Is this why President Trump Recovered so Quickly?

Regeneron's Antibody Cocktail

Figure 1: Regeneron's Antibody treatment shows great promise in the fight against COVID-19.

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In 1900, Nobel Laureate Emil von Behring demonstrated antibodies in blood plasma, or serum, could be transferred from one person or animal to another person, conferring immunity against an infectious agent—as illustrated in his work with horses to cure and prevent diphtheria.(1)

With advances in technology, medicine has transitioned from using convalescent serum to fully human recombinant antibodies.(2) Such technologies are now capable of creating animal models of human disease, using genetically modified, or "humanized," mice that produce fully human antibodies. This is the case of *VelociSuite*® technologies by Regeneron Pharmaceuticals.(3) Regeneron Pharmaceuticals, a leading biotechnology company based in Tarrytown, New York, is accelerating and improving traditional drug development through such technologies, as evidenced by their latest artificial "antibody cocktail" treatment for COVID-19—REGN-COV2.

REGN-COV2's development is a testament to Regeneron's expeditious drug discovery model, having started research efforts in the beginning of February of 2020 and moving into production at the start of June. Regeneron's antibody "cocktail" was developed using parallel efforts: deriving antibodies from both genetically humanized

mice as well as B cells sourced from convalescent patients.

This methodology enabled researchers to collect a swath of fully human antibodies with diverse sequences, binding properties, and antiviral activities.[2]

Fully human recombinant antibodies were surveyed for high degrees of potency and cross-referenced against similarly performing antibodies from human COVID-19 survivors.[4] Researchers selected a *set* of antibodies that bound to discrete, non-overlapping portions of the Receptor Binding Domain (RBD) of the SARS-CoV-2 spike protein. This selection process protects against a virus' proclivity for mutational escape.[4] This tactic was successfully employed during the development of treatments for Ebola, so it had promising applications for the SARS-CoV-2 pandemic.[2]

On September 29th, 2020, Regeneron announced its first data from a descriptive analysis from a concurrent Phase 1/2/3 clinical trial that showed a reduction in viral loads, time to alleviate symptoms (non-hospitalized), and medical visits.[6]

On October 1st, 2020, President Donald J. Trump contracted COVID-19, and that same day received a single eight gram dose of the polyclonal REGN-COV2 under the FDA's Expanded Access, or "Compassionate Use," authorization. This is a pathway for a patient to receive an investigational medical product outside of clinical trials when no satisfactory

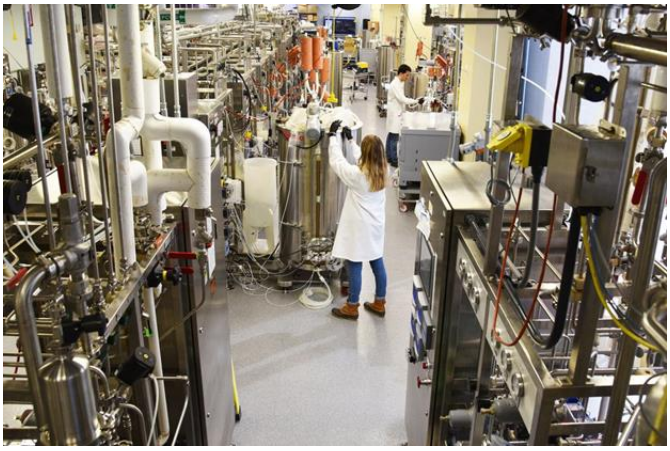


Figure 2: Regeneron, a New York based biotech company, is developing and testing a new antibody therapy for COVID-19.

alternatives are available.[7] In addition to the Regeneron Antibodies, President Trump also received doses of zinc, vitamin D, famotidine, dexamethasone, Remdesivir, melatonin, and a daily aspirin tablet.

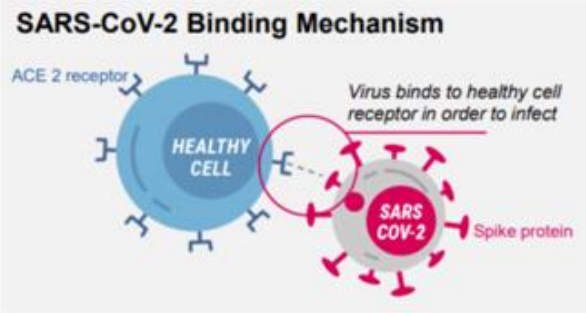
President Trump's expeditious recovery has largely been attributed to REGN-COV2, which the President has routinely touted as an "unbelievable" drug and a "cure."[8] Under the Trump Administration's Operation Warp Speed, Regeneron was awarded $450 million in federal funding to accelerate the manufacturing and distribution of REGN-COV2. Following President Trump's illness, Regeneron submitted an Emergency Use Authorization application to the FDA to accelerate its availability. If approved, the Trump Administration has agreed to make the therapeutic available to the American people at no cost and be responsible for its distribution.[4]

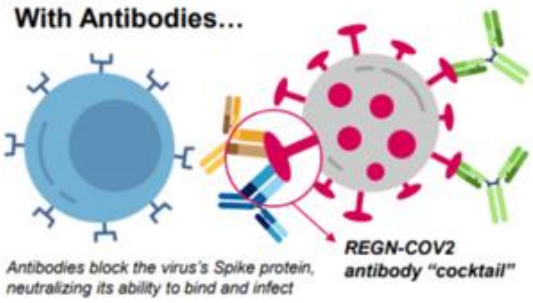
Clinical data continues to be released as part of its ongoing investigational study. Read the latest efficacy study here:

https://investor.regeneron.com/news-releases/news-release-details/regenerons-covid-19-outpatient-trial-prospectively-demonstrates

Regeneron's method of drug development is so well established, that it reflects in their mission statement: "*To use the power of science to bring new medicines to patients ...* ***over and over again.”***

HOW ANTIBODIES WORK AGAINST SARS-COV-2





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