

Messenger RNA (or mRNA) is a vital part of protein production. In human and animal cells, mRNA is transcribed from DNA in cell nuclei, and then used by the cell to produce proteins. mRNA vaccines (including the U.S. COVID-19 vaccines) and therapies are based on the idea that well-designed, tested, and packaged mRNA molecules can be safely introduced into humans and used by one's own body to produce desired proteins and therapies -- without introducing pathogens or interacting with DNA. (Since mRNA is typically/naturally produced *by* DNA and helper enzymes, and sent *out of the cell nucleus* to make proteins, engineered mRNA never enters the cell nucleus or interacts with DNA.)