



INGREDIENT LIST OF US-APPROVED COVID VACCINES

Pfizer-BioNTech COVID-19 Vaccine

| Ingredient Name | Registry Number | First Record | Prevalence in CAS Content ¹ | Other Uses |
|--|-----------------|--------------|--|--|
| Sodium Chloride | 7647-14-5 | 1900 | high | common table salt |
| Sucrose | 57-50-1 | 1901 | high | sugar |
| Monobasic potassium phosphate | 7778-77-0 | 1904 | high | Gatorade |
| Potassium chloride | 7447-40-7 | 1900 | high | salt replacer in low-sodium foods; baby formula |
| Cholesterol | 57-88-5 | 1901 | high | occurs naturally in humans and animals. Common foods include cheese, eggs, meat. |
| dibasic sodium phosphate dihydrate | 10028-24-7 | 1946 | medium ² | Jell-O |
| 1,2-distearoyl-sn-glycero-3-phosphocholine | 816-94-4 | 1949 | medium | A phosphatidylcholine (PC) found in foods like eggs and soybeans. Pure DSPC used in liposomes or lipid nanoparticles |
| 2[(polyethylene glycol (PEG))-2000]-N,N-ditetradecylacetamide | 1849616-42-7 | 2015 | low | other vaccine studies include HIV, rotavirus; cancer therapies |
| (4-hydroxybutyl)azanediylbis(hexane-6,1-diyl)bis(2-hexyldecanoate) | 2036272-55-4 | 2016 | low | other vaccine studies include HIV, influenza, rabies, yellow fever, RSV, cancer |

mRNA encoding the spike protein of the COVID-19 coronavirus, SARS-CoV-2

Moderna COVID-19 Vaccine

| Ingredient Name | Registry Number | First Record | Prevalence in CAS Content ¹ | Other Uses |
|-----------------|-----------------|--------------|--|--|
| Sucrose | 57-50-1 | 1901 | high | sugar |
| Acetic acid | 64-19-7 | 1876 | high | distilled white vinegar |
| sodium acetate | 127-09-3 | 1928 | high | salt and vinegar chips |
| Cholesterol | 57-88-5 | 1901 | high | occurs naturally in humans and animals. Common foods include cheese, eggs, meat. |
| tromethamine | 77-86-1 | 1944 | medium | cosmetics, serums |

| | | | | |
|---|--------------|------|--------|--|
| tromethamine hydrochloride | 1185-53-1 | 1949 | medium | cosmetics, serums |
| 1,2-distearoyl-sn-glycero-3-phosphocholine | 816-94-4 | 1949 | medium | A phosphatidylcholine (PC) found in foods like eggs and soybeans. Pure DSPC used in liposomes or lipid nanoparticles |
| PEG2000-DMG: 1,2-dimyristoyl-rac-glycerol, methoxypolyethylene glycol | 160743-62-4 | 1995 | low | targeted therapies, including targeted chemotherapy |
| SM-102: heptadecan-9-yl 8-((2-hydroxyethyl)(6-oxo-6-(undecyloxy)hexyl) amino) octanoate | 2089251-47-6 | 2017 | low | other vaccine studies include Zika virus, tropical viruses, cancer vaccines |

mRNA encoding the spike protein of the COVID-19 coronavirus, SARS-CoV-2

Johnson & Johnson/Janssen COVID-19 Vaccine

| Ingredient Name | Registry Number | First Record | Prevalence in CAS Content ¹ | Other Uses |
|--------------------------------|-----------------|--------------|--|---|
| Sodium Chloride | 7647-14-5 | 1900 | high | common table salt |
| Ethanol | 64-17-5 | 1900 | high | alcoholic beverages, hand sanitizer |
| polysorbate-80 | 9005-65-6 | 1906 | high | sorbitol-based emulsifier: used in ice creams, topical use includes soaps |
| citric acid monohydrate | 5949-29-1 | 1944 | high ² | Naturally occurring acid in citrus fruits. Anhydrous form used in bath bombs, or as food additive to add tartness. Soda |
| trisodium citrate dihydrate | 6132-04-3 | 1939 | medium ² | Jell-O, Sprite, Gatorade |
| 2-hydroxypropyl-β-cyclodextrin | 7585-39-9 | 1977 | high | naturally converted from starch by enzymes; widely used excipient; other vaccines since 1984 |

recombinant, replication-incompetent adenovirus type 26 expressing the SARS-CoV-2 spike protein

¹ Based on number of references for given Registry number. (high > 50,000, medium 10,000-50,000, low < 10,000)

² Includes occurrence of ingredient crystallized with one or two water molecules, and occurrence without water.

CAS is a leader in scientific information solutions, partnering with innovators around the world to accelerate scientific breakthroughs. CAS employs over 1,400 experts who curate, connect, and analyze scientific knowledge to reveal unseen connections. For over 100 years, scientists, patent professionals, and business leaders have relied on CAS solutions and expertise to provide the hindsight, insight, and foresight they need so they can build upon the learnings of the past to discover a better future. CAS is a division of the American Chemical Society.

Connect with us at cas.org

cas.org

© 2022 American Chemical Society. All rights reserved.

CASGENENGWHP10021921109

CAS

A division of the
American Chemical Society

