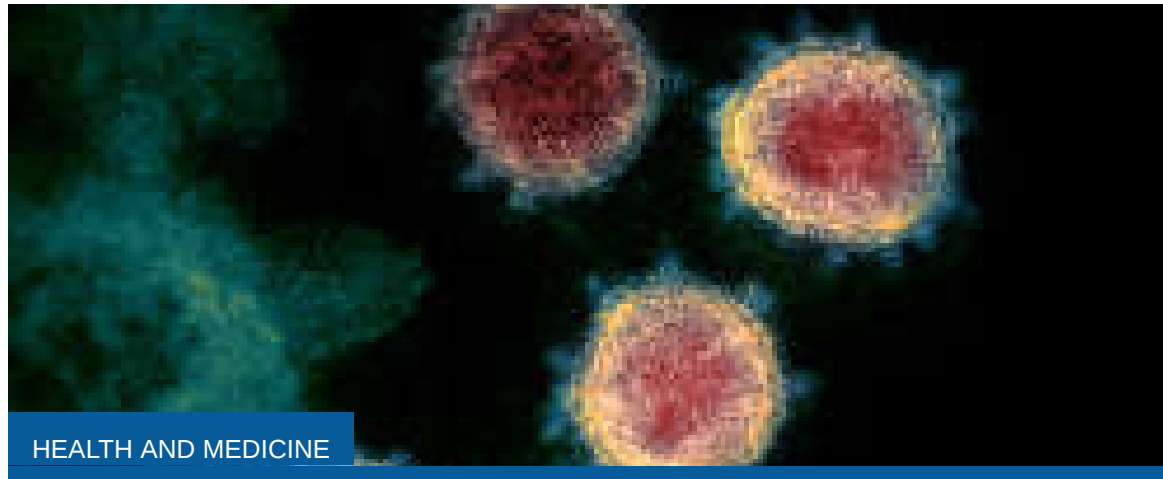


## The Novel Coronavirus Was Not Engineered In A Lab, New Research Confirms

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This transmission electron microscope image shows SARS-CoV-2—also known as 2019-nCoV, the virus that causes COVID-19—isolated from a patient in the US. NIAID-RML

**BY TOM HALE** 18 MAR 2020, 14:26

Combatting the conspiracy theories and [misinformation](#) making the rounds, new research has proved that the novel coronavirus SARS-CoV-2 responsible for the COVID-19 outbreak was not engineered in a lab.

A new study, published in the journal [Nature Medicine](#), has traced back the evolution of SARS-CoV-2 and compared its structure to other coronaviruses to show that it's the product of natural evolution. The research also sheds some light on the possible origins of the virus too.

“By comparing the available genome sequence data for known coronavirus strains, we can firmly determine that SARS-CoV-2 originated through natural processes,” said study author Kristian Andersen, PhD, an associate professor of immunology and microbiology at Scripps Research, in [a statement](#).

Back in February, [a widely shared article](#) claimed that “the coronavirus may have leaked from a lab.” The story claimed that the virus might have escaped from one of China’s bioweapons labs in Wuhan. Although the article was

clearly full of jumps in logic and quite a lot of BS, this new research has now discredited this wild (and dangerous) theory.

One of the clearest clues comes from the molecular structure of SARS-CoV-2. The researchers note the novel coronavirus features a distinct “backbone” structure that differed massively from the ones found on previously studied coronaviruses and appears to resemble related viruses found in bats and pangolins. If you were to hypothetically manufacture a novel coronavirus in the lab, they say, this would be an extremely unexpected feature to use.

The receptor-binding domain of the novel coronavirus – a kind of “lock and key” used by the virus to access host cells – contains spike proteins that are extremely effective at targeting a receptor on human cells that regulates blood pressure. According to the researchers, its effectiveness strongly suggests it’s the result of natural selection, not the product of genetic engineering.

“These two features of the virus, the mutations in the RBD portion of the spike protein and its distinct backbone, rules out laboratory manipulation as a potential origin for SARS-CoV-2” explained Andersen.

Genomic sequencing analysis of SARS-CoV-2 also showed how the infection might have jumped from animals to humans.

In one possible scenario, the virus might have evolved to its current pathogenic state through natural selection in a non-human host and then jumped to humans. Alternatively, a harmless version of the virus may have jumped from an animal host into humans, then evolved to its current pathogenic state within the human population. While this theory is less likely, it’s potentially more worrying as it suggests the possibility of another pathogenic strain of the virus that could make a second leap into humans.

For now, it isn’t yet possible to know which of the scenarios is most likely, although scientists are keen to find out as it could help researchers understand and predict future outbreaks.