What is a protein-based vaccine?

Protein-based vaccines have been protecting you from all sorts of infectious diseases since they were first developed in the 1980s.[1] It's a well-established technology, but do you know what makes a protein-based vaccine?[1,2]

Protein-based viral vaccines include carefully identified protein fragments of a virus, chosen for their ability to stimulate your immune system, which are often combined with another substance that helps to increase the immune system response to the protein fragments, called an adjuvant.[1]

Protein fragments by themselves are harmless and incapable of causing disease; they have no function on their own.[1] So why use them? Once injected, your immune system recognizes that select fragments used in protein-based vaccines do not belong.[1] This results in your immune system training your body to recognize the whole virus.[1] This helps protect you soon after vaccination as it enables your immune system to create antibodies and defensive white blood cells which, should you later become infected, will be used by your body to fight the virus.[3]

It's a tried-and-true technology with an established safety profile.[1,2]

References

1. CDC. Understanding How COVID-19 Vaccines Work. Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/how-they-work.html [Accessed: September 2023]

2. GAVI. What are protein subunit vaccines and how could they be used against COVID-19? Available at: https://www.gavi.org/vaccineswork/what-are-protein-subunit-vaccines-and-how-could-they-be-used-against-covid-19 [Accessed: September 2023]

3. Mayo Clinic. Different types of COVID-19 vaccines: How they work. Available at: https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/different-types-of-covid-19-vaccines/art-20506465 [Accessed: September 2023]