



Shreis Scalene Therapeutics LLC

Filling unmet need during the COVID-19 Public Health
Emergency



“ A validated engineering solution to disable Coronaviruses ”

Prof. Meena Augustus PhD & R. J Augustus Ph.D.

SHYCOCAN™

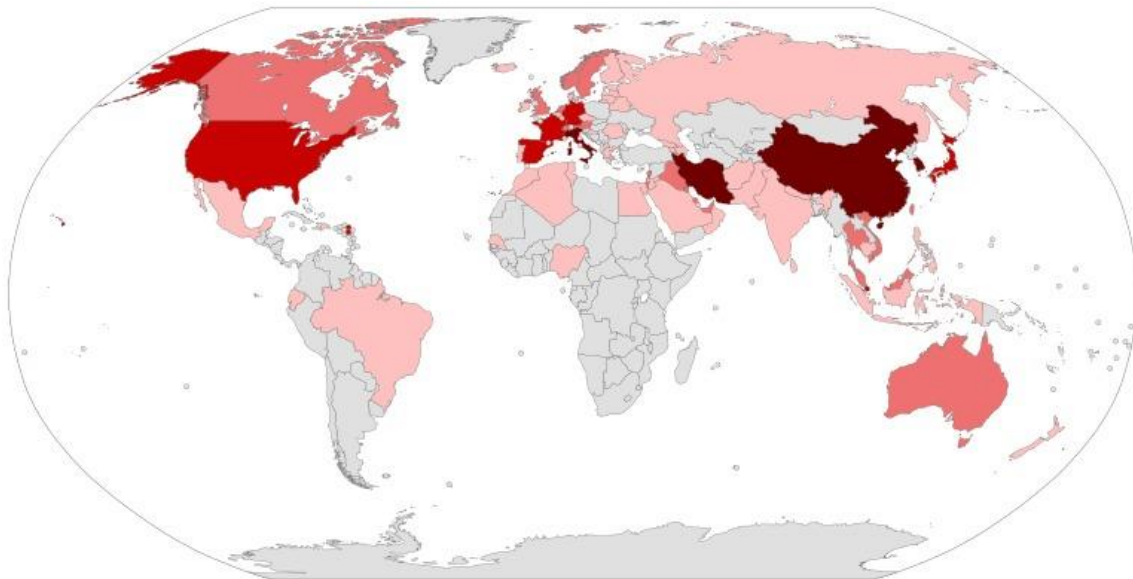
Scalene Hypercharge Corona Canon



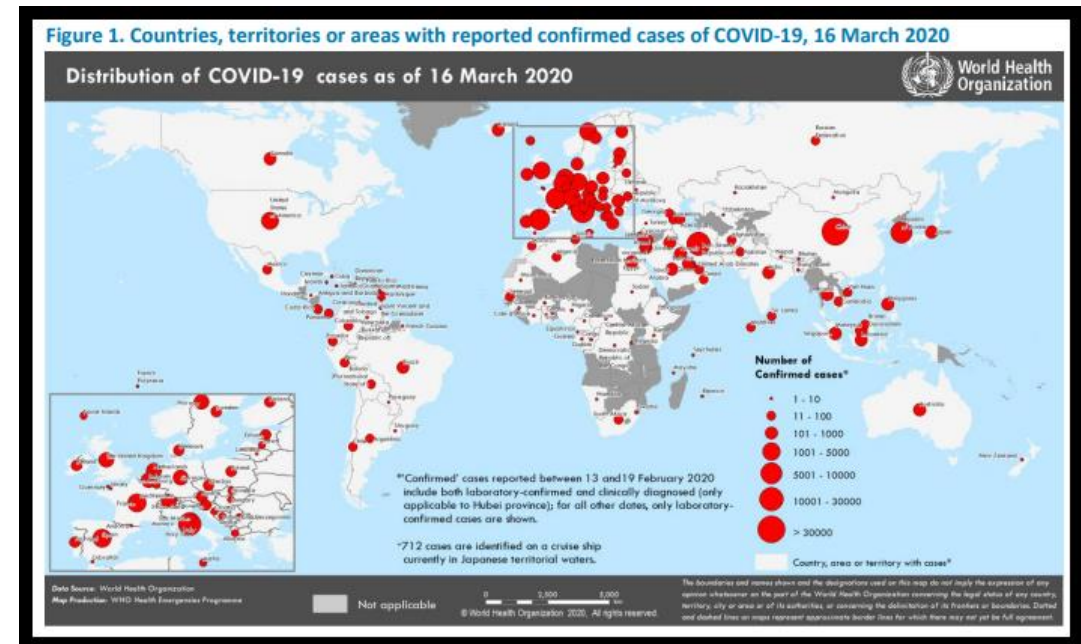
**Device for the Environmental Containment
of Coronaviruses**

