

# Excipients in Vaccines Not Routinely Recommended by