Biblical Prophecy Bible Study Are we in the End Times?

Lesson 3: The Origins of COVID, Part 1

October 4, 2022 8:00 PM

Review

Lessons 1-2

Daniel 2, 7; Revelation 13, 17
A Biblical Model

The final kingdom will consist of 7 nations

- Five kingdoms existed in the past (Babylon, Persia, Greece, +2)
- One kingdom existed at the time of John (Rome)
- One kingdom was future to the time of John

When the kingdom comes into power, 10 rulers will be given power

- The 10 rulers will rule for a short time (one hour)
- They will give power to the Antichrist

The Antichrist is one of the 7, but also an 8th

- He is linked to a former nation (Rome) but not at John's time (and is not)

The Seven Nations
A Possible Model

The One World Order will form an alliance of nations

- Ten individuals, who are not heads of state, will rule this government
- The alliance will consist of seven nations
  - 5 nations were no longer in existence in John's time
  - 1 nation did exist in John's time
  - 1 nation was still future in John's time
- The antichrist will come from one of the seven nations but also be associated with an eighth nation
  - He will take power from the ten rulers

The Kingdom of the Beast
A Hypothesis

Two opposing factions are at work

One is visible

- Coalition of governments, corporations, and individuals
- Drive toward globalism
- Marxist in origin
- Environmental authoritarianism

One is hidden

- The Antichrist

Strange Times and Strange Happenings

The Origins of COVID

Lesson 3: Origins of COVID, Part 1

In this part of the study, we will analyze recent events and see if they match the model of the end times we have built from the Bible.

SARS

Severe Acute Respiratory Syndrome

21 February 2003

- Dr. Liu Jianlun travelled from Guangdong to a wedding in Hong Kong
- Had been ill for 5 days prior to travelling
- Worsened overnight and was admitted to the ICU at Kwong Wah hospital
- Told hospital staff he had been treating a secret outbreak in Guangdong
- Died within 2 weeks

SARS was an epidemic caused by a coronavirus in 2002 and 2003.
Dr. Liu Jianlun was a professor of medicine in Guangdong province

2003 SARS Outbreak

5 nurses and 1 doctor were infected

7 hotel guests were infected

- Travelled to Toronto, Hanoi, Singapore and Hong Kong
- Virus also separately reached Beijing

2003 SARS Outbreak

April 2003

- Had spread to 25 countries
- More than 3,500 infections

July 2003 – Epidemic wound down

- More than 8,000 infections
- Nearly 800 deaths

There was another, smaller outbreak in 2004

2003 SARS Outbreak

- Many early patients were associated with the animal food markets
- Testing found many civets in market were positive for SARS coronavirus

2003 SARS Outbreak

- Testing of animals in rural areas found bats carry coronaviruses similar to SARS
- Rinolophus sinicus (Chinese horseshoe bat)
- SARS and civet coronavirus thought to descend from bats

By Lylambda (lylambda@gmail.com) - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=7579075

This is a picture of a horseshoe bat, but not the Chinese horseshoe bat

MERS 2012

Middle Eastern Respiratory Syndrome

Dr. Ali Mohamed Zaki isolated a coronavirus from a patient in Jeddah, Saudi Arabia in 2012

- Causes sporadic outbreaks
- 2,574 cases with 886 deaths (33% fatality rate)
- Spread to South Korea in 2015 and killed 38 people

MERS 2012

Middle Eastern Respiratory Syndrome

Closest viruses were isolated from bats

- Original source
- None were recent ancestors

Multiple lineages have been isolated from camels

- Carried virus for decades
- Probable intermediate host

Preparing for the Next Pandemic

Identifying	Researching	Preparing
Identifying potentially pandemic pathogens	Researching potential treatments	Preparing the battlefield

FULL TEXT LINKS

Science

Science. 2005 Oct 28;310(5748):676-9. doi: 10.1126/science.1118391. Epub 2005 Sep 29.

