CG is proud to be an important part of the supply chain for the production of COVID-19 vaccines with the delivery of a total of 16 products. The products are used in various areas from the cleaning of the production facilities to process solutions in the vaccine itself.
Gene-based vaccines:

**Vector vaccine**
- A harmless virus transports the “blueprint” for the antigen into the human cells.
- Following the vaccination, the body’s own cells take on producing the antigen.
- The immunocytes recognise this and build up protection.

**mRNA vaccines**
- The genetic code of the antigen is produced as a vaccine.
- Following the vaccination, the body’s own cells take on producing the antigen.
- The immunocytes recognise this and build up protection.

Source: www.pharma-fakten.de

---

**Vaccines and CG**

**WHAT PRODUCTS CG PRODUCES AND DELIVERS**

**CG PHARMA PRODUCTION**
- Elution buffers for substance purification (downstream process)
- Citrate buffers
  - Scrubbing solution for lipid nanoparticles (LNPs)

**mRNA VACCINE**
- mRNA*active ingredient
- Lipids
  - Molecules form a protective capsule around the RNA, support transport and protect the RNA from being broken down.
- Water for injection

**CG PHARMA PRODUCTION**
- Phosphate-buffered saline (PBS)
  - Ingredient to regulate pH value to match the human organism

**CG PHARMA PRODUCTION**
- Sucrose solution
  - This is a protective shell that ensures that the lipids do not stick together at cold storage temperatures.

**CG PHARMA PRODUCTION**
- Process solutions for downstream applications
  - Sanitisation, CIP medium, membrane cleaning of the production facilities

**VECTOR VACCINE**
- mRNA
  - Active ingredient
- Lipids
  - Molecules form a protective capsule around the RNA, support transport and protect the RNA from being broken down.

Source: www.pharma-fakten.de