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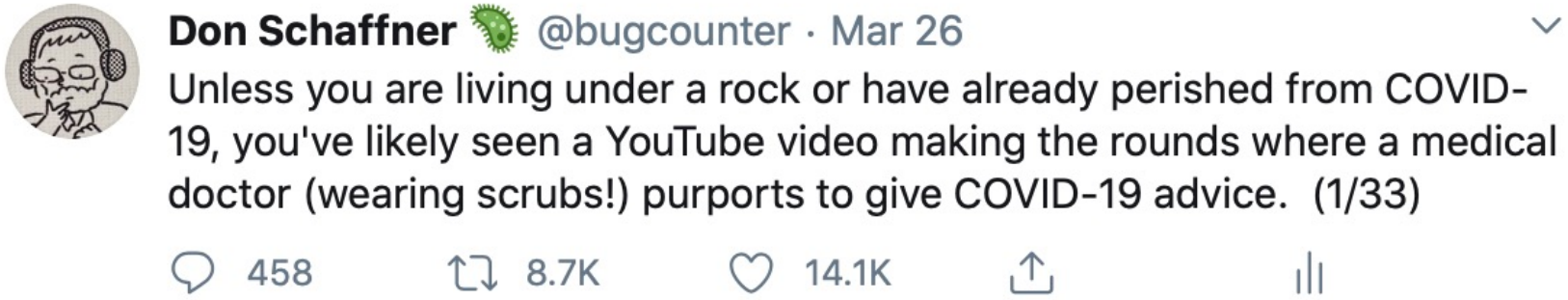
New Jersey Agricultural Experiment Station

My perspective on SARS-CoV-2 transmission in food settings

Don Schaffner

Distinguished Professor and Extension Specialist

Thursday, Mar 26th, 2020 (groceries)



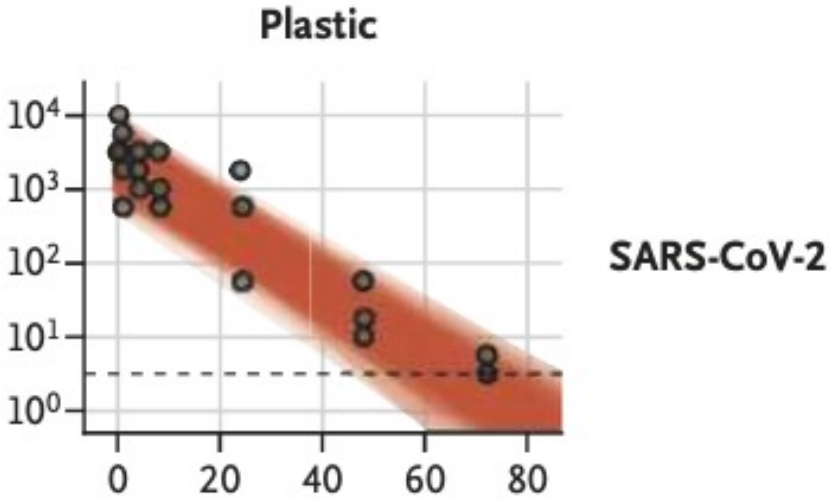
Don Schaffner @bugcounter · Mar 26

Unless you are living under a rock or have already perished from COVID-19, you've likely seen a YouTube video making the rounds where a medical doctor (wearing scrubs!) purports to give COVID-19 advice. (1/33)

458 8.7K 14.1K

How long does the virus survive?

- It's not about the time
  - Starting level
  - Limit of detection
- It's about the rate
  - Half life
    - 1000, 500, 250, 125, etc.
  - D value (decimal log reduction)
    - 1000, 100, 10, 1, 0.1 etc.
    - What is 0.1 virus?
- PCR vs Infectious Virus