Bats are natural reservoirs of SARS-like coronaviruses

Wendong Li [1], Zhengli Shi, Meng Yu, Wuze Ren, Craig Smith, Jonathan H Epstein, Hanzhong Wang, Gary Crameri, Zhihong Hu, Huajun Zhang, Jianhong Zhang, Jennifer McEachern, Hume Field, Peter Daszak, Bryan T Eaton, Shuyi Zhang, Lin-Fa Wang

Affiliations
PMID: 16195424 DOI: 10.1126/science.1118391

Abstract

Severe acute respiratory syndrome (SARS) emerged in 2002 to 2003 in southern China. The origin of its etiological agent, the SARS coronavirus (SARS-CoV), remains elusive. Here we report that species of bats are a natural host of coronaviruses closely related to those responsible for the SARS outbreak. These viruses, termed SARS-like coronaviruses (SL-CoVs), display greater genetic variation than SARS-CoV isolated from humans or from civets. The human and civet isolates of SARS-CoV nestle phylogenetically within the spectrum of SL-CoVs, indicating that the virus responsible for the SARS outbreak was a member of this coronavirus group.

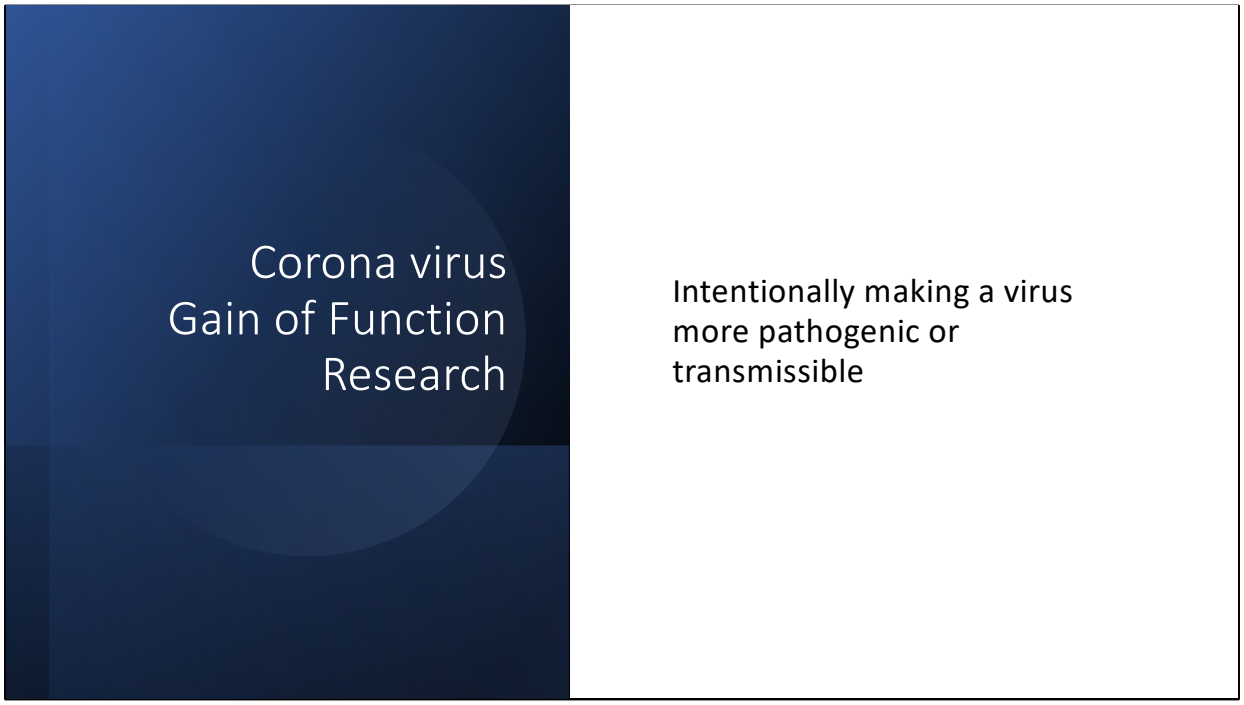
USAID

Emerging Pandemic Threats Program

PREDICT

- Funded between 2009 and 2019
- $200 M allocated during funding period
- Identified 1,200 viruses in animal species
  - 160 novel coronavirus
- Funded through contractors
  - University of California – Davis
  - EcoHealth Alliance
  - Metabiota Inc.

