↓A**V**
Ebola virus	GP	G**R**T**RR**↓E**A**
2019-nCoV (S1/S2) site	Spike Protein	TNSP**R**RA**R**↓S**V**

B

```
651 - T   A   S   I   L                 R ↓ S   T   G   Q   K - 661   CoV-ZXC21
    ACG GCT TCT ATA TTA --- --- --- --- CGT AGT ACA GGC CAG AAA

    ACT CAG ACT AAT TCT CCT CGG CGG GCA CGT AGT GTA GCT AGT CAA
676 - T   Q   T   N   S   P   R   R   A   R ↓ S   V   A   S   Q - 690   2019-nCoV
```

Une publication scientifique qui discute des 2 hypothèses et argumente en faveur de la zoonose…

correspondence

Check for updates

The proximal origin of SARS-CoV-2

Kristian G. Andersen, Scripps Research

Kristian G. Andersen[1,2]✉, Andrew Rambaut[3], W. Ian Lipkin[4], Edward C. Holmes[5] and Robert F. Garry[6,7]

[1]*Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA, USA.* [2]*Scripps Research Translational Institute, La Jolla, CA, USA.* [3]*Institute of Evolutionary Biology, University of Edinburgh, Edinburgh, UK.* [4]*Center for Infection and Immunity, Mailman School of Public Health of Columbia University, New York, NY, USA.* [5]*Marie Bashir Institute for Infectious Diseases and Biosecurity, School of Life and Environmental Sciences and School of Medical Sciences, The University of Sydney, Sydney, Australia.* [6]*Tulane University, School of Medicine, Department of Microbiology and Immunology, New Orleans, LA, USA.* [7]*Zalgen Labs, Germantown, MD, USA.*
✉*e-mail:* andersen@scripps.edu

NATURE MEDICINE | VOL 26 | APRIL 2020 | 450–455 |

…se retrouve être le centre d’une enquête du sénat américain.

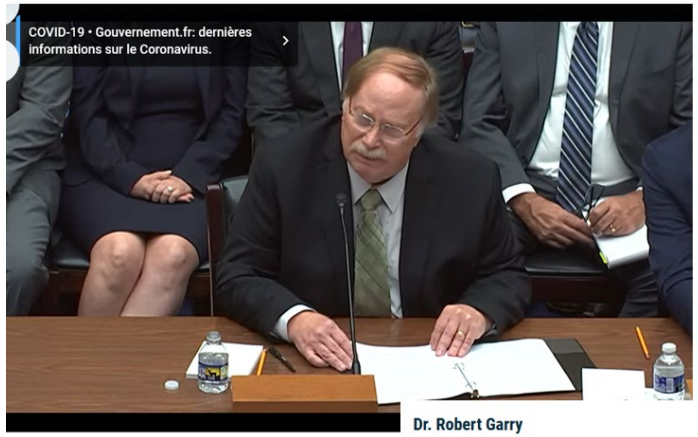
Hearing

Hearing Date: July 11, 2023 10:00 am | 2154 Rayburn House Office Building

Investigating the Proximal Origin of a Cover Up

Subject Investigating the Proximal Origin of a Cover Up

Date July 11, 2023



Dr. Robert Garry

Professor, Tulane University School of Medicine

Brad Wenstrup

Dr. Kristian Andersen

Professor, Scripps Research

L’OMS ouvre une enquête

WHO-convened Global Study of Origins of SARS-CoV-2:
China Part

Joint WHO-China Study
14 January-10 February 2021

Joint Report

Zoonose: très probable
Fuite de laboratoire : très peu probable

Mai 2021: lettre de virologistes demandant la poursuite des recherches sur l'origine

LETTERS

Edited by **Jennifer Sills**

Investigate the origins of COVID-19

Jesse D. Bloom[1,2], Yujia Alina Chan[3], Ralph S. Baric[4], Pamela J. Bjorkman[5], Sarah Cobey[6], Benjamin E. Deverman[3], David N. Fisman[7], Ravindra Gupta[8], Akiko Iwasaki[9,2], Marc Lipsitch[10], Ruslan Medzhitov[9,2], Richard A. Neher[11], Rasmus Nielsen[12], Nick Patterson[13], Tim Stearns[14], Erik van Nimwegen[11], Michael Worobey[15], David A. Relman[16,17]*

