

COVID Vaccine Ingredients

There are two COVID-19 messenger-ribonucleic acid (mRNA) vaccines currently authorized for emergent use in the United States: the Pfizer-BioNTech and the Moderna vaccines.

The Pfizer-BioNTech COVID-19 vaccine is made of the following ingredients:

- **mRNA** – Also known as messenger ribonucleic acid, mRNA is the only active ingredient in the vaccine. The mRNA molecules contain the genetic material that provide instructions for our body on how to make a viral protein that triggers an immune response within our bodies. The immune response is what causes our bodies to make the antibodies needed to protect us from getting infected if exposed to the coronavirus.
- **Lipids** – The following lipids are in the new COVID vaccine. Their main role is to protect the mRNA and provide somewhat of a “greasy” exterior that helps the mRNA slide inside the cells.
 - (4-hydroxybutyl)azanediylbis(hexane-6,1-diyl)bis
 - (2-hexyldecanoate), 2 [(polyethylene glycol)-2000]-N,N-ditetradecylacetamide
 - 1,2-Distearoyl-snglycero-3- phosphocholine
 - cholesterol
- **Salts** – The following salts are included in the Pfizer vaccine and help balance the acidity in your body.
 - potassium chloride
 - monobasic potassium phosphate
 - sodium chloride
 - dibasic sodium phosphate dihydrate
- **Sugar** – Basic table sugar, also known as sucrose, can also be found in the new COVID vaccine. This ingredient helps the molecules maintain their shape during freezing.

The Moderna COVID-19 Vaccine is made of the following ingredients:

- **mRNA** – Like the Pfizer BioNTech vaccine, Moderna’s also uses mRNA technology to build antibodies against COVID-19.
- **Lipids** – The Moderna vaccine also requires lipids to help deliver the mRNA to the cells.
 - SM-102
 - 1,2-dimyristoyl-rac-glycero3-methoxypolyethylene glycol-2000 [PEG2000-DMG]
 - cholesterol
 - 1,2-distearoyl-snglycero-3-phosphocholine [DSPC]

The remaining ingredients (below), including acids, acid stabilizers, salt and sugar all work together to maintain the stability of the vaccine after it’s produced.

- **Acids**
 - Acetic acid
- **Acid Stabilizers**
 - Tromethamine & Tromethamine hydrochloride
- **Salts**
 - Sodium acetate
- **Sugar**
 - Sucrose