

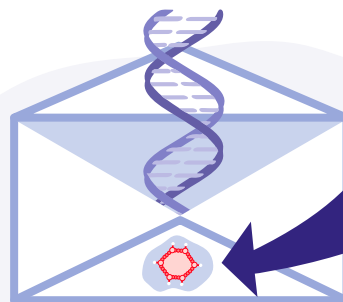
How Adenovirus-Based Vaccines for COVID-19 Work

What Is an Adenovirus?

Viruses are known for being good at getting into cells. Adenoviruses are a group of viruses that usually cause common illnesses and symptoms like fevers and coughs. But, scientists have learned how to disable the genes that cause illness while keeping the ability to get into cells to treat or prevent disease.

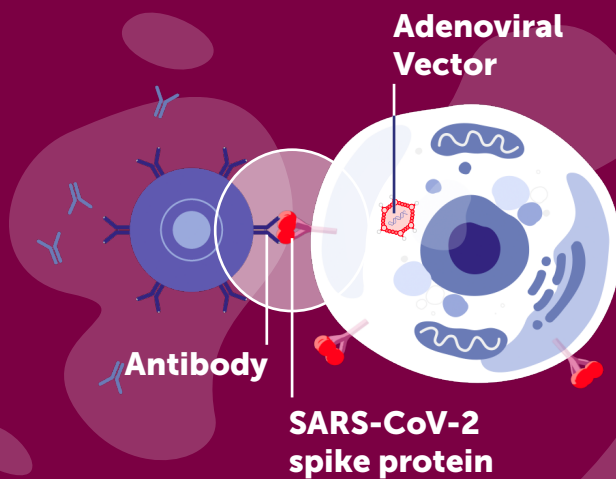
An Envelope With a Message

An adenovirus can be used as a vector, or carrier, to deliver a gene to cells with instructions to make various proteins. These proteins can help our body function properly or fight disease. Think of an adenoviral vector as an envelope with a message inside.



Preparing to Fight the Virus

The adenoviral vector delivers a gene that will instruct cells to temporarily make just enough of the SARS CoV-2 spike protein to activate the immune system and produce protective antibodies. The cells aren't provided with enough instructions to build the full virus, so the vaccine cannot cause COVID-19. If a person is then exposed to the virus, the immune system will detect the familiar antigens and attack them.



Prioritizing Safety and Efficacy

All COVID-19 vaccines are studied in clinical trials, and are strictly reviewed by an agency that oversees medical products. In the U.S., this is the FDA. Clinical trials study how an intervention interacts with the body, and if it is safe and effective, before it is made available to the public. The FDA has programs to accelerate developing and testing preventive measures, such as a vaccine, that can aid a public health emergency.



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