INFORMATION ON SARS-2 CoV, THE VIRUS CAUSING COVID-19

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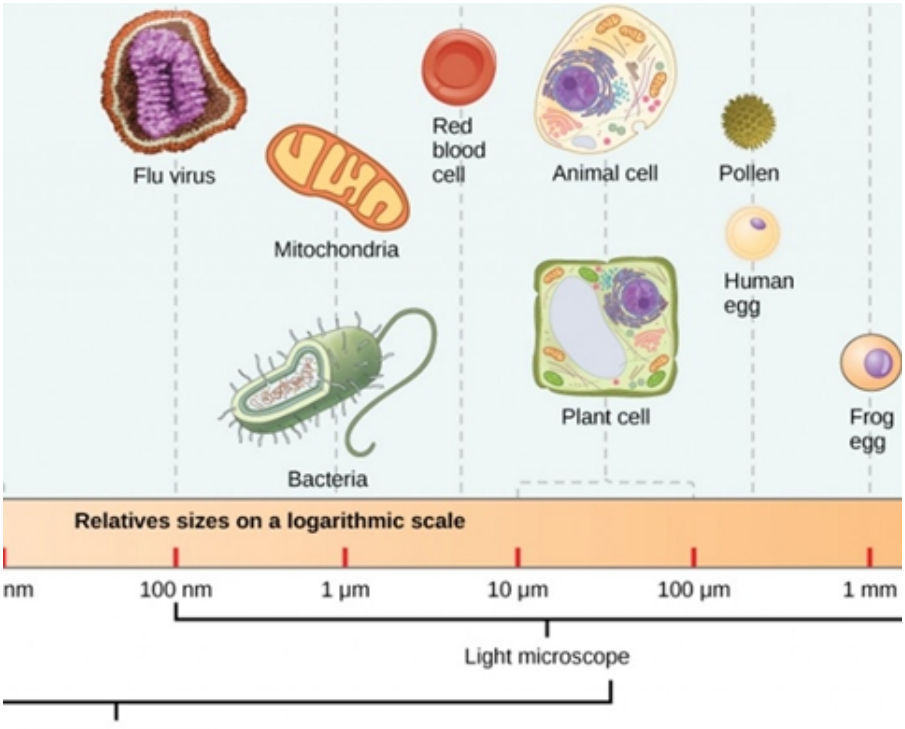
1. WHAT ARE VIRUSES?

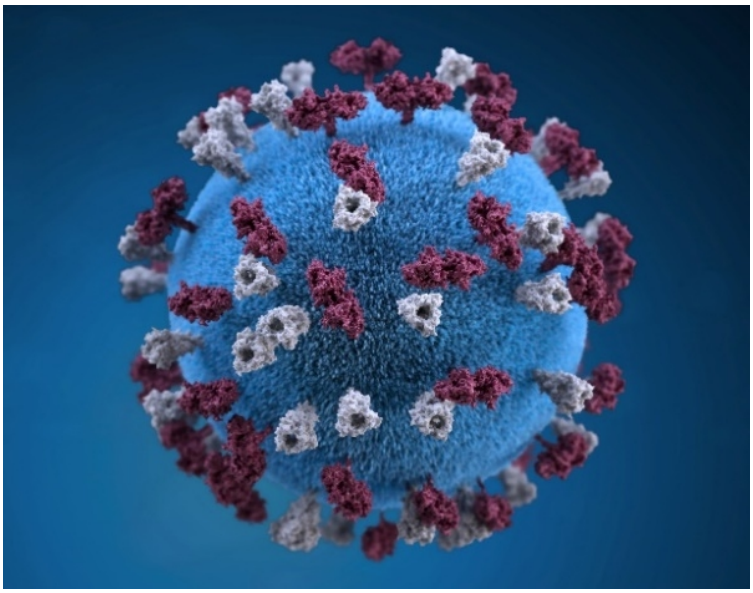
Viruses are not classified as living organisms as they lack most of the structures required for metabolizing and replicating independently; viruses are obligate parasites. All viruses are microscopic, and they infect and hijack all kinds of living cells such as those in bacteria, fungi, plants, and animals, including humans cells. Viruses entirely depend on a host cell to replicate and produce more viral particles, which can go on to infect other cells and other organisms.



