

Some Basic Information on Corona virus

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Abstract

COVID-19 is a novel coronavirus with an outbreak of unusual viral pneumonia in Wuhan, China, and then pandemic. Based on its phylogenetic relationships and genomic structures, the COVID-19 belongs to genera Betacoronavirus. In this review article, we are also discussing on the history and some necessary information on Coronavirus.

Keywords: Nobel Corona virus; Covid-19; Structure.

His research has been done by the Pacific Northwest National Laboratory of America on forests around the world. The study says that now the forests and environment around the world are changing. Damages caused by fire, drought, strong wind in woods are reducing the lifespan of forests, and the balance of the environment is deteriorating. In this research, scientists tried to know how it reached humans. There are two arguments about this. One is that the old coronavirus changed to animals and then to humans. The other idea is that this is the new virus and went from bats to another and from there into humans. Scientists have disagreed with the possibility of bats coming directly into humans.

1 History of Covid-19

China had sequenced the genome of Covid-19 immediately after its identification and made the data public. Scientists from Covid-19's genome researched its evolution and development. Scientists have deeply studied the structure of the virus. Analyzed the genetic template of the spike protein found in it. It also investigated the structure of the receptor-binding domain (RBD) within it. RBD is the part of the virus that sticks to a human cell. It attacks the blood pressure controlling gene ACE-2. Scientists say that the structure of the spike protein and RBD makes it clear that it is not created by genetic engineering but is the result of natural changes.

According to research, the structure of the virus's backbone also confirms its natural origin. The backbone structure of the Covid-19 does not match the appearance of the existing spine of the corona or any other virus. Instead, it is new. If an infection is prepared by genetic engineering in the lab, its backbone must be created from the existing illness.

2 Structure Coronavirus 19

It belongs to the family of coronaviruses, named for crownlike spikes on their surfaces. SARS CoV-2 can cause COVID-19, a contagious viral infection that attacks your throat and lungs primarily. What happens in your body when you contract the coronavirus? What exactly causes your body to develop pneumonia? And how would a vaccine work? The coronavirus must infect living cells to reproduce. Let's have a closer look. Inside the virus, genetic material contains the information to make more copies of itself. A protein shell provides a hard protective enclosure for the genetic material as the virus travels between the people it infects. An outer envelope allows the virus to infect cells by merging with the cell's outer membrane. Projecting from the shell are spikes of protein molecules. Both a typical influenza virus and Both a typical influenza virus and like a key to get inside a cell in your

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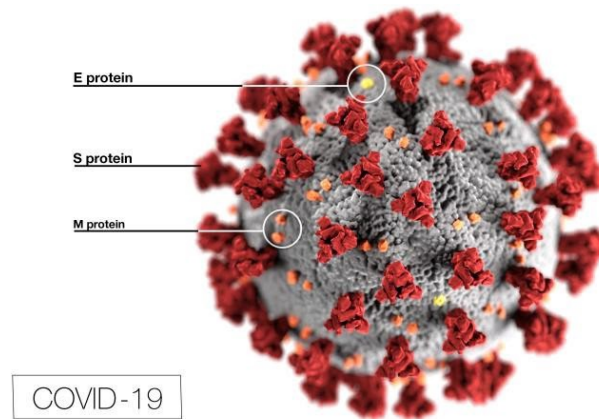


Figure 1: Structure coronavirus 19

body, where it takes over its internal machinery, repurposing it to build the components of new viruses. When an infected person talks, coughs or sneezes, droplets carrying the virus may land in your mouth or nose and then move into your lungs. Once inside your body, the virus comes into contact with cells in your throat, nose, or lungs. One spike on the virus inserts into a receptor molecule on your healthy cell membrane like a key in a lock. This action allows the virus

A packaging structure in your cell then carries the spikes in vesicles, which merge with your cell's outer layer, the cell membrane. All the parts needed to create a new virus gather just beneath your cell's membrane.

Then a new virus begins to butt off from the cell's membrane. For this, we'll have to look into your lungs. Each lung has separate sections, called lobes. Usually, as you breathe, air moves freely through your trachea or windpipe, then through large tubes, drawn bronchi, through smaller tubes, called bronchioles, and finally into tiny sacs, called alveoli.

Your airways and alveoli are flexible and springy. When you breathe in, each air sac inflates like a small balloon. And when you exhale, the sacs deflate. Small blood vessels, called capillaries, surround your alveoli. Oxygen from the air you breathe passes into your capillar-

to get inside your cell. A typical flu virus would travel inside a sack made from your cell membrane to your cell's nucleus that where your cell houses all its genetic material. The coronavirus, on the other hand, doesn't need to enter the host cell nucleus.

It can directly access parts of the host cell, called Ribosomes. Ribosomes use genetic information from the virus to make viral proteins, such as the spikes on the virus's surface.

ies, then carbon dioxide from your body moves out of your capillaries into your alveoli so that your lungs can get rid of it when you exhale. Your airways catch most germs in the mucus that lines your trachea, bronchi, and bronchioles. In a healthy body, hair-like cilia lining the tubes constantly push the mucus and germs out of your airways, where you may expel them by coughing. Normally, cells of your immune system attack viruses and bacteria that make it past your mucus and cilia and enter your alveoli.

However, if your immune system is weakened like in the case of coronavirus infection, the virus can overwhelm your immune cells, and your bronchioles and alveoli become inflamed your immune system attacks the multiplying viruses. The inflammation can cause your alveoli to fill with fluid, making it difficult for your body to get the oxygen it needs. You could develop lo-

bar pneumonia, where one lobe of your lungs is affected, or you could have bronchopneumonia that affects many areas of both lungs. Pneumonia may cause... difficulty breathing chest pain coughing fever, and chills confusion headache muscle pain and fatigue. It can also lead to more severe complications: respiratory failure occurs when your breathing becomes so severe that you need a machine called a ventilator to help you breathe. These are the machines that save lives and medical device companies currently ramp up production for. Whether you would develop these symptoms depends on a lot of factors, such as your age and whether you already have an existing condition.

While all this all sounds scary, the push to develop a coronavirus vaccine is moving at high speed. Studies of other coronaviruses lead most researchers to assume that people who have recovered from a SARS-CoV-2 infection could be protected from reinfection for a period of time. But that assumption needs to be backed by empirical evidence, and some studies suggest otherwise. There are several different approaches for a potential vaccine against the coronavirus. The basic idea is that you would get a shot that contains faint versions of the virus. The vaccine would expose your body to the virus that is too weak to cause infection but strong enough to stimulate an immune response. Within a few weeks, cells in your immune system would make markers called antibodies, which would be specific for only the coronavirus or specifically its spike protein. Antibodies then attach to the virus and prevent it from attaching to your cells. Your immune system then responds to signals from the antibodies by consuming and destroying the clumps of viruses. If you then catch the real virus at a later stage, your body would recognize and destroy it. In other words, your immune system is now primed. Collecting evidence on whether this will be possible, safe, and effective is part of taking researchers so long to develop a vaccine. It is a race against time to develop a vaccine amid a pandemic. Each step in vaccine development

usually takes months, if not years. An Ebola vaccine broke records by being ready in five years. The hope here is to develop one for the new coronavirus in a record-breaking 12 to 18 months. While all this will take time, stay home if you can to protect the most vulnerable, and don't forget to wash your hands for at least 20 seconds.

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