WHO DAILY STATUS REPORT- WHEN THE LOCKDOWN STARTED.....

https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200316-sitrep-56-covid-19.pdf?sfvrsn=9fda7db2_2

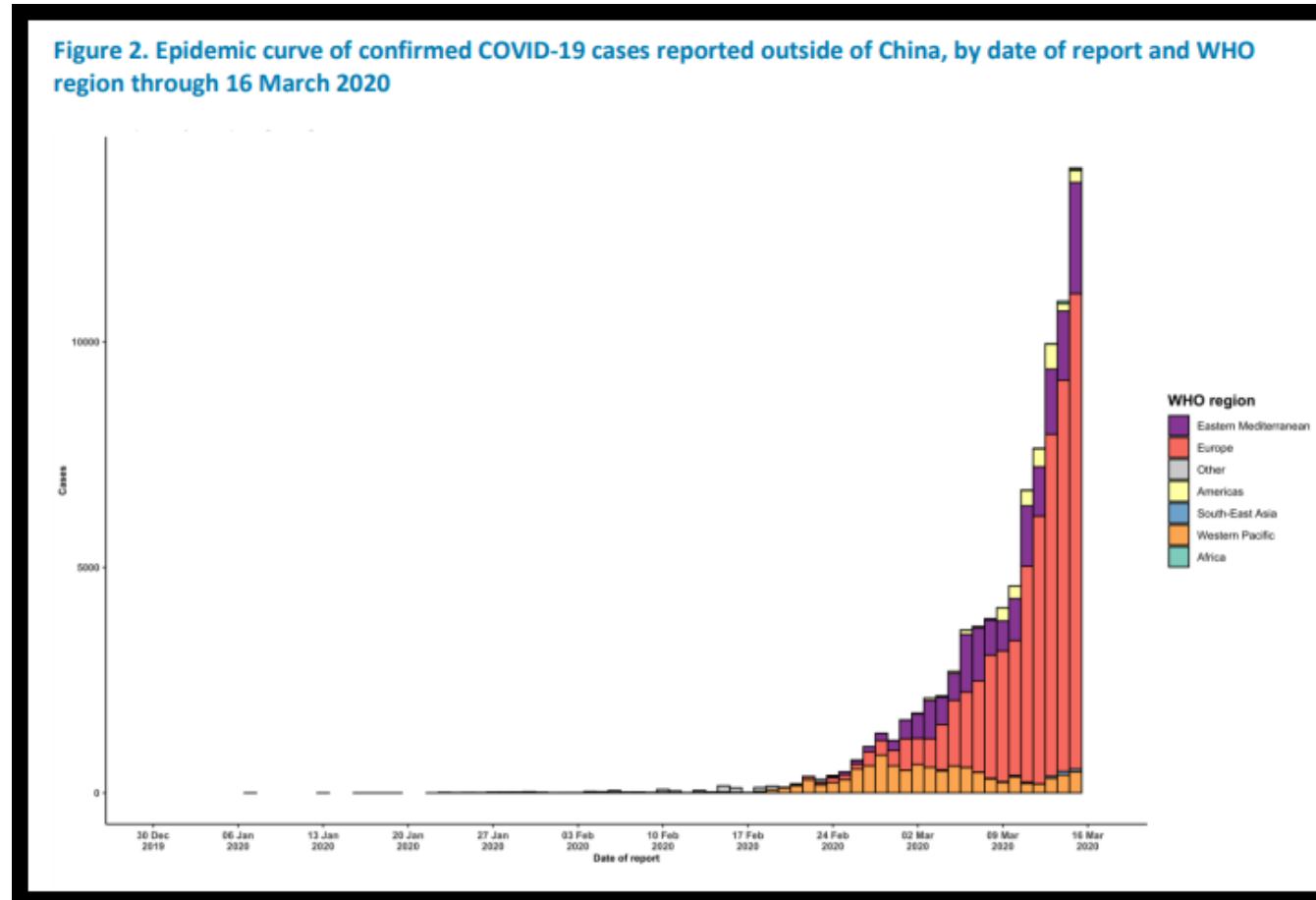


Map of the COVID-19 outbreak as of 2nd March 2020



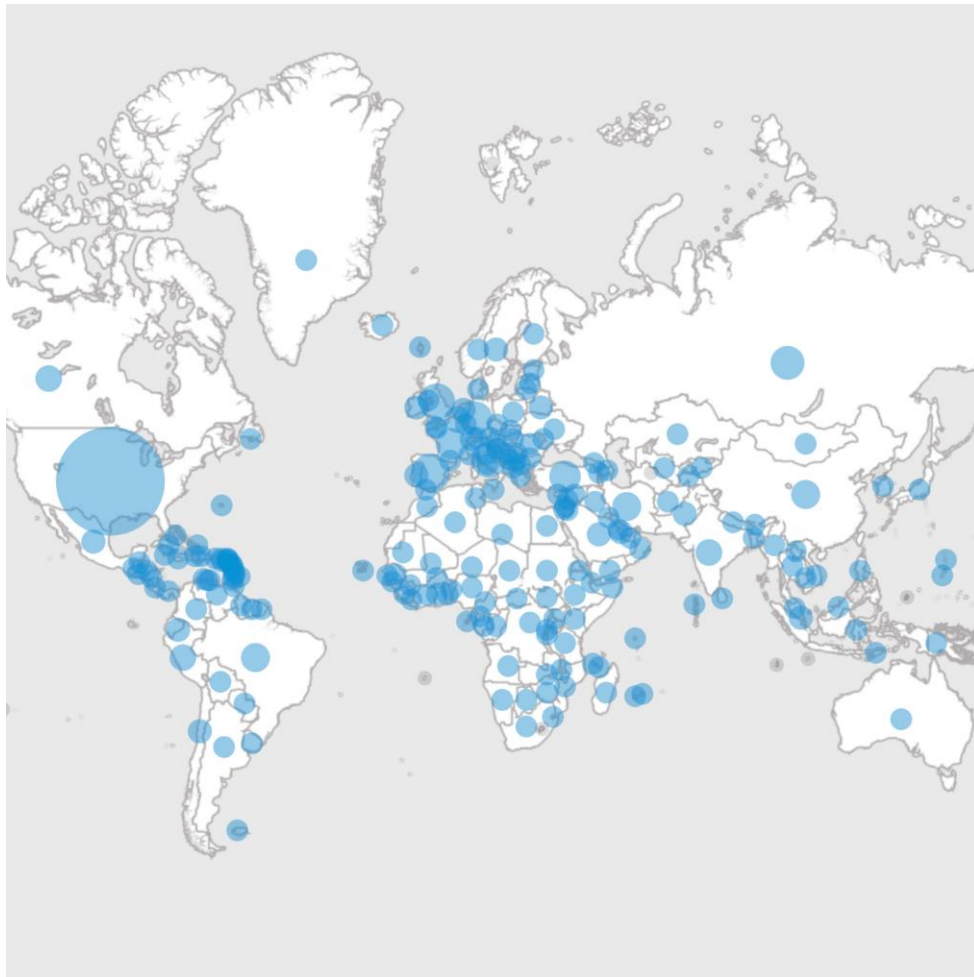
Map of the COVID-19 outbreak as of 16th March 2020

Rapidly escalating curve predicted for COVID 19 infectivity



WHO FACT SHEET TODAY- Global numbers rising and doubling as we speak!

Updated daily and reported to WHO.



Globally, as of **1:52pm CEST, 8 September 2020**, there have been **27,236,916 confirmed cases** of COVID-19, including **891,031 deaths**, reported to WHO

