

ANALYSIS

Much remains to be understood about SARS-CoV-2, the newly emergent virus causing the COVID-19 pandemic infection. Here is some of what scientists know about its structure, to date.



ENVELOPE (E) PROTEIN

LIPID MEMBRANE

MEMBRANE (M) PROTEIN

SPIKE (S) PROTEIN

ENVELOPE (E) PROTEIN

This small structural protein (purple) is involved with the virus' life cycle, including the assembly of other proteins and development of the COVID-19 disease.

LIPID MEMBRANE

This membrane (gray) is composed of a double layer of polarized fat molecules. Similar to how dish soap washes away oily grease, soap breaks down this fat membrane, destroying the virus. This is why handwashing is recommended to prevent the spread of coronavirus.

MEMBRANE (M) PROTEIN

This is the most abundant structural protein (yellow) in the virus. It defines the shape of the lipid membrane, which surrounds the virus, and may help it evade the immune system.

SPIKE (S) PROTEIN

This structural protein (red) is what gives the coronavirus its name, as the proteins, seen through an electron microscope, cause the virus to appear to have a corona or crown of spikes. These spikey proteins hook onto human cells and pull the virus inside, where the virus can co-opt cellular machinery and begin churning out copies of itself. Because of its essential role in transmission, the S protein is now a key target for vaccines and therapeutic antibodies.

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