Peter Daszak would later become president of the EcoHealth Alliance



Some scientists thought that identifying potential pandemic pathogens was not enough. They proposed that in order to be truly prepared, we must understand what causes a virus to transfer from one species (animal) to humans. In order to understand the mechanisms of Zoonosis, we must modify viruses to infect humans. Then we can develop effective treatments and counter measures.

LETTERS

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]

The emergence of severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome (MERS)-CoV underscores the threat of cross-species transmission events leading to outbreaks in humans. Here we examine the disease potential of a SARS-like virus, SHC014-CoV, which is currently circulating in Chinese horseshoe bat populations[1]. Using the SARS-CoV reverse genetics system[2], we generated and characterized a chimeric virus expressing the spike of bat coronavirus SHC014 in a mouse-adapted SARS-CoV backbone. The results indicate that group 2b viruses encoding the SHC014 spike in a wild-type backbone can efficiently use multiple orthologs of the SARS receptor human angiotensin converting enzyme II (ACE2), replicate efficiently in primary human airway cells and achieve *in vitro* titers equivalent to epidemic strains of SARS-CoV. Additionally, *in vivo* experiments demonstrate replication of the chimeric virus in mouse lung with notable pathogenesis. Evaluation of available SARS-based immune-therapeutic and prophylactic modalities revealed poor efficacy; both monoclonal antibody and vaccine approaches failed to neutralize and protect from infection with CoVs using the novel spike protein. On the basis of these findings, we synthetically re-derived an infectious full-length SHC014 recombinant virus and demonstrate robust viral replication both *in vitro* and *in vivo*. Our work suggests a potential risk of SARS-CoV re-emergence from viruses currently circulating in bat populations.

the afflicted regions[5]. Although public health measures were able to stop the SARS-CoV outbreak[4], recent metagenomics studies have identified sequences of closely related SARS-like viruses circulating in Chinese bat populations that may pose a future threat[1,6]. However, sequence data alone provides minimal insights to identify and prepare for future prepandemic viruses. Therefore, to examine the emergence potential (that is, the potential to infect humans) of circulating bat CoVs, we built a chimeric virus encoding a novel, zoonotic CoV spike protein—from the RsSHC014-CoV sequence that was isolated from Chinese horseshoe bats[1]—in the context of the SARS-CoV mouse-adapted backbone. The hybrid virus allowed us to evaluate the ability of the novel spike protein to cause disease independently of other necessary adaptive mutations in its natural backbone. Using this approach, we characterized CoV infection mediated by the SHC014 spike protein in primary human airway cells and *in vivo*, and tested the efficacy of available immune therapeutics against SHC014-CoV. Together, the strategy translates metagenomics data to help predict and prepare for future emergent viruses.

The sequences of SHC014 and the related RsWIV1-CoV show that these CoVs are the closest relatives to the epidemic SARS-CoV strains (**Fig. 1a**,**b**); however, there are important differences in the 14 residues that bind human ACE2, the receptor for SARS-CoV, including the five that are critical for host range: Y442, L472, N479, T487 and Y491 (ref. 7). In WIV1, three of these residues vary from the epidemic SARS-CoV Urbani strain, but they were not expected to alter binding to ACE2 (**Supplementary Fig. 1a**,**b** and **Supplementary Table 1**).