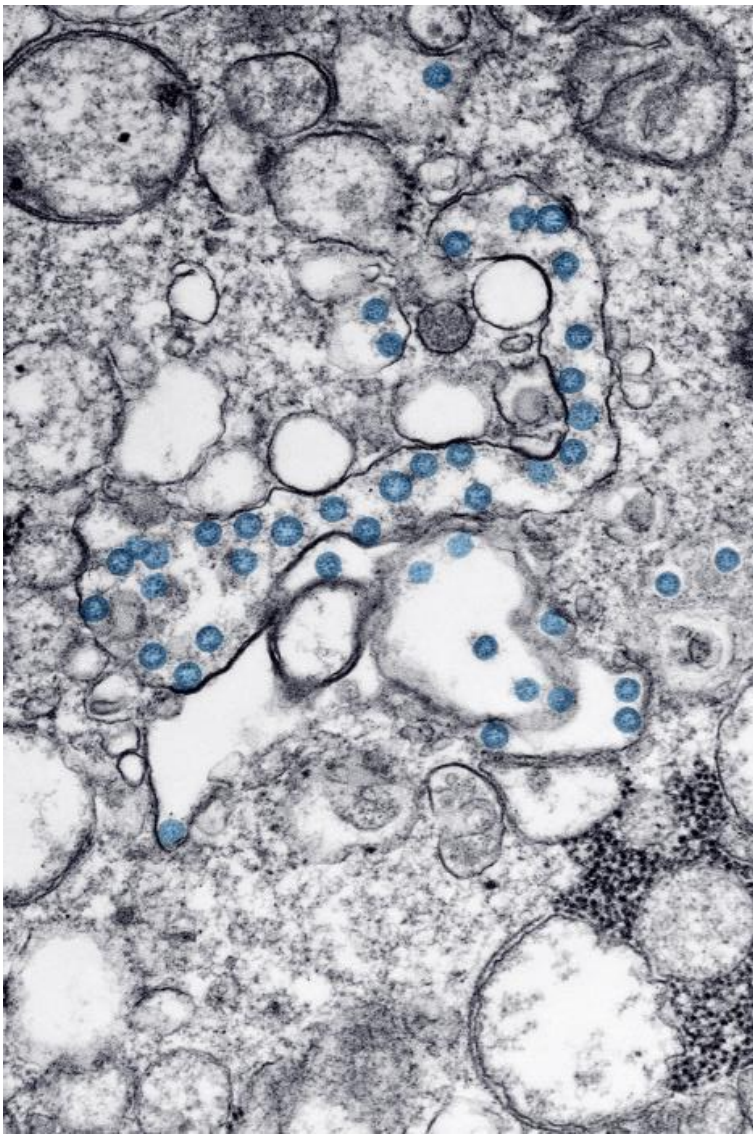
In **United States of America**, as of **Sept 8th 2020** there are **6,222,974 confirmed cases** and **188,003 deaths** reported to the WHO

Americas
14,193,356 confirmed
South-East Asia
4,869,112 confirmed
Europe
4,536,086 confirmed
Eastern Mediterranean
2,023,392 confirmed
Africa
1,092,149 confirmed
Western Pacific
522,080 confirmed
Source: WHO

Global Pandemic

Source updated daily: <https://covid19.who.int/>

Situation by WHO Region

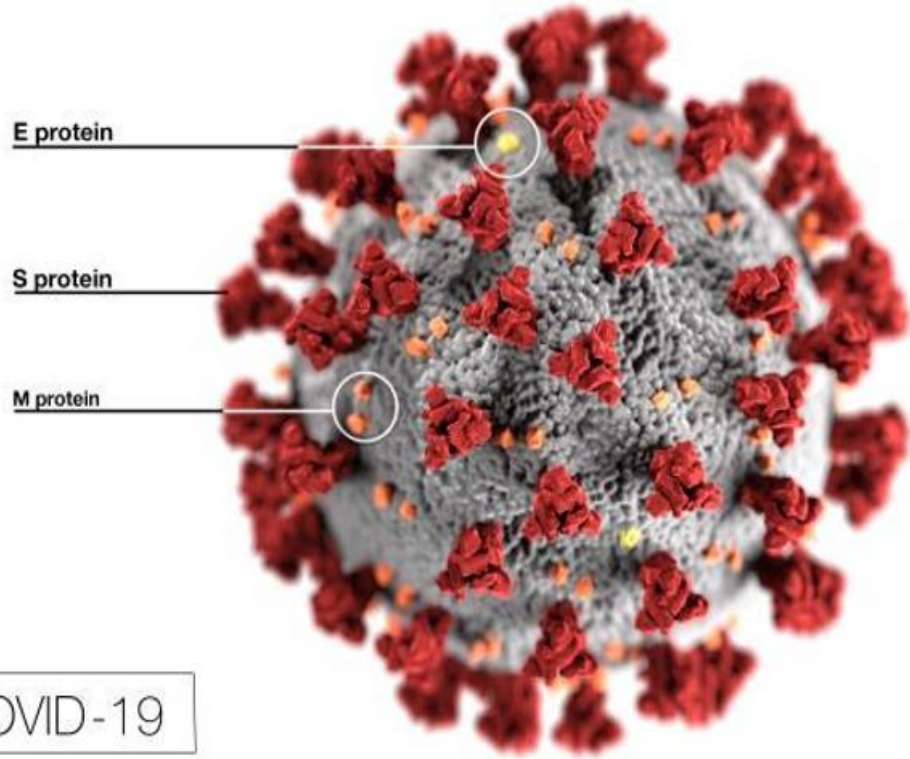


The Need

- COVID-19 is spread by droplets or aerosols (speaking, coughing, sneezing, vomiting etc., and *through physical contact*)
- Indisciplined use of PPEs like masks/gloves etc.
- Containing the air/surface-borne viral load is key to preventing the spread
- SSTx prioritizes the SHYCOCAN project to meet emergent needs/ fill the gap

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WHAT ARE CORONAVIRUSES & HOW DO THEY INFECT HUMANS?

