

Excipients in Vaccines Not Routinely Recommended by Vaccine Name

| Excipient | Purpose | Vaccine Name | Vaccine Type | Amount per 0.5 mL dose* |
|---|-------------------------------|------------------------------|------------------------------|----------------------------|
| Albumin, Human | Diluent/Stabilizer | ACAM2000 | Smallpox/Mpox | 2% |
| Calf lymph vaccine | Growth Medium | ACAM2000 | Smallpox/Mpox | Amount not specified in PI |
| Glycerin | Medium Nutrient | ACAM2000 | Smallpox/Mpox | 50% (v/v) |
| Mannitol | Stabilizer | ACAM2000 | Smallpox/Mpox | 5% |
| Neomycin | Antimicrobial | ACAM2000 | Smallpox/Mpox | Trace Amounts |
| Phenol | Preservative | ACAM2000 | Smallpox/Mpox | 0.25% (v/v) |
| Polymyxin B | Antimicrobial | ACAM2000 | Smallpox/Mpox | Trace Amounts |
| Sodium Chloride | Buffer | ACAM2000 | Smallpox/Mpox | 0.5- 0.7% |
| Vero Cells | Growth Medium | ACAM2000 | Smallpox/Mpox | Amount not specified in PI |
| Acetone | Solvent | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Albumin, Human | Diluent/Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Albumin, Human (WI-38) | Diluent/Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Alcohol | Solvent | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Castor Oil | Tablet Coating | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Cellulose, Acetate Phthalate | Controls formulation release | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Cellulose, Microcrystalline | Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Dextrose | Medium Nutrient | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| D-fructose | Medium Nutrient | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| D-mannose | Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| DMEM | Growth Medium | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Fetal Bovine Serum | Growth Medium | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Lactose, Anhydrous | Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Magnesium Stearate | Lubricant for capsule filling | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Monosodium Glutamate | Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Plasdone C | Improves solubility | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Polacrillin Potassium | Buffer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Potassium Phosphate | Buffer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Sodium Bicarbonate | Buffer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Sucrose | Stabilizer | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Yellow #6 Aluminum Lake Dye | Colorant | Adenovirus Type 4 and Type 7 | Adenovirus Type 4 and Type 7 | Amount not specified in PI |
| Beta-propiolactone | Viral Inactivator | AUDENZ | Influenza H5N1 | ≤0.1 mcg |
| Cetyltrimethylammonium Bromide (CTAB) | Protein Purifier | AUDENZ | Influenza H5N1 | ≤ 4.5 mcg |
| Citric Acid Monohydrate | Medium Nutrient | AUDENZ | Influenza H5N1 | 0.04 mg at pH 6.5-7.7 |
| Madin Darby Canine Kidney (MDCK) cell DNA | Residual Medium | AUDENZ | Influenza H5N1 | ≤10 ng |
| Madin Darby Canine Kidney (MDCK) cell protein | Residual Medium | AUDENZ | Influenza H5N1 | ≤3.15 mcg |
| MF59C.1 Adjuvant (MF59) | Adjuvant | AUDENZ | Influenza H5N1 | Amount not specified in PH |
| Polysorbate 80 | Surfactant | AUDENZ | Influenza H5N1 | 1.175 mg |
| Sodium Citrate Dihydrate | Buffer | AUDENZ | Influenza H5N1 | 0.66 mg |