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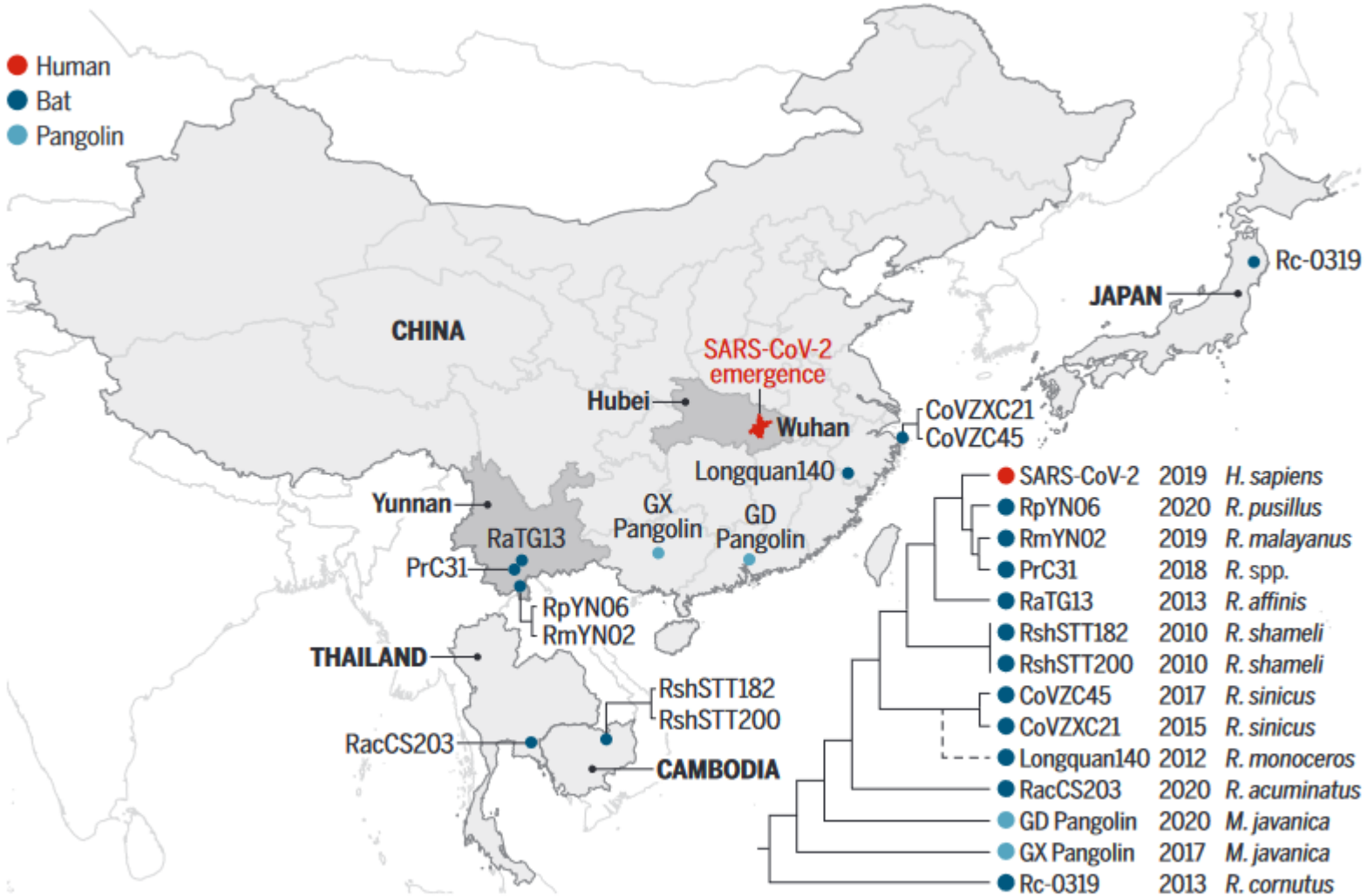

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27 AUGUST 2021 • VOL 373 ISSUE 6558

27 AU

By **Spyros Lytras[1], Wei Xia[2], Joseph Hughes[1], Xiaowei Jiang[3], David L. Robertson[1]**