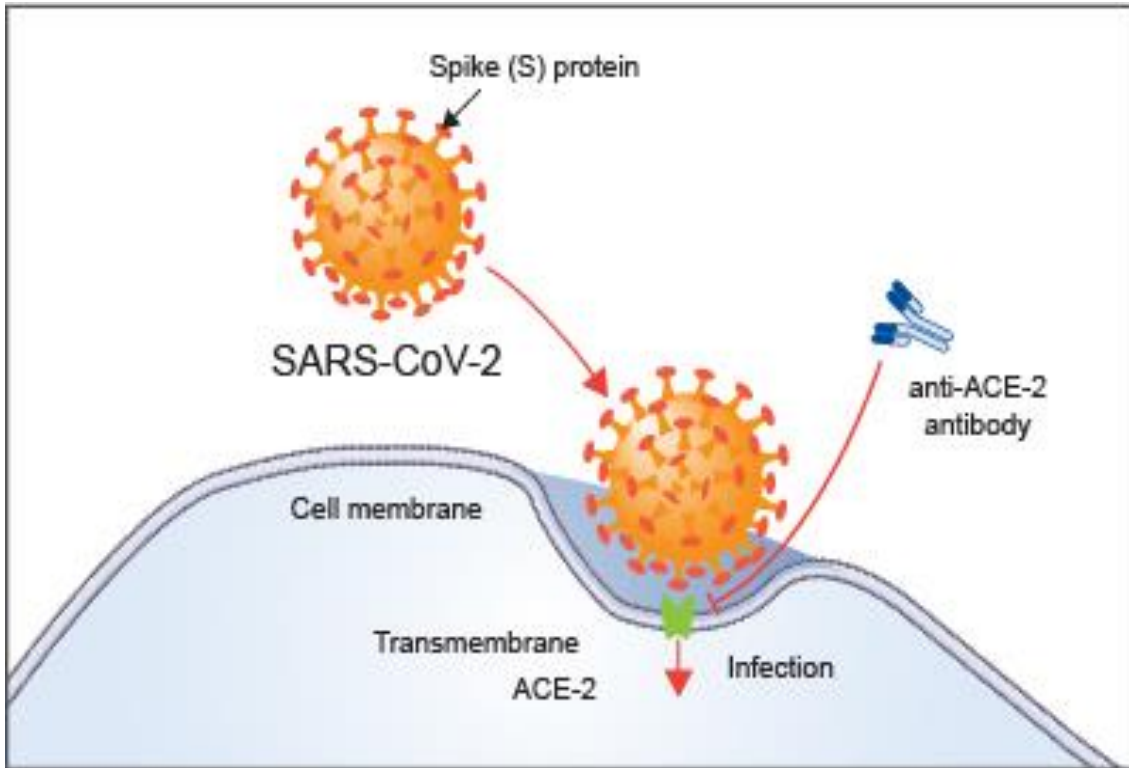


COVID-19



- Coronaviruses (CoVs), are enveloped, positive-sense RNA viruses, characterized by club-like spikes that project from their surface
- These club-shaped spike projections emanating from the surface of the virion are what bind to the host's cell surface receptors and being internalized
- A recent publication reported a negative charge seeking domain on the receptor binding site of the S-protein being integral to infecting humans

Mechanism of CoV Host Infectivity



- Coronavirus virus contains four main structural proteins: spike (S), membrane (M), envelope (E), and nucleocapsid (N) proteins
- The S protein (~150 kDa) - the distinctive spike structure on the surface mediates attachment to the host receptor

Scientific Validation supporting SHYCOCAN MoA

- The spike protein contains the virus' binding site, that adheres to host cells and enables it to enter and infect the body.
- Located 10 nanometers from the binding site on the spike protein is a positively charged domain.
- Earlier studies indicated that these sites are essential for virulent transmission.
- This positively charged site allows strong bonds between the novel coronavirus SARS-CoV-2's spike protein and the **negatively charged human-cell receptors.**
- 'Blocking' this site inhibits the virus from binding to the host cell – (**rationale for therapeutic development**).
- **Deemed as a viable prophylactic approach to decrease the virus' ability to infect humans**

SHYCOCAN's cascade of electrons with affinity to the negative charge-seeking S-protein can also 'inactivate' it

INTERNAL RESEARCH* provided insights into SHYCOCAN technology

- Research was initiated at Scalene labs in India* using Photon Mediated Electron Emitters (PMEEs)** for safe deployment in home/work environments.