2015 Nature article
Nature is one of the premier scientific journals in the world.

2015 Nature Article

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

- Created a chimeric virus
  - Spike protein from a bat coronavirus
  - Mouse adapted SARS-CoV backbone
- Virus was able to enter cells via ACEII receptor
- Replicated effectively in human airway cells
- Achieved viral titers equivalent to epidemic SARS-CoV
- Showed poor effectiveness of vaccines and monoclonal antibodies
- Authors included Ralph Baric of UNC and Zhengli-Li Shi of Wuhan Institute of Virology
- Funded by a grant from NIAID

NIAD is the National Institute of Allergy and Infections Disease, a Institute under the National Institutes of Health

Anthony Fauci was the head of NIAID

Coronavirus

Gain of Function

What is gain of function?

- Intentionally making a virus more pathogenic or transmissible

October 2014, White House placed a moratorium on funding gain-of-function research

December 2017, moratorium was lifted with new guidelines

2014 was the Obama administration
2017 was the Trump administration

Coronavirus

Gain of Function

P3CO Framework, published by HHS in 2017

Published guidelines for grants for research into Enhanced Potential Pandemic Pathogens

A potential pandemic pathogen (PPP) is a pathogen that satisfies both of the following:

1. It is likely highly transmissible and likely capable of wide and uncontrollable spread in human populations; and
2. It is likely highly virulent and likely to cause significant morbidity and/or mortality in humans.

https://www.phe.gov/s3/dualuse/documents/p3co.pdf

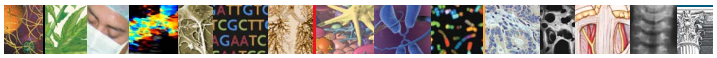
Coronavirus

Gain of Function

An enhanced PPP is defined as a PPP resulting from the enhancement of the transmissibility and/or virulence of a pathogen. Enhanced PPPs do not include naturally occurring pathogens that are circulating in or have been recovered from nature, regardless of their pandemic potential.

Preparing for the Next Pandemic

Identifying	Researching	Preparing
Identifying potentially pandemic pathogens	Researching potential treatments	Preparing the battlefield



The NEW ENGLAND JOURNAL of MEDICINE

Perspective

JULY 23, 2015

Establishing a Global Vaccine-Development Fund

Stanley A. Plotkin, M.D., Adel A.F. Mahmoud, M.D., Ph.D., and Jeremy Farrar, M.D., Ph.D.

As the Ebola epidemic in West Africa continues, albeit at a much lower level than it reached in the spring, we still lack a vaccine that has been shown to be safe and effective. There has been no shortage

laboratories and small biotechnology firms to development and licensure by industry. Such a fund would enable basic scientists to move candidate vaccines from the laboratory through the so-called

Coalition for Epidemic Preparedness Innovations (CEPI)

- Proposed by Jeremy Farrar (Wellcome Trust) in 2015 NEJM article
- Called for a monetary fund to create vaccines
- Focused on “blueprint priority diseases”
- Presented at World Economic Forum (WEF) in Davos, Switzerland in 2016
  - Endorsed by Bill Gates at Sir Andrew Witty, CEO of GlaxoSmithKline
- Launched at WEF at Davos in 2017

Coalition for Epidemic Preparedness Innovations (CEPI)

Funded by private and governmental donations

- Gates Foundation $100M (recently pledged $300M)
- Wellcome Trust $100M
- Japan $125M
- Norway $120M
- Germany $100M

February 2020 had raised $760M

Coalition for Epidemic Preparedness Innovations (CEPI)