Science

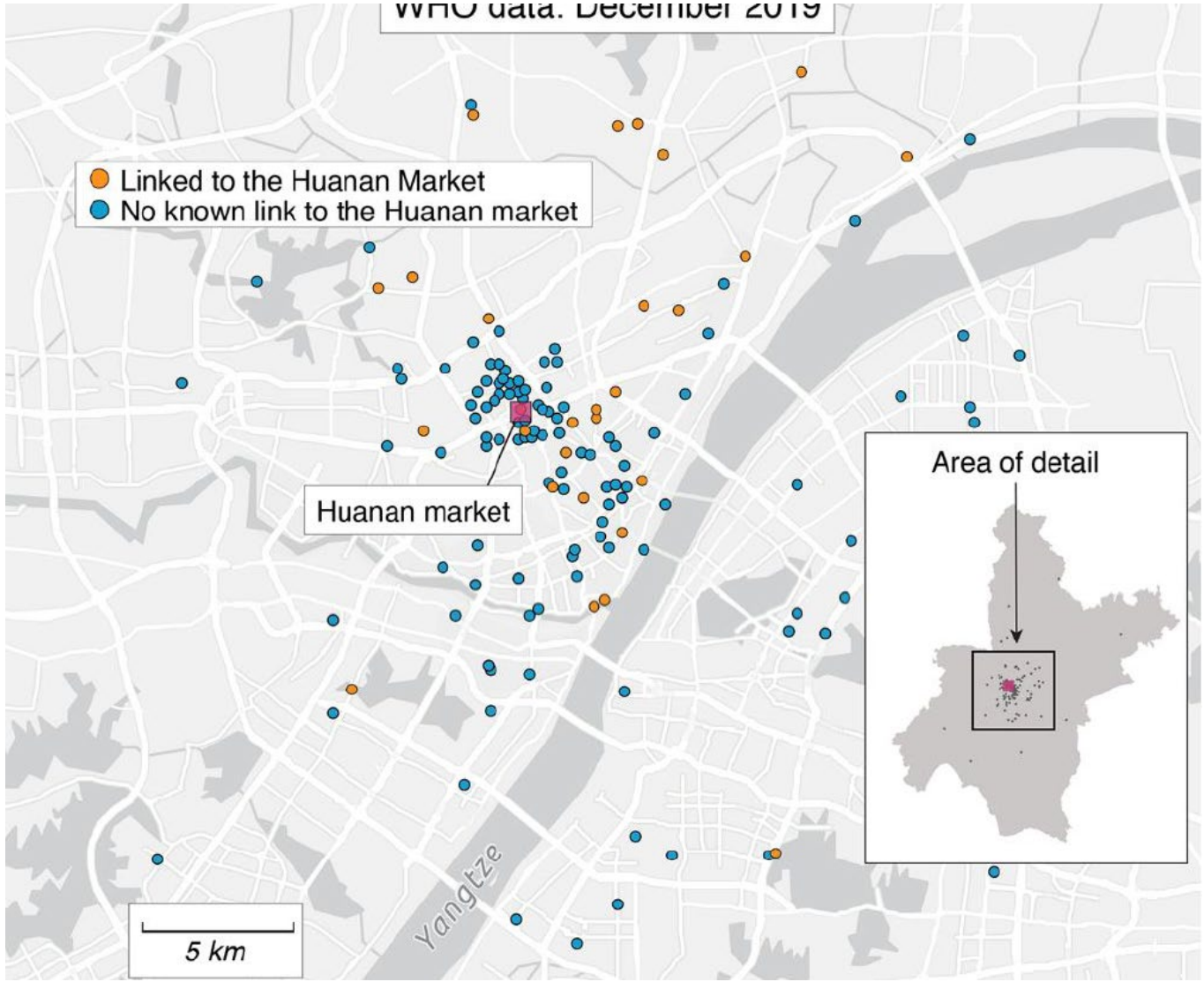
RESEARCH ARTICLES

Cite as: M. Worobey *et al.*, *Science* 10.1126/science.abp8715 (2022).