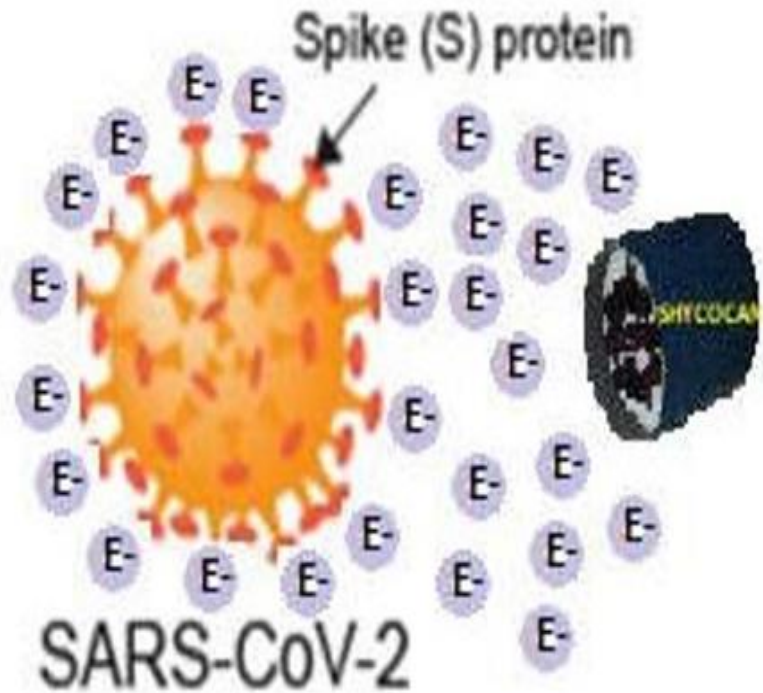
*SHYCOCAN is NOT an Ionizer that reported actively killing / disabling viruses** Proprietary component for kinetically charged hypercharge electron production

Conceptual Hypothesis for SHYCOCAN Technology*

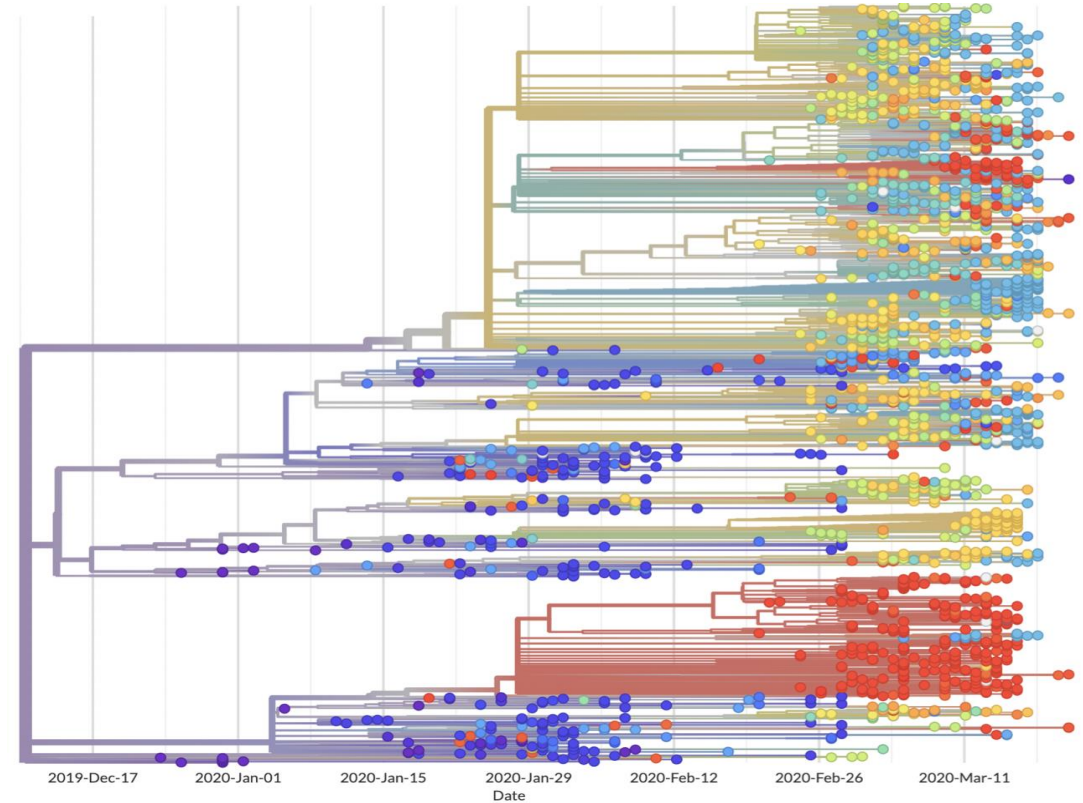
If negative charge-seeking is the guidance mechanism for the Spike Protein attracting it to host cells, then breaking this mechanism could block Coronavirus infectivity and spread

