COVID-19 Press Briefing

May 13, 2021

Daily Change in COVID-19 Cases, US

January 22, 2020 – May 11, 2021

TOTAL Cases Reported Since 1/22/20

32,608,287

NEW Cases Reported to CDC on 5/11/21
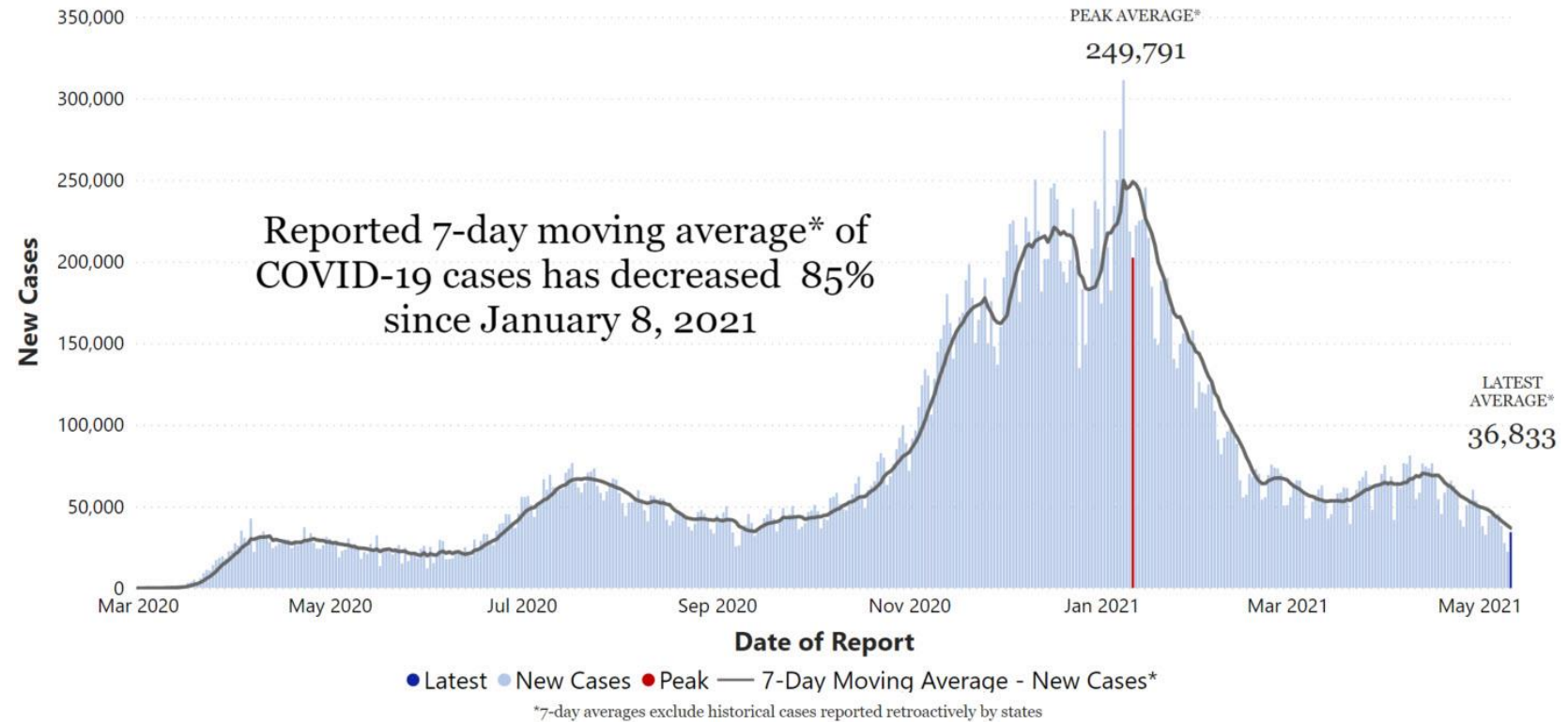
34,291