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|---|-----------------------|-----------------------|----------------|-------------------------------------|
| Sorbitan Trioleate | Stabilizer | AUDENZ | Influenza H5N1 | 1.175 mg |
| Squalene | Adjuvant | AUDENZ | Influenza H5N1 | 9.75 mg |
| Thimerosal | Preservative | AUDENZ | Influenza H5N1 | 25 mcg mercury in 0.5mL dose |
| Asparagine | Medium Nutrient | BCG Vaccine | BCG | Amount not specified in PI |
| Citric Acid | Medium Nutrient | BCG Vaccine | BCG | Amount not specified in PI |
| Glycerin | Medium Nutrient | BCG Vaccine | BCG | Amount not specified in PI |
| Iron Ammonium Citrate | Medium Nutrient | BCG Vaccine | BCG | Amount not specified in PI |
| Lactose | Freezing stabilizer | BCG Vaccine | BCG | Amount not specified in PI |
| Magnesium Sulfate | Medium Nutrient | BCG Vaccine | BCG | Amount not specified in PI |
| Potassium Phosphate | Medium nutrient | BCG Vaccine | BCG | Amount not specified in PI |
| Aluminum Hydroxide | Adjuvant | BioThrax | Anthrax | 1.2 mg/mL aluminum |
| Amino Acids | Medium | BioThrax | Anthrax | Amount not specified in PI |
| Benzethonium Chloride | Preservative | BioThrax | Anthrax | 25 mcg/mL |
| Formaldehyde | Preservative | BioThrax | Anthrax | 100 mcg/mL |
| Salt, inorganic | Medium | BioThrax | Anthrax | Amount not specified in PI |
| Sodium Chloride | Buffer | BioThrax | Anthrax | 0.85% |
| Sugars | Medium | BioThrax | Anthrax | Amount not specified in PI |
| Vitamins | Medium | BioThrax | Anthrax | Amount not specified in PI |
| Aluminum | Adjuvant | Cyrendus | Anthrax | 1.3 mg/mL |
| Amino Acids | Stabilizer | Cyrendus | Anthrax | Amount not specified in PI |
| Benzethonium Chloride | Preservative | Cyrendus | Anthrax | 25 mcg/mL |
| Cell-free Filtrate | Medium/Vaccine | Cyrendus | Anthrax | 100 mcg/mL |
| CPG 7909 | Adjuvant | Cyrendus | Anthrax | 0.5 mg/mL |
| Formaldehyde | Preservative | Cyrendus | Anthrax | 100 mcg/mL |
| Salt, Inorganic | Medium | Cyrendus | Anthrax | Amount not specified in PI |
| Sodium Chloride | Buffer | Cyrendus | Anthrax | 0.85% |
| Sugars | Medium | Cyrendus | Anthrax | Amount not specified in PI |
| Vitamins | Medium | Cyrendus | Anthrax | Amount not specified in PI |
| Amino Acids, Essential | Stabilizer | DENGVAXIA | Dengue | 0.56 mg including l-phenylalanine |
| Amino Acids, Non-essential | Stabilizer | DENGVAXIA | Dengue | 0.2 mg |
| D-sorbitol | Stabilizer | DENGVAXIA | Dengue | 9.38 mg |
| D-trehalose Dihydrate | Stabilizer | DENGVAXIA | Dengue | 13.75 mg |
| L-arginine Hydrochloride | Stabilizer | DENGVAXIA | Dengue | 2.5 mg |
| Sodium Chloride | Buffer/Diluent | DENGVAXIA | Dengue | 2mg |
| Sucrose | Stabilizer | DENGVAXIA | Dengue | 18.75 mg |
| Trometamol | Stabilizer | DENGVAXIA | Dengue | 0.18 mg |
| Urea | Stabilizer | DENGVAXIA | Dengue | 0.63 mg |
| Vero Cells | Growth Medium | DENGVAXIA | Dengue | Amount not specified in PI |
| Albumin, Human (recombinant, rice-derived) | Stabilizer | ERVEBO | Ebola, Zaire | 2.5 mg/1 mL dose |
| Benzonase | Protein Purifier | ERVEBO | Ebola, Zaire | ≤15 ng/1 mL dose |
| Host Cell DNA | Residual Medium | ERVEBO | Ebola, Zaire | ≤10 ng/1 mL dose |
| Rice Protein | Residual Medium | ERVEBO | Ebola, Zaire | Trace amounts |
| Tromethamine (Tris) | Stabilizer | ERVEBO | Ebola, Zaire | 10 mM/1 mL dose |
| Albumin, Human | Stabilizer | Imovax | Rabies | <100 mg/mL |
| Beta-Propiolactone | Viral Inactivator | Imovax | Rabies | <50 ppm |
| MRC-5 cells | Manufacturing Residue | Imovax | Rabies | Amount not specified in PI |
| Neomycin Sulfate | Antimicrobial | Imovax | Rabies | <150 mcg/mL |
| Phenol Red Indicator | pH indicator, dye | Imovax | Rabies | 20 mcg/mL |
| Formaldehyde | Inactivating Agent | Influenza H5N1 sanofi | Influenza H5N1 | ≤200 mcg/1 mL dose |
| Polyethylene Glycol p-Isoctylpheny Ether (Triton X-100) | Surfactant | Influenza H5N1 sanofi | Influenza H5N1 | <0.05%/1 mL dose |
| Gelatin, Porcine | Stabilizer | Influenza H5N1 sanofi | Influenza H5N1 | 500 mcg |
| Sucrose | Stabilizer | Influenza H5N1 sanofi | Influenza H5N1 | ≤2.0%/1 mL dose |
| Thimerosal | Preservative | Influenza H5N1 sanofi | Influenza H5N1 | 98.2 mcg/1 mL dose (50 mcg mercury) |
| 2-Phenoxyethanol | Preservative | IPOL | Polio | 0.5% |
| Albumin, Bovine Calf Serum Protein | Stabilizer | IPOL | Polio | <50 ng |
| Formaldehyde | Inactivating Agent | IPOL | Polio | ≤0.02% |
| M-199 Medium | Medium | IPOL | Polio | Amount not specified in PI |
| Neomycin | Antimicrobial | IPOL | Polio | <5 ng |
| Polymyxin B | Antimicrobial | IPOL | Polio | 25 ng |