*This Hypothesis has since been tested in Biosafety Level-2 labs with active surrogates of coronaviruses

Mechanism of disarming the S-Protein of the CoV*



Schematic for Electron Cloud generated by the SHYCOCAN



Phylogenetic tree of CORONAVIRUSES
(NextStrain, *Genomic epidemiology of novel coronavirus*. 2020)

*The effective neutralization of the S-protein by the electron cloud was tested and found to disable viruses in the CoV family. Disabling additional members of this family including some emerging variants like the G4-EA HINI is potentially possible with the SHYCOCAN

SHYCOCAN™

Device Safety & Regulatory Compliance

- The device does not produce any ozone exceeding the regulated limit of 0.002 ppm. A comprehensive ozone test has been conducted
- Extensive safety tests conducted by the Underwriters laboratories (UL) for safe deployment in human environments –CE- marked Class I industrial device
- It is not a plasma generator or ionizer
- SHYCOCAN can be manufactured, distributed and marketed in the US and neighboring countries under US-FDA's Enforcement Discretion Guidance Policy during the COVID-19 Public Health Emergency*
- A 510K US-market clearance submission post COVID-19 PHE is underway
- **The SHYCOCAN can be safely deployed 24/7 in areas occupied by people**

* Please see www.shreis.com for SSTx Position statement on FDA / CDC related FAQs

Biological Efficacy Tests completed/ planned*

- Mechanism of SHYCOCAN inactivation of an EPA approved viral surrogate (Equine arteritis) was tested in a BSL 2 level lab.
- Viricidal activity ranged from a 3.2-3.435 Log_{10} reduction (99.9% effective).
- Effective destruction of the viral capsid of Influenza B (CoV family) was demonstrated.
- Viral load tested was equivalent to that expelled from a patient infected with Influenza.
- Testing using identical mammalian cell culture assays and SARS-CoV2 spiked viral loads is currently being planned with IRB in place.
- Real-world evidence collection underway in our R&D establishment where the device has been deployed and in use for over 10 months for adaptive / acquired immunity and antibody response evaluation.
- Volunteer sites will be identified for further analysis of data in the real-world, post deployment.



Photon Mediated Electron Emitter (PMEE)

THE DEVICE Design and Emission

- Scalene Hypercharge Corona* Canon (SHYCOCAN)
- Produces 10 to 100 trillion electrons per second allowing an electron density of ~ 6 trillion per cubic centimeter at a distance of at least 12 centimeters from the PMEEs
- The operating current is not more than 50 milli amperes for safety reasons but should be able to accelerate more than 1,500,000 eV.
- The switching frequency is 20 KHz

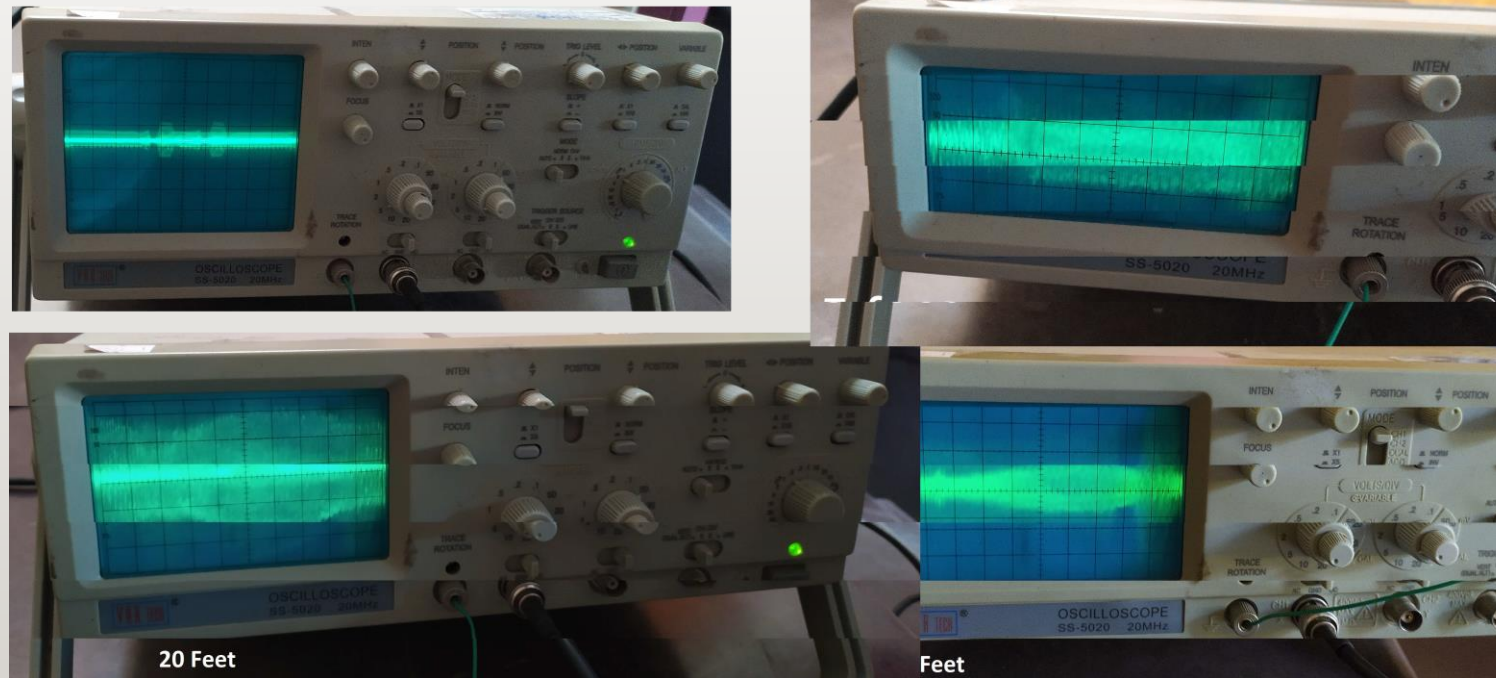
'Corona' Physics and the musical 'Canon' effect explained