Funds vaccine development at an estimated price of $1B per vaccine

- Lassa fever, Nipah virus, SARS-CoV, Chikungunya virus, Rift Valley fever

Originally called for equitable distribution of vaccines

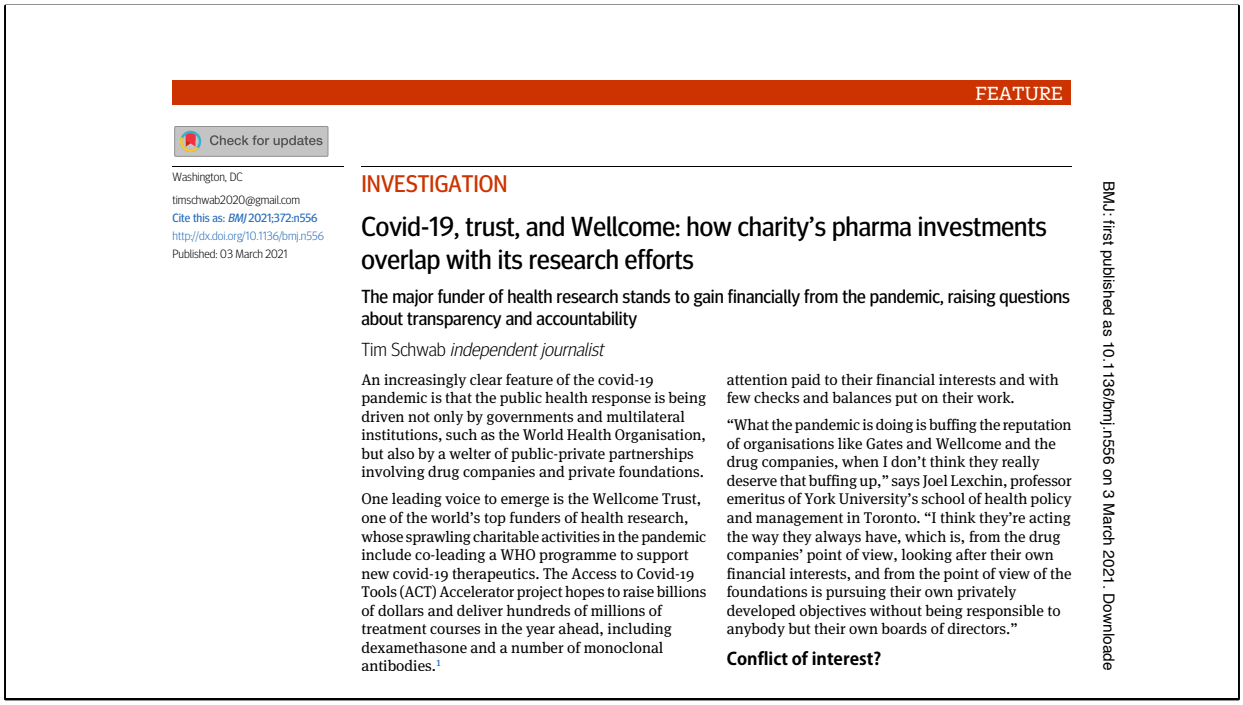
Intellectual property rights remained with the developer

Price was set at a level that was affordable and sustainable for manufacturers

Clause was removed at insistence of pharmaceutical companies

- Johnson and Johnson, Pfizer, Takeda

The vaccines were paid for by contributions for private organizations and national governments, but the pharmaceutical companies retained intellectual property rights to the vaccine and were not limited in the amount of profit they were allowed to make.



FEATURE

Check for updates

Washington, DC
timschwab2020@gmail.com
Cite this as: *BMJ* 2021;372:n556
http://dx.doi.org/10.1136/bmj.n556
Published: 03 March 2021

INVESTIGATION

Covid-19, trust, and Wellcome: how charity's pharma investments overlap with its research efforts

The major funder of health research stands to gain financially from the pandemic, raising questions about transparency and accountability

Tim Schwab *independent journalist*

An increasingly clear feature of the covid-19 pandemic is that the public health response is being driven not only by governments and multilateral institutions, such as the World Health Organisation, but also by a welter of public-private partnerships involving drug companies and private foundations.

One leading voice to emerge is the Wellcome Trust, one of the world's top funders of health research, whose sprawling charitable activities in the pandemic include co-leading a WHO programme to support new covid-19 therapeutics. The Access to Covid-19 Tools (ACT) Accelerator project hopes to raise billions of dollars and deliver hundreds of millions of treatment courses in the year ahead, including dexamethasone and a number of monoclonal antibodies.[1]

attention paid to their financial interests and with few checks and balances put on their work.