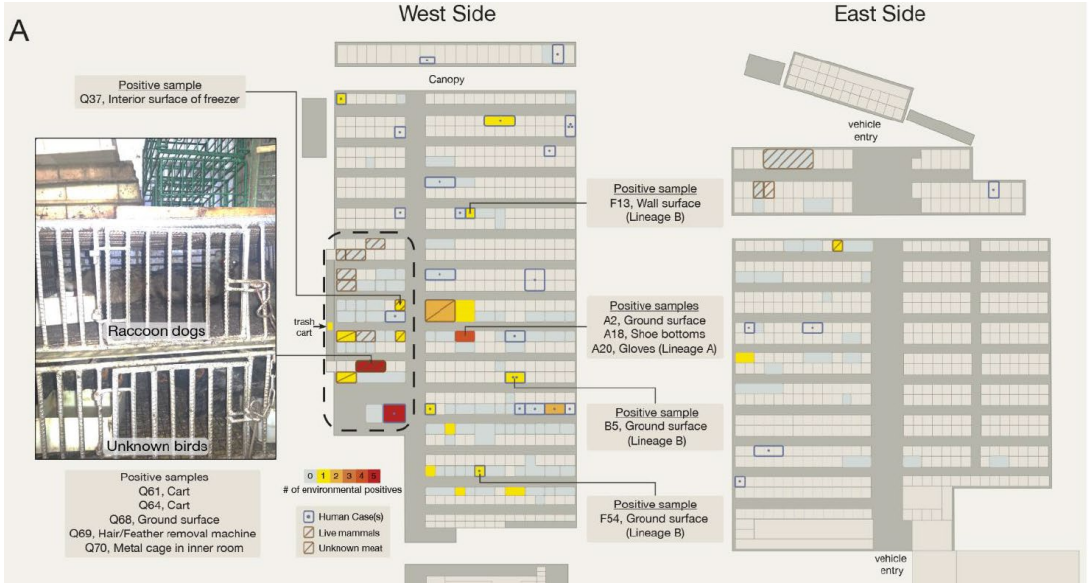
The Huanan Seafood Wholesale Market in Wuhan was the early epicenter of the COVID-19 pandemic

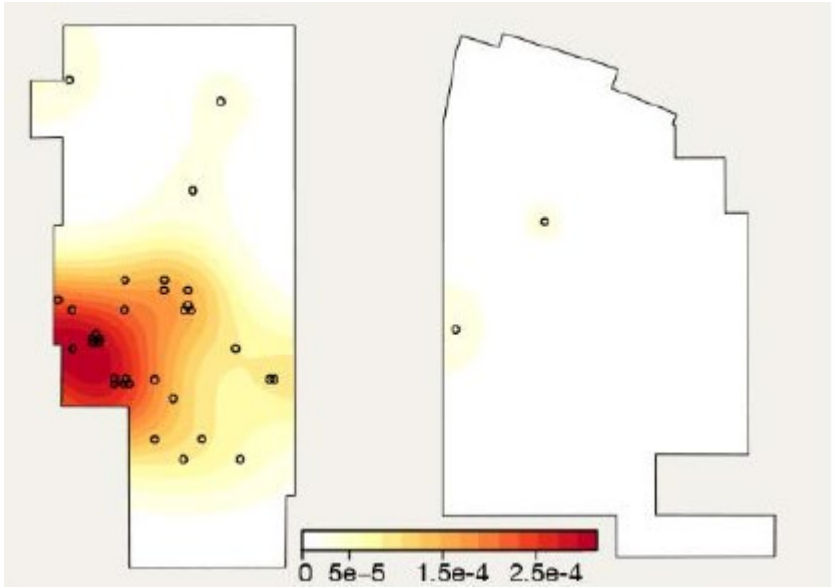
Michael Worobey[1]*, Joshua I. Levy[2], Lorena Malpica Serrano[1], Alexander Crits-Christoph[3], Jonathan E. Pekar[4,5], Stephen A. Goldstein[6], Angela L. Rasmussen[7,8], Moritz U. G. Kraemer[9], Chris Newman[10], Marion P. G. Koopmans[11,12], Marc A. Suchard[13,14,15], Joel O. Wertheim[16], Philippe Lemey[17,18], David L. Robertson[19], Robert F. Garry[18,20,21], Edward C. Holmes[22], Andrew Rambaut[23], Kristian G. Andersen[2,24]*

27/41 premiers hospitalisés sont liés au marché



La densité de prélèvements positifs correspond aux animaux sauvages





Renaud Piarroux
https://www.radiofrance.fr/franceculture/podcasts/mecaniques-des-epidemies?

Florence Débarre
https://twitter.com/flodebarre

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Chien viverrin

Merci
de votre attention