| Excipient | Purpose | Vaccine Name | Vaccine Type | Amount per 0.5 mL dose* |
|------------------------------------|---------------------|------------------|----------------------------|--|
| Streptomycin | Antimicrobial | I POL | Polio | 200 ng |
| Vero Cells | Growth Medium | I POL | Polio | Amount not specified in PI |
| Albumin, Bovine Serum | Stabilizer | Ixiaro | Japanese Encephalitis | ≤100 ng/mL |
| Aluminum Hydroxide | Adjuvant | Ixiaro | Japanese Encephalitis | 250 mcg |
| DNA | Residual Medium | Ixiaro | Japanese Encephalitis | ≤200 pg/mL (host cell DNA) |
| Formaldehyde | Inactivating Agent | Ixiaro | Japanese Encephalitis | ≤200 ppm |
| Phosphate Buffer | Buffer | Ixiaro | Japanese Encephalitis | Sodium chloride Potassium dihydrogen phosphate Disodium hydrogen phosphate |
| Protamine Sulfate | Protein Purifier | Ixiaro | Japanese Encephalitis | ≤1 mcg/mL |
| Protein | Residual Medium | Ixiaro | Japanese Encephalitis | ≤100 ng/mL host cell protein |
| Sodium Metabisulphite | Stabilizer | Ixiaro | Japanese Encephalitis | ≤200 ppm |
| Vero cells | Medium Nutrient | Ixiaro | Japanese Encephalitis | Amount not specified in PI |
| Benzonase | Protein Purifier | Jynneos | Smallpox/Mpox | ≤ 0.0025 mcg |
| Chick Embryo Fibroblast cells | Residual Medium | Jynneos | Smallpox/Mpox | Amount not specified in PI |
| Ciprofloxacin | Antimicrobial | Jynneos | Smallpox/Mpox | ≤ 0.005 mcg |
| DNA | Residual Medium | Jynneos | Smallpox/Mpox | ≤20 mcg Host Cell DNA |
| Gentamicin | Antimicrobial | Jynneos | Smallpox/Mpox | ≤ 0.400 mcg |
| Protein | Residual Medium | Jynneos | Smallpox/Mpox | ≤500 mcg |
| Sodium Chloride | Adjust tonicity | Jynneos | Smallpox/Mpox | 140 mM at pH 7.7 |
| Tromethamine | Stabilizer | Jynneos | Smallpox/Mpox | 10 mM |
| Bovine Serum | Stabilizer | RabAvert | Rabies | "Small quantities", US origin |
| Albumin, Egg (Ovalbumin) | Residual Medium | RabAvert | Rabies | ≤3 ng/1 mL dose |
| Albumin, Human | Diluent/Stabilizer | RabAvert | Rabies | ≤0.3 mg/1 mL dose |
| Amphotericin B | Antimicrobial | RabAvert | Rabies | ≤20 ng/1 mL dose |
| Beta-Propiolactone | Viral Inactivator | RabAvert | Rabies | Amount not specified in PI |
| Chick Embryo | Residual Medium | RabAvert | Rabies | No intact cells (may have trace residual protein) |
| Chick Fibroblasts | Growth Medium | RabAvert | Rabies | minimal amounts protein residual |
| Chlortetracycline | Antimicrobial | RabAvert | Rabies | ≤200 ng/1 mL dose |
| EDTA | Preservative | RabAvert | Rabies | 0.3 mg/1 mL dose sodium EDTA |
| Gelatin, Bovine | Stabilizer, solvent | RabAvert | Rabies | ≤12 mg/1 mL dose polygeline |
| Neomycin | Antimicrobial | RabAvert | Rabies | <10 mcg/1 mL dose |
| Potassium Glutamate | Stabilizer | RabAvert | Rabies | 1 mg/1 mL dose |
| Albumin, Human | Diluent/Stabilizer | TICOVAC | Tick-borne Encephalitis | 0.5 mg |
| Aluminum Hydroxide | Adjuvant | TICOVAC | Tick-borne Encephalitis | 0.35 mg |
| Chick Protein | Residual Medium | TICOVAC | Tick-borne Encephalitis | Trace Amounts |
| Dibasic Sodium Phosphate | Buffer | TICOVAC | Tick-borne Encephalitis | 0.22 mg |
| DNA from CEF cells | Residual Medium | TICOVAC | Tick-borne Encephalitis | Trace amounts |
| Formaldehyde | Inactivating Agent | TICOVAC | Tick-borne Encephalitis | ≤5 mcg |
| Gentamicin | Antimicrobial | TICOVAC | Tick-borne Encephalitis | Trace amounts |
| Monobasic Potassium Phosphate | Buffer | TICOVAC | Tick-borne Encephalitis | 0.045 mg |
| Neomycin | Antimicrobial | TICOVAC | Tick-borne Encephalitis | Trace amounts |
| Protamine Sulfate | Protein Purifier | TICOVAC | Tick-borne Encephalitis | ≤0.5 mcg |
| Sodium Chloride | Buffer | TICOVAC | Tick-borne Encephalitis | 3.45 mg |
| Sucrose | Stabilizer | TICOVAC | Tick-borne Encephalitis | ≤15 mg |
| Bovine Casein | Medium Nutrient | Typhim Vi | Typhoid | Amount not specified in PI |
| Formaldehyde | Inactivating Agent | Typhim Vi | Typhoid | ≤100 mcg (residual) |
| Hexadecyltrimethylammonium Bromide | Protein Purifier | Typhim Vi | Typhoid | Amount not specified in PI |
| Phenol | Preservative | Typhim Vi | Typhoid | 0.25% |