"What the pandemic is doing is buffing the reputation of organisations like Gates and Wellcome and the drug companies, when I don't think they really deserve that buffing up," says Joel Lexchin, professor emeritus of York University's school of health policy and management in Toronto. "I think they're acting the way they always have, which is, from the drug companies' point of view, looking after their own financial interests, and from the point of view of the foundations is pursuing their own privately developed objectives without being responsible to anybody but their own boards of directors."

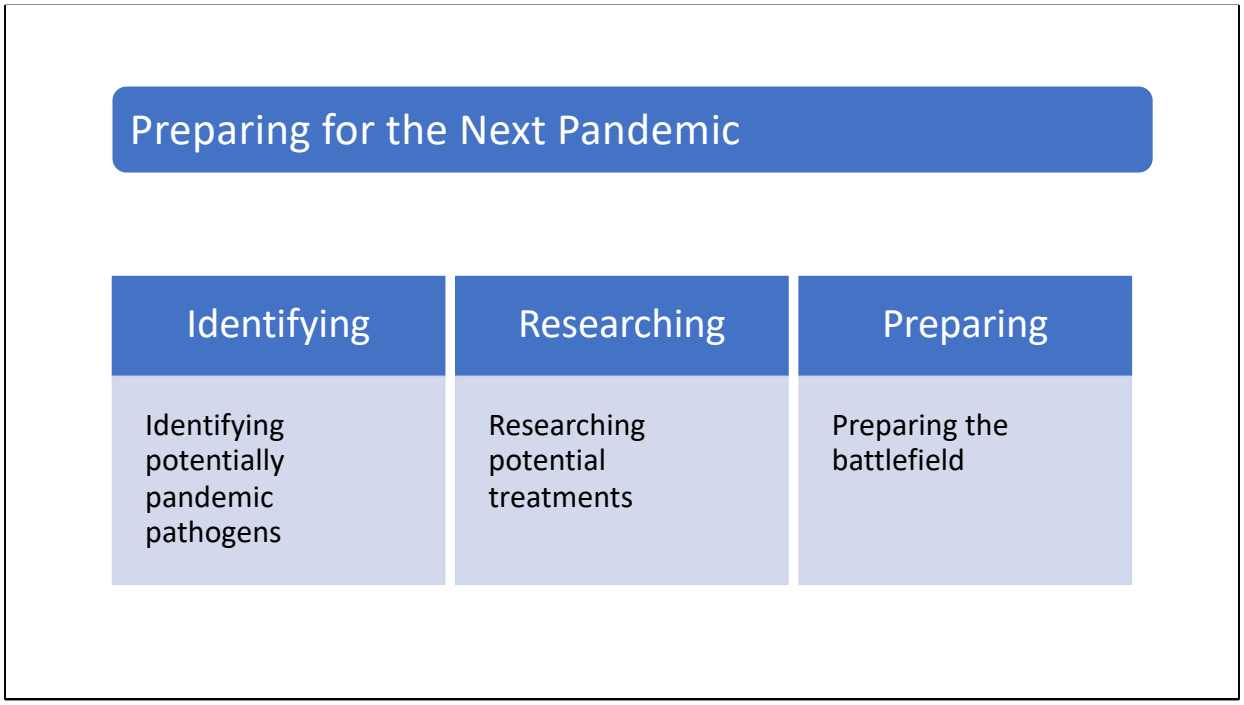
Conflict of interest?

BMJ – again a premiere medical journal. It is the UK equivalent of the NEJM. This was published in 2021 but does show these Nonprofits make money from the programs they contribute to.