https://opentextbc.ca/biology/chapter/12-1-viruses/

2. WHAT IS COVID-19?

The novel Coronavirus, named SARS2-CoV which stands for Severe Acute Respiratory Syndrome CoronaVirus 2, causes the illness known as COVID-19. Coronaviruses are given this name because they have a protein coat that projects spike-like structures that resemble a crown, from the Latin term “corona” (Singhal et al., 2020).



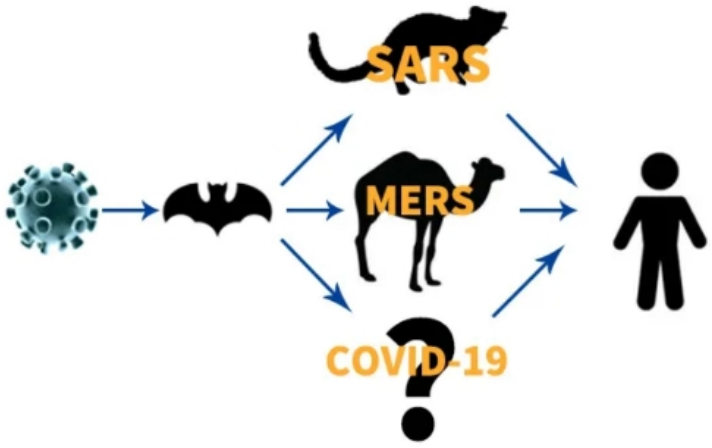
3. WHY IS THIS VIRUS SO CONTAGIOUS?

Research points out that the ability of this novel coronavirus to infect host cells lies within its spikes, which are located on the outside of the virus and attach to a specific protein receptor located on the plasma membrane of healthy cells. Specifically, the viral spikes fuse to a receptor called the ACE2 receptor, which is found in many types of cells in our bodies. Recent studies suggest that SARS-CoV-2 could have up to 20 times more affinity for the ACE2 than previous coronaviruses (South et al., 2020). Once a person is exposed to SARS-2CoV, the virus will enter the upper respiratory tract and bind very tightly to the cells in the mucosa. The cells engulf the virus which, once inside, takes over the cell’s machinery and produces more viruses, which are released to go and infect other cells or other people’s cells. Most coronaviruses don’t bind or replicate in the upper respiratory tract as efficiently as SARS-2CoV, and this seems to be the reason for its spread.

4. WHERE DID THIS VIRUS COME FROM?

The emergence of SARS-CoV-2 is the culmination of inadequate systemic developments in agriculture, population expansion, strategic scientific methodology, and lack of global pandemic preparedness. It is vital that we understand that the emergence of SAR-CoV-2 is not just the result of a rare viral mutation, but the culmination of many factors, including encroachment on wildlife habitats, expanding bat migrational territories, cross species transmission and our general susceptibility to viral infection by coronaviruses. Scientists are examining the data available

regarding how viruses have emerged because of cross-species viral transmission from bats to farmed animals, and how our encroachment on natural habitats has facilitated these events. The evolution of SARS-CoV-2 follows the patterns described for other similar events of cross-species transmission, such as SARS-1 and MERS.



https://covid-19.chinadaily.com.cn/a/202003/29/WS5e7ff7c0a310128217282c16.html

5. WHEN WILL WE BE ABLE TO SOCIALIZE AND VISIT OUR FAMILY AND FRIENDS?

Even though the world's scientists are working around the clock trying to decipher the virus, there is no available vaccine nor effective medications yet. Several aspects of the molecular components of the virus are still unclear. Scientists are reporting new mutations of the virus as they struggle to stop its spread and governments are trying their best to produce timely policies while supporting their citizens as the quarantine is in place. In the meantime, because we know the virus is very contagious, we must take every precaution in order to prevent the most vulnerable among us from getting infected.

https://www.who.int