Change in 7-Day Case Average

-22.8%

Current 7-Day Case Average (5/5/21 - 5/11/21)

36,833

Prior 7-Day Case Average (4/28/21 - 5/4/21)

47,724

PEAK AVERAGE*
249,791

Reported 7-day moving average* of COVID-19 cases has decreased 85% since January 8, 2021

LATEST AVERAGE*
36,833

New Cases

Date of Report

● Latest ● New Cases ● Peak — 7-Day Moving Average - New Cases*

*7-day averages exclude historical cases reported retroactively by states

New Admissions of Patients with Confirmed COVID-19

August 1, 2020 – May 10, 2021

Patients Currently Hospitalized with COVID on 5/10/21

28,919

New Admissions on 5/10/21

3,548

Peak in New Admissions (1/5/21)

18,162
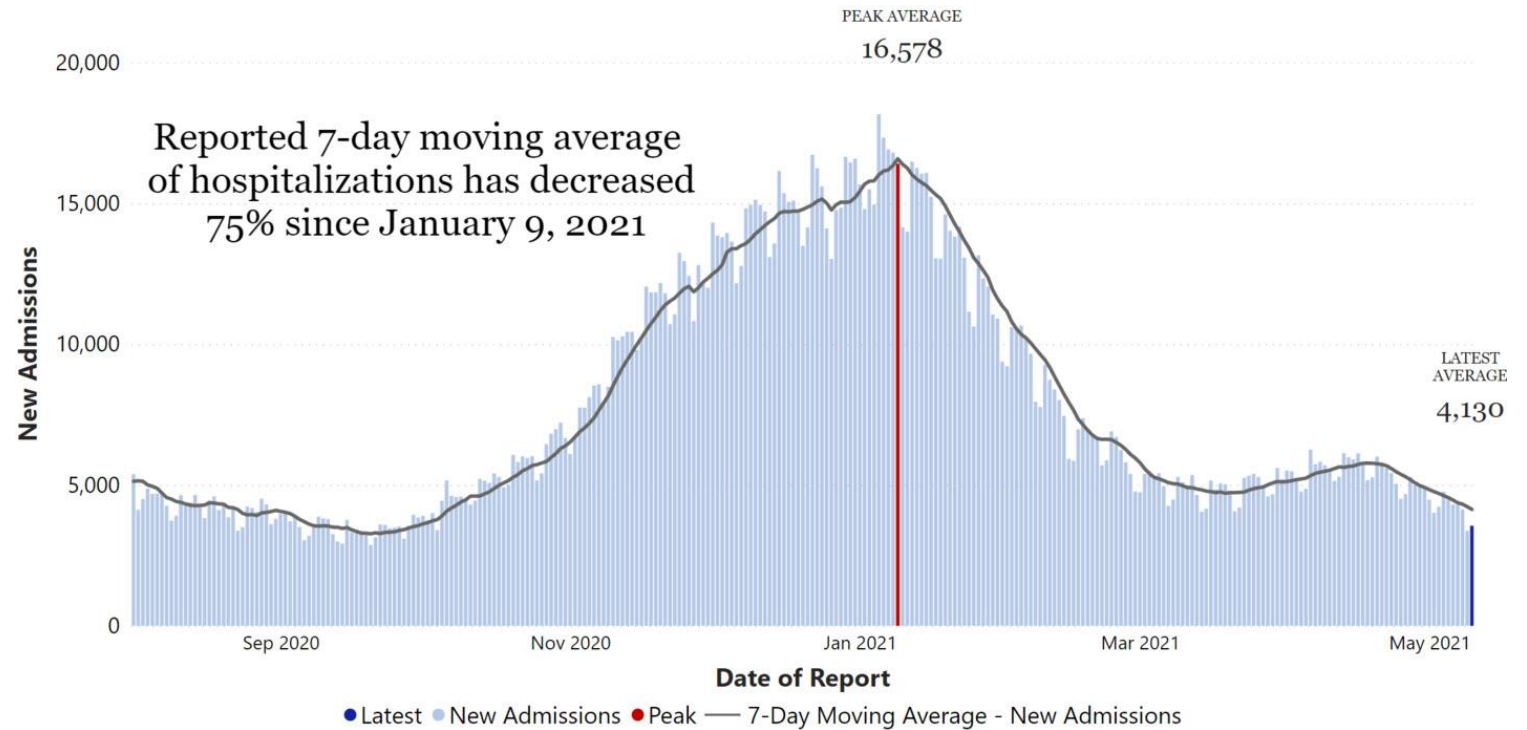
Change in 7-Day Average of New Admissions