| Excipient | Purpose | Vaccine Name | Vaccine Type | Amount per 0.5 mL dose* |
|--------------------------------|-------------------------------|------------------|--------------|--|
| Phosphate Buffer | Buffer | Typhim Vi | Typhoid | 0.065 mg disodium phosphate 0.023 mg monosodium phosphate |
| Polydimethylsiloxane | Antifoam | Typhim Vi | Typhoid | Residual, fatty-acid ester-based antifoam |
| Sodium Chloride | Adjust tonicity | Typhim Vi | Typhoid | 4.150 mg |
| Anhydrous lactose | Bulking Agent | VAXCHORA | Cholera | ≤2.09 gc |
| Anhydrous lactose | Manufacturing Flow Aid | VAXCHORA | Cholera | 0.18–0.22 g |
| Ascorbic acid | Stabilizer | VAXCHORA | Cholera | ≤8.55 mg |
| Ascorbic acid | Buffer and Neutralizer | VAXCHORA | Cholera | 1.50–1.80 g |
| Hy-Case SF (hydrolyzed casein) | Stabilizer | VAXCHORA | Cholera | ≤ 17.11 mg |
| Sodium Bicarbonate | Buffer | VAXCHORA | Cholera | 2.16–2.41 g |
| Sodium Carbonate | Buffer | VAXCHORA | Cholera | 0.24-0.49 g |
| Sucrose | Stabilizer | VAXCHORA | Cholera | ≤165.37 mg |
| Amino Acid | Medium Nutrient | Vivotif | Typhoid | 0.3-3.0 mg |
| Ascorbic Acid | Antioxidant | Vivotif | Typhoid | 0.2-2.4 mg/capsule |
| Bovine Casein | Medium Nutrient | Vivotif | Typhoid | Amount not specified in PI |
| Dextrose | Medium Nutrient | Vivotif | Typhoid | Amount not specified in PI |
| Galactose | Medium Nutrient | Vivotif | Typhoid | Amount not specified in PI |
| Gelatin | Gelatin Capsules | Vivotif | Typhoid | Gelatin Capsule |
| Lactose | Stabilizer | Vivotif | Typhoid | <180-200 mg/capsule |
| Magnesium Stearate | Lubricant for capsule filling | Vivotif | Typhoid | 3.6-4.0 mg/capsule |
| Sucrose | Stabilizer | Vivotif | Typhoid | 3.3-34.2 mg/capsule |
| Yeast | Medium Nutrient | Vivotif | Typhoid | Amount not specified in PI |
| Chicken Embryo | Residual Medium | YF-VAX | Yellow Fever | Amount not specified in PI |
| Gelatin | Stabilizer | YF-VAX | Yellow Fever | Amount not specified in PI |
| Salts, Mineral | Adjust tonicity | YF-Vax | Yellow Fever | Ingredient in Diluent |
| Sorbitol | Stabilizer | YF-VAX | Yellow Fever | Amount not specified in PI |

* unless otherwise noted

This information is correct to the best of our knowledge. Please report inaccuracies to us at info@hopkinsvaccine.org.

This table was last updated on October 14, 2024 | © 2024 Institute for Vaccine Safety