Coalition for Epidemic Preparedness Innovations (CEPI)

- Wellcome Trust has approximately $800M in COVID pharmaceutical companies
  - Manufacturers of dexamethasone and monoclonal antibodies
- Gates Foundation has more than $250M invested in COVID pharmaceutical companies

- Both nonprofits stand to benefit financially from COVID efforts
- Both nonprofits wield great influence
- Neither have disclosed financial conflicts of interest



Preparing the battlefield

Event 201

October 18, 2019

- Simulation of a Pandemic Virus held in New York City
- Zoonotic origin of a fictional Coronavirus Acute Pulmonary Syndrome
  - Coronavirus similar to SARS and MERS but antigenically distinct
  - Bats to pigs to humans

Sponsored by Johns Hopkins Center for Health Security

- World Economic Forum
- Bill and Melinda Gates Foundation

Event 201
October 18, 2019

Recommendations

- Governments, international organizations, and businesses should plan now for how essential corporate capabilities will be utilized during a large-scale pandemic.
- Industry, national governments, and international organizations should work together to enhance internationally held stockpiles of medical countermeasures (MCMs) to enable rapid and equitable distribution during a severe pandemic.
- Countries, international organizations, and global transportation companies should work together to maintain travel and trade during severe pandemics.
- Governments should provide more resources and support for the development and surge manufacturing of vaccines, therapeutics, and diagnostics that will be needed during a severe pandemic.

Event 201
October 18, 2019

Recommendations

- Global business should recognize the economic burdern of pandemics and fight for stronger preparedness.
- International organizations should prioritize reducing economic impacts of epidemic and pandemics.
- Governments and the private sector should assign a greater priority to developing methods to combat mis- and disinformation prior to the next pandemic response.

Event 201

Methods to combat mis- and disinformation

- Governments partner with traditional and social media companies
- Flood media with fast, accurate, and consistent information
- Public health leaders work with trusted community leaders, such as faith leaders, to promulgate factual information
- Media companies commit to ensuring authoritative messages are prioritized
- False messages are suppressed

https://www.centerforhealthsecurity.org/our-work/exercises/event201/

The Chinese also held an emergency response exercise in September of 2019 that simulated the arrival of novel coronavirus in Wuhan from a passenger who arrived for the Military World Games
They also simulated the arrival of radioactive ataerial.

Coronavirus

Early Timeline

COVID-19
Early Timeline

- December 12, 2019 – Clusters of patient with an atypical pneumonia appear in the city of Wuhan in southern China
- December 31, 2019 – World Health Office in China is informed of cases
- January 2, 2020 Dr. Liu Yingle of Wuhan University's State Key Laboratory of Virology collects samples from 2 patients (BAL)
  - 39-year old male who worked in the Huanan seafood market (Dec 20, 2019)
  - 21-year old female who had contact with the seafood market staff (Dec 22, 2019)

Earliest cases were identified in November of 2019

COVID-19

Early Timeline

- January 1, 2020 – Huanan Seafood market is closed
- January 7, 2020 – China identifies the virus as a coronavirus
- January 10, 2020 – WHO 2019-nCoV
- January 13, 2020 – Thailand confirms the first case outside of China
- January 14, 2020 – WHO finds evidence of human-to-human transmission
- January 20, 2020 – US reports the first confirmed case
- February 20, 2020 – First US death
- March 13, 2020 – President Trump declares a state of emergency

SARS CoV-2

What is it?

SARS CoV-2

What is it?

- Single stranded positive sense RNA virus
- 30,000 nucleotides
  - 15 genes encode 26 proteins
  - Some proteins make up the structure of the virus
  - Some proteins help the infected cell make copies of the virus
- Spike protein, S1/S2 subunits
  - Transmembrane protein
  - Binds to ACEII receptor on human cells via a Receptor Binding Domain (RBD)
  - Binding causes the cell of engulf the virus, bringing it into the cell

SARS CoV-2

What is it?

Virus enters cell

- Genome is copied
- Genes are translated into proteins
- New viruses are assembled and released

SARS CoV-2

What is it?