-12.1%

Current 7-Day Average of New Admissions (5/4/21 - 5/10/21)

4,130

Prior 7-Day Average of New Admissions (4/27/21 - 5/3/21)

4,698

PEAK AVERAGE
16,578

Reported 7-day moving average of hospitalizations has decreased 75% since January 9, 2021

LATEST AVERAGE
4,130

New Admissions

20,000

15,000

10,000

5,000

0

Sep 2020   Nov 2020   Jan 2021   Mar 2021   May 2021

Date of Report

● Latest   ● New Admissions   ● Peak   —— 7-Day Moving Average - New Admissions

Daily Change in COVID-19 Deaths, United States

January 22, 2020 – May 11, 2021

TOTAL Deaths Reported Since 1/22/2020

580,073

NEW Deaths Reported to CDC on 5/11/21

643

Change in 7-Day Death Average

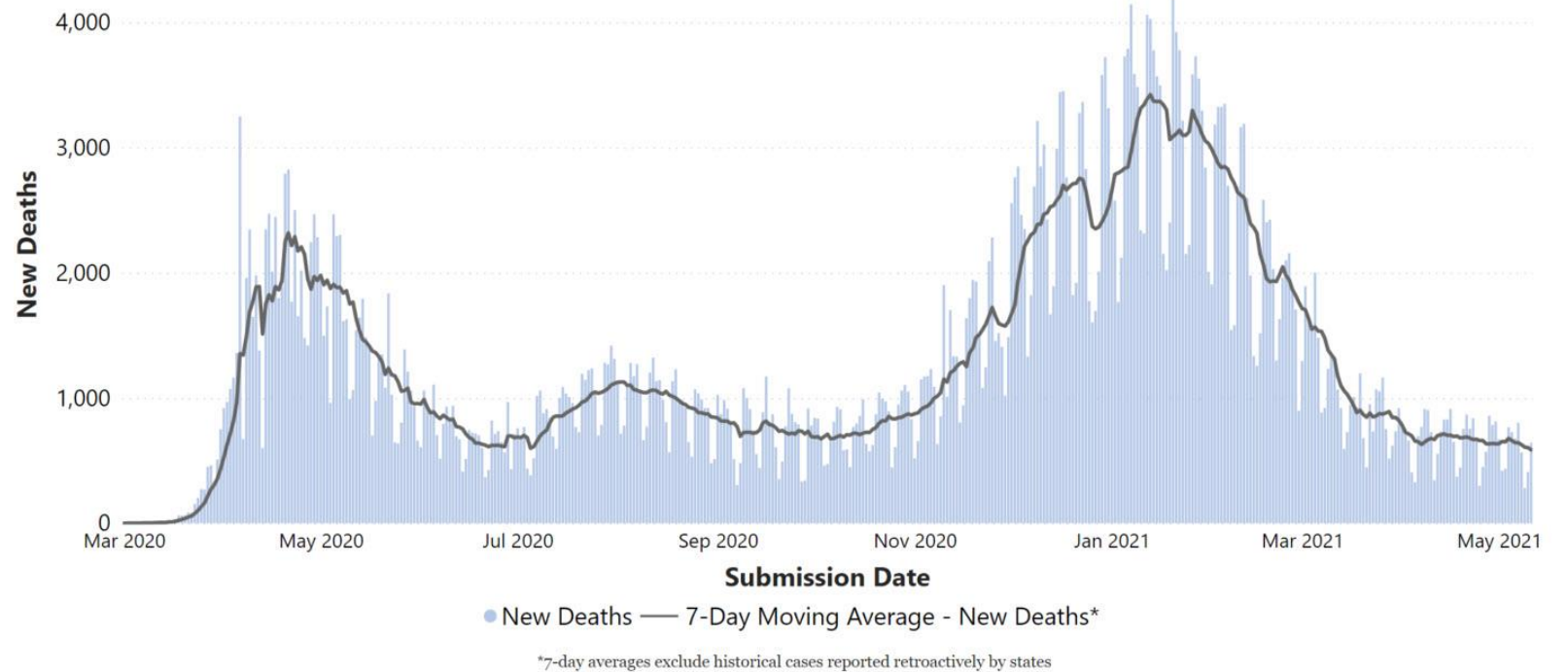-13.5%

Current 7-Day Death Average (5/5/21 - 5/11/21)

587

Prior 7-Day Death Average (4/28/21 - 5/4/21)

678

Forecasted Total Deaths by 6/05/21

591,000 to 602,000

New Deaths — 7-Day Moving Average - New Deaths*

*7-day averages exclude historical cases reported retroactively by states

Real World Effectiveness of COVID-19 Vaccines

JAMA | Original Investigation

Association Between Vaccination With BNT162b2 and Incidence of Symptomatic and Asymptomatic SARS-CoV-2 Infections Among Health Care Workers

Symptomatic: **97% effective**
Asymptomatic: **86% effective**

Published May 6, 2021

Centers for Disease Control and Prevention
MMWR

Interim Estimates of Vaccine Effectiveness of BNT162b2 and mRNA-1273 COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Health Care Personnel, First Responders, and Other Essential and Frontline Workers — Eight U.S. Locations, December 2020–March 2021