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Temperature matters

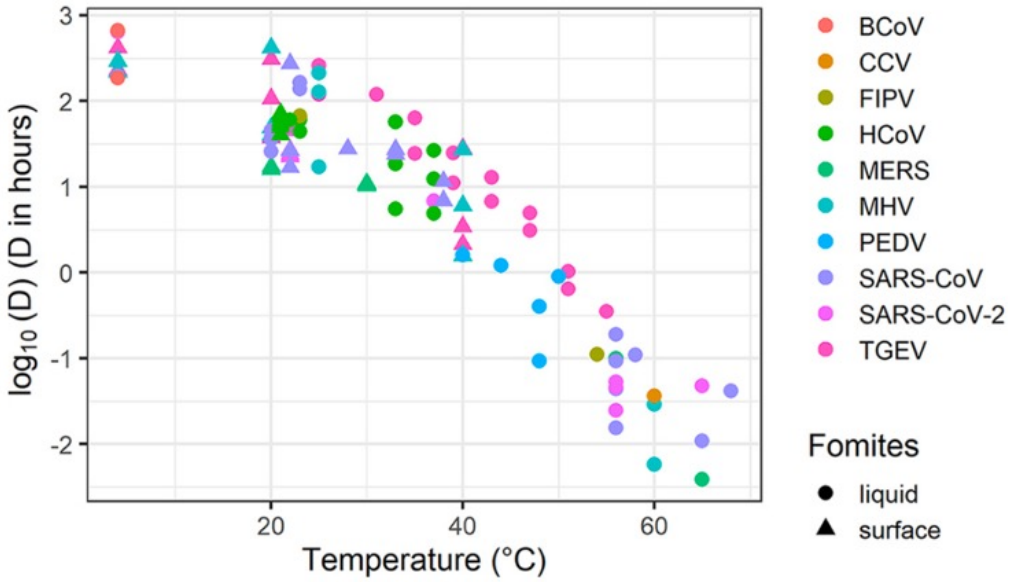

FIG 1 Decimal reduction times of 10 coronaviruses according to temperature in suspension or on inert surfaces.

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Recent Updates

TWiV 760: SARS-CoV-2 origins with Peter Daszak, Thea Kølsen Fischer, Marion Koopmans

May 27, 2021

Tagged as: coronavirus, COVID-19, pandemic, SARS-CoV-2, spillover, viral, virology, virus, viruses, zoonosis

Peter Daszak, Thea Kølsen Fischer, and Marion Koopmans, members of the WHO team investigating the origins of SARS-CoV-2 join TWiV to explain the work done by the committee during phase one, their conclusions, and the extent of work that remains to be done in phase two.

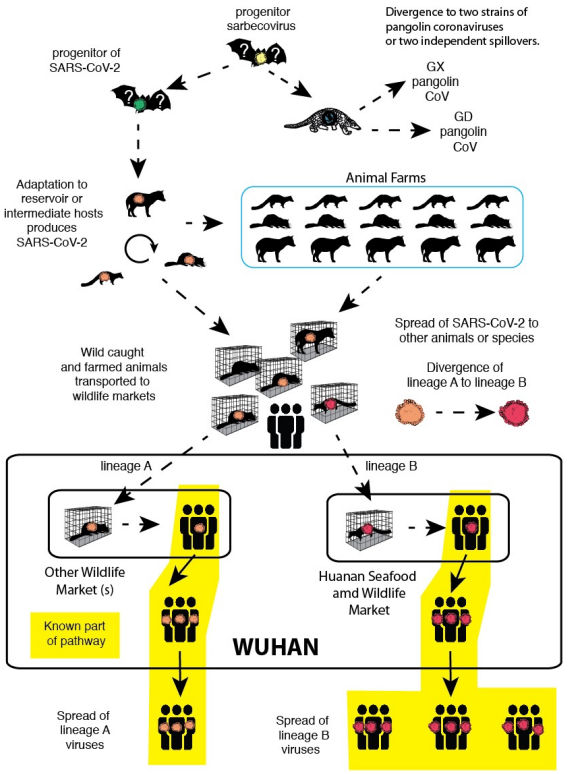
TWiV 762: SARS-CoV-2 origins with Robert Garry

May 30, 2021

Tagged as: bat coronavirus, coronavirus, COVID-19, lab leak hypothesis, origin of SARS-CoV-2, pandemic, sarbecovirus, SARS-CoV-2, viral, virology, virus, viruses, wildlife market

Robert Garry joins TWiV to explain how the molecular biology of SARS-CoV-2 shows that it came from Nature and not a lab, including the receptor binding domain, the furin cleavage site, and the two lineages circulating in Wuhan wildlife markets.

Recent Updates



Early appearance of two distinct genomic lineages of SARS-CoV-2 in different Wuhan wildlife markets suggests SARS-CoV-2 has a natural origin

SARS-CoV-2 coronavirus

R **rfgarry** 3 21d May 12

Early appearance of two distinct genomic lineages of SARS-CoV-2 in different Wuhan wildlife markets suggests SARS-CoV-2 has a natural origin
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May 13

- "A dispassionate science-based discourse on the topic of the origin of SARS-CoV-2 must account for… new data revealed by the WHO study showing… multiple markets were linked to the early cases, and divergence of SARS-CoV-2 into lineages A and B was an early occurrence. These facts are represented by yellow boxes…"

What is a “food setting”?

- Wildlife Market?
  - WHO Guidance on live markets
- Meat Processing Plant?
- Restaurant?
- Supermarket?
- My kitchen? (probably not)

What do we know?

- Fomite transmission is very unlikely
- Cold temperatures enhance survival
- Low humidity enhances survival
- Masks are protective
- Virus is shed via droplets and aerosols
- Some activities (coughing, singing, etc.) enhance transmission

WHO report uses terms like:

- very likely pathway
- possible-to-likely pathway
- possible pathway
- extremely unlikely pathway

- These **do** convey meaning, **but** may mean different things to different people

Final thoughts

- You can not prove a negative
- We may never learn the origin
- “I can live with doubt and uncertainty and not knowing. I think it's much more interesting to live not knowing than to have answers which might be wrong”
  - Richard Feynman