Electron beam- induced
Luminescence of the SHYCOCAN

- Electron production is highly dependent on the precise geometry of the radiating surfaces of the PMEEs.
- Kinetically charged atoms in the air that are released as photons have certain energy and wavelength (capable of electroluminescence of a light bulb seen in the image)
- If the energy of the photon is below that of the ionizing potential, it is absorbed by other atoms and will be re-released.
- If the energy of the photon exceeds the ionizing potential, the atoms struck by the photon can release one or more electrons depending on the energy levels.
- This will result in a chain reaction (musical symphony/ canon effect) , producing a regular cloud of electrons that would envelope and inhibit the spike protein of coronavirus in the atmosphere and physically “attenuate” / disable the virus.

Signal Transmission Test (Field testing enabled)



Signal Detected at specific distances from the SHYCOCAN device

1. Baseline (ambient, with device switched off),
2. At 5 feet,
3. At 20 feet
4. At 42 feet.

Intelligent sensors to detect viral load in the atmosphere is an area of interest we are pursuing once the SHYCOCAN is deployed in 'hotspots', first responder stations etc.

Utilization of the SHYCOCAN

- The SHYCOCAN is a plug and play device.
- Once the device is switched on, photons are generated that in turn create a cascade of electrons almost instantaneously, to flood the intended area.
- The small fan at the rear end of the device is used only to cool the device, not to disseminate electrons that have high kinetic energy and travel at the speed of light.
- Air conditioning / HVAC systems have no limitations on the efficacy of the SHYCOCAN and the device can be routinely deployed.
- Device does not kill or destroy eco-friendly organisms making it safe for pets/plants in the home. Disclaimer: cleared for home safety; not specifically tested in pregnancy.



Manufacturing and assembly line production

- Mass manufacturing on-going offshore
- SSTx is open for bulk orders (see www.shreis.com)
- US manufacturing expected by Oct-Nov 2020
- Initial imports expected by Oct 1st 2020
- PMEEs will subsequently be imported and devices assembled off-shore and in the US to meet demands



GLOBAL SCOPE of SHYCOCAN OPERATIONS

SSTx Territories

Manufacture/Distribution/Marketing- Export/Import

	USA	Canada	Mexico	Caribbean	UAE	LATAM /UK	Asia	Remarks
Manufacture	+	+	+				+	
Distributors	++	++			++	++		
Retailers					++	+++		
eCommerce	SSTx							

Contact



Shreis Scalene Group of Companies

N. & S. America, Mexico & the Caribbean

Prof. Meena Augustus Ph.D. Co-Founder, CEO & CSO

|Rayol J. Augustus Ph.D. Co-Founder, President & COO

11516 Darnestown Rd, Gaithersburg, MD 20878, USA

Tel: +1 301-926-0566 | Fax: +1 301-238-5247 | Cell: +1 240 418 6007

www.shreis.com | Email: maugustus@shreis.com / john.augustus@shreis.com