Spike protein

- Composed of 2 protein subunits (S1/S2)
- S1 contains the RBD and binds to the ACEII receptor
- S2 causes fusion of the viral and cell membranes
- Border between S1/S2 has a protease cleavage site
  - Cleavage (cutting) of the subunits is critical for fusion of the membranes

SARS-CoV-2: Structure, Biology, and Structure-Based Therapeutics Development
https://www.frontiersin.org/articles/10.3389/fcimb.2020.587269/full

SARS-CoV-2 spike protein induces inflammation via TLR2-dependent activation of the NF-κB pathway

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Key Words: COVID-19, SARS-CoV-2, Spike protein, Cytokine storm, TLR2, Inflammation

SARS-CoV-2 Spike Protein

SARS-CoV-2 spike protein induces inflammation via TLR2-dependent activation of the NF-κB pathway

- Preprint released in March 2021
- Spike proteins produce an inflammatory response in mouse and human cells
- Cells release cytokines which lead to inflammation and tissue damage

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7987013/

A preprint is a scientific paper that is published, usually online, before the peer review process

Respiratory cells, macrophages released cytokines

COVID-19
Identifying the Virus

- January 7, 2020 – Dr. Liu Yingle sequences the genome
  - 98.7% match with BtCov/4991
  - Found in Mojiang mines in 2013 by the Wuhan Institute of Virology (WIV)
  - Published February 5, 2020 in Emerging Microbes and Infections
- February 3, 2020 – Dr. Shi of WIV also publishes the genome
  - 79.6% match for SARS-CoV (2002 SARS epidemic virus)
  - Noted a match of short segment of RaTG13
  - Sample collected from bat in Yunnan province
  - No citation given for RaTG13

Dr. Liu Yingle was working at Wuhan University's State Key Laboratory of Virology

Strange Times and Strange Happenings
COVID: The Players

Organizations

- The Bill and Melinda Gates Foundation
- The Wellcome Trust
- EcoHealth Alliance
- World Economic Forum
- World Health Organization

Strange Times and Strange Happenings
COVID: The Players

Individuals

- Bill Gates
- Jeremy Farrar
- Peter Daszak
- Shi Lengshi

Questions and Discussion

Acts 17:10-11

"The brethren immediately sent Paul and Silas away by night to Berea, and when they arrived, they went into the synagogue of the Jews. Now these were more noble-minded than those in Thessalonica, for they received the word with great eagerness, examining the Scriptures daily to see whether these things were so."

Don't trust anything I saw. Please go and look it up for yourself. Challenge me when I am wrong. Discuss when you disagree.

Should we be looking for His return?

Olivet Discourse

Matthew 24

Mark 13

Luke 21

Matthew 25

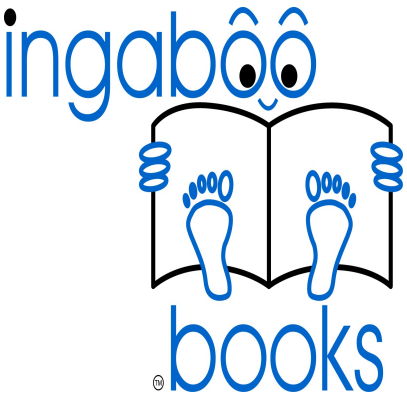
- Parable of the Ten Virgins

"Be on alert then, for you do not know the day nor the hour."

Lecture Notes are
Posted at…

Ingaboo Books website

www.ingaboobooks.com



References

Viral: The Search for the Origin of COVID-19

Alina Chan and Matt Ridley

Harper Collins Publishers, 2021

Suggested Resources

Caldwell Commentaries

https://caldwellcommentaries.com

Women's Bible study of Life of Christ, Genesism Revelation

Available in Podcasts and Books

Biblical Prophecy Bible Study Are we in the End Times?

Lesson 4: The Origins of COVID, Part 2

October 10, 2022 8:00 PM