90% effective

Published April 2, 2021

Centers for Disease Control and Prevention
MMWR

Effectiveness of Pfizer-BioNTech and Moderna Vaccines Against COVID-19 Among Hospitalized Adults Aged ≥65 Years — United States, January–March 2021

94% effective

Published April 28, 2021

Effectiveness of COVID-19 Vaccines Against Variants

The NEW ENGLAND JOURNAL of MEDICINE

CORRESPONDENCE

Effectiveness of the BNT162b2 Covid-19 Vaccine against the B.1.1.7 and B.1.351 Variants

Variant	Effectiveness
Infection	
B.1.1.7	89.5%
B.1.351	75%
Severe Disease	
B.1.1.7	100%
B.1.351	100%
Any Virus	97.4%

Published May 5, 2021

Decreased Transmission After Vaccination

BRIEF COMMUNICATION
https://doi.org/10.1038/s41591-021-01316-7

Check for updates

Initial report of decreased SARS-CoV-2 viral load after inoculation with the BNT162b2 vaccine

Matan Levine-Tiefenbrun [1,6], Idan Yelin [1,6], Rachel Katz[2], Esma Herzel[2], Ziv Golan[3], Licita Schreiber[3], Tamar Wolf[3], Varda Nadler[3], Amir Ben-Tov [2,4], Jacob Kuint[2,4], Sivan Gazit[2], Tal Patalon[2], Gabriel Chodick [2,4] and Roy Kishony [1,5]

Published March 29, 2021

- After vaccination with BNT162b2, those infected with COVID-19 had significantly lower viral loads

Centers for Disease Control and Prevention
MMWR

Postvaccination SARS-CoV-2 Infections Among Skilled Nursing Facility Residents and Staff Members — Chicago, Illinois, December 2020–March 2021

Richard A. Teran, PhD[1,2]*; Kelly A. Walblay, MPH[2]*; Elizabeth L. Shane, MPH[2]; Shannon Xydis[2]; Stephanie Gretsch, MPH[3]; Alexandra Gagner, MPH[2]; Usha Samala, MPH[2]; Hyeree Choi[2]; Christy Zelinski, MPH[2]; Stephanie R. Black, MD[2]

Published April 21, 2021

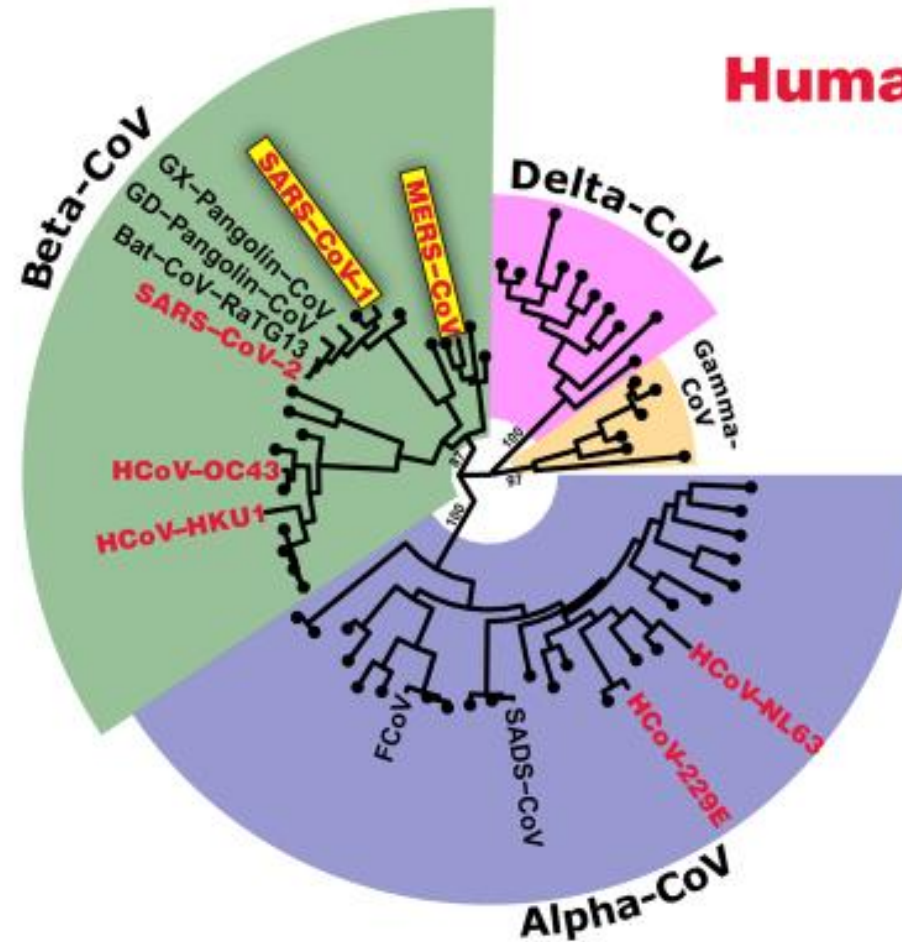- No facility-associated secondary transmission was observed
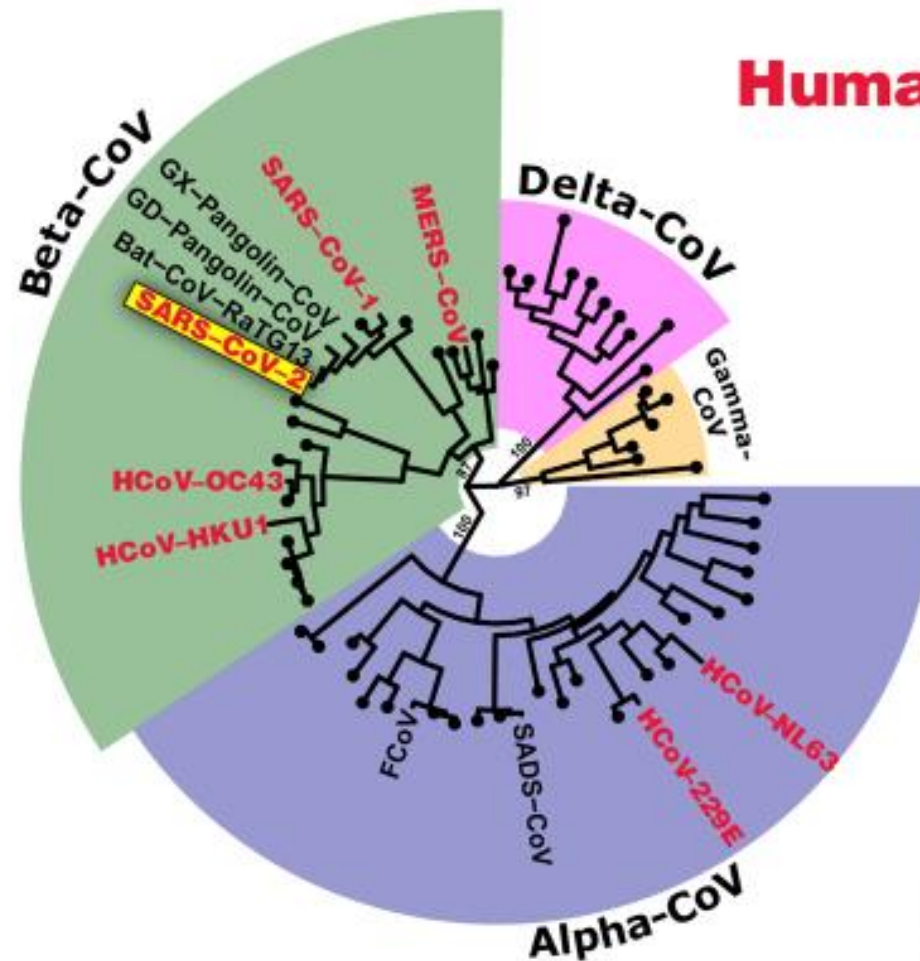
Coronavirus Phylogenetic Tree
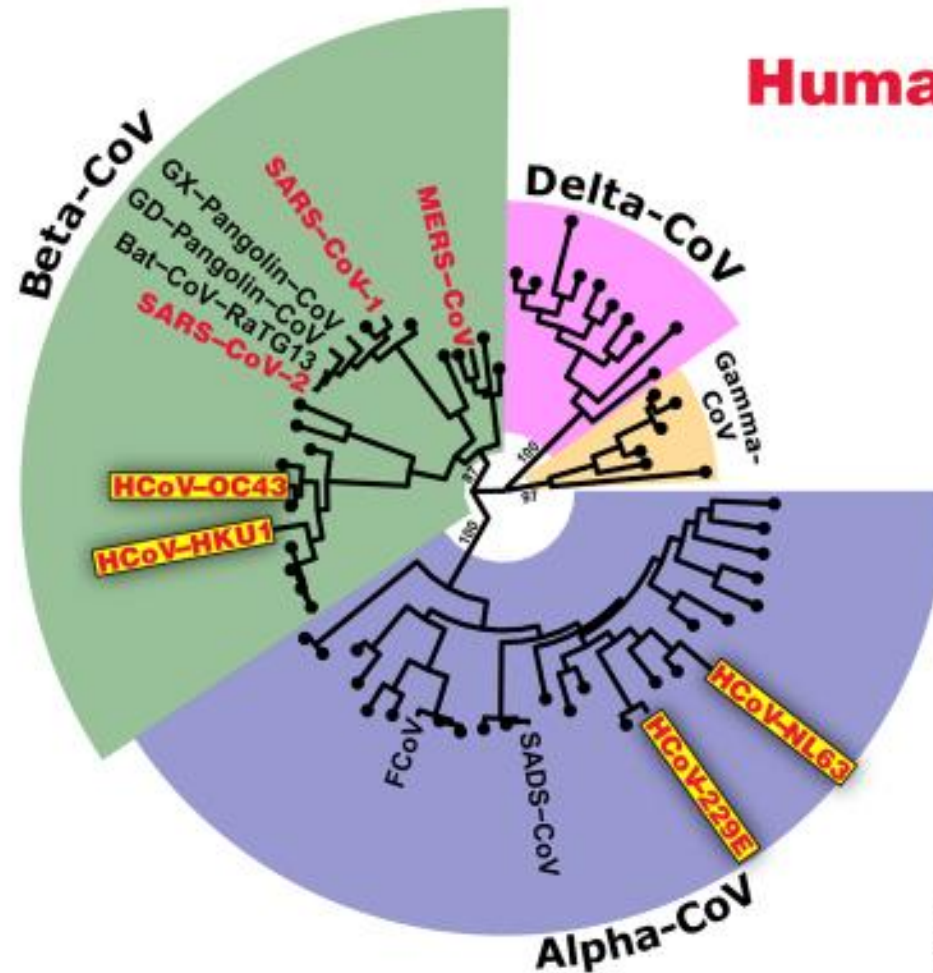
Human coronaviruses

Source: SM Gygli, PhD, NIAID. Based on 440 bp nucleotide sequences of RNA-dependent RNA polymerase.

Coronavirus Phylogenetic Tree

Source: SM Gygli, PhD, NIAID. Based on 440 bp nucleotide sequences of RNA-dependent RNA polymerase.

11

Coronavirus Phylogenetic Tree

Source: SM Gygli, PhD, NIAID. Based on 440 bp nucleotide sequences of RNA-dependent RNA polymerase.

Towards a Universal, "Pan-Coronavirus" Vaccine: Examples of Numerous Projects Underway

Science — February 12, 2021
Mosaic Nanoparticles Elicit Cross-Reactive Immune Responses to Zoonotic Coronaviruses in Mice
AA Cohen, PJ Bjorkman et al.

bioRxiv (CSH Cold Spring Harbor Laboratory — THE PREPRINT SERVER FOR BIOLOGY) — March 16, 2021
Elicitation of Broadly Protective Sarbecovirus Immunity by Receptor-Binding Domain Nanoparticle Vaccines
AC Walls, D Veesler et al.

bioRxiv (CSH Cold Spring Harbor Laboratory — THE PREPRINT SERVER FOR BIOLOGY) — May 10, 2021
SARS-CoV-2 Ferritin Nanoparticle Vaccines Elicit Broad SARS Coronavirus Immunogenicity
MG Joyce, K Modjarrad et al.

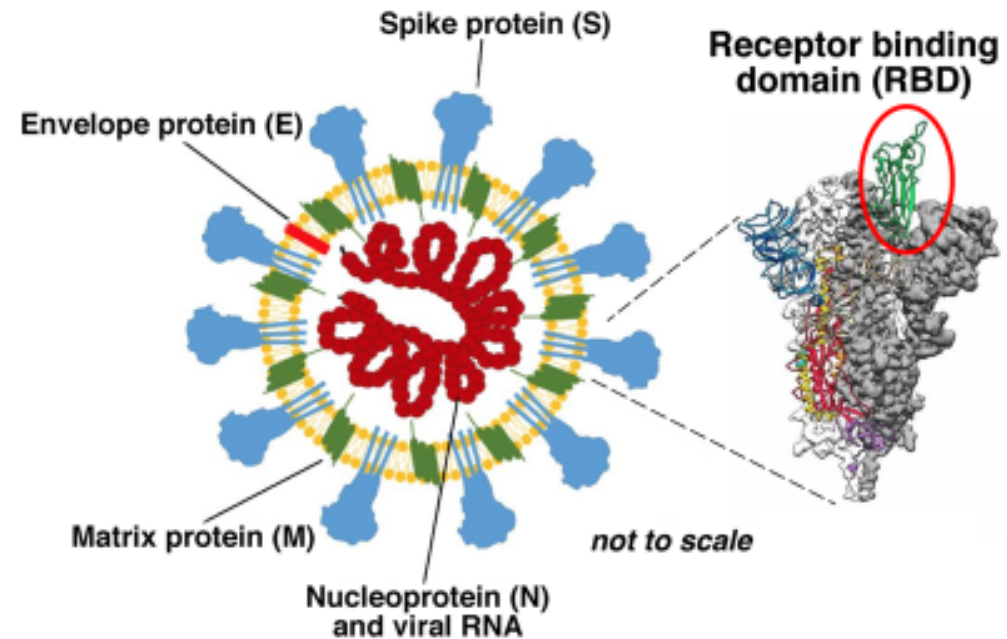# Neutralizing Antibody Vaccine for Pandemic and Pre-Emergent Coronaviruses

KO Saunders et al.

- Experimental "pan-coronavirus" vaccine protected monkeys from SARS-CoV-2 infection and elicited cross neutralizing antibody responses against bat coronaviruses, SARS-CoV-1, SARS-CoV-2, and SARS-CoV-2 variants

Towards a Pan-Coronavirus Vaccine

- **Proof of concept:** Antibodies than can neutralize multiple different coronaviruses have been isolated from people infected with SARS-CoV-1, suggesting that a pan-coronavirus vaccine might be possible

- **A specific, highly conserved site** on the receptor binding domain (RBD) makes multiple human and bat coronaviruses highly vulnerable to cross-neutralizing antibodies

Spike protein (S)

Receptor binding domain (RBD)

Envelope protein (E)

Matrix protein (M)

Nucleoprotein (N) and viral RNA

not to scale

Images: Florian Krammer; NIAID VRC

15

Towards a Pan-Coronavirus Vaccine (cont.)

■ Researchers designed a **nanoparticle vaccine** displaying 24 copies of the RBD site, and added an adjuvant to boost immune responses

Nanoparticle vaccine
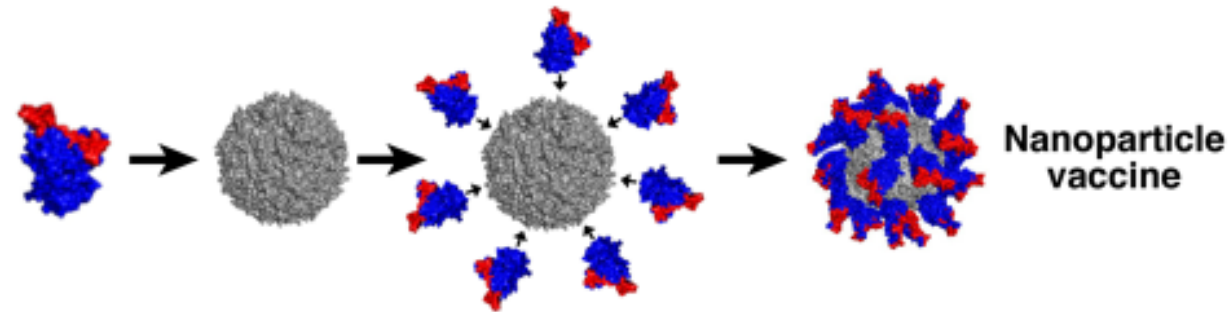
■ In monkeys, the nanoparticle vaccine completely blocked SARS-CoV-2 infection and elicited higher neutralizing activity than seen with current vaccines or natural infection in humans

■ Vaccine elicited cross-neutralizing antibody responses against bat coronaviruses, SARS-CoV-1, SARS-CoV-2, and SARS-CoV-2 variants B.1.1.7, P.1, and B.1.351

Images: KO Saunders et al., *Nature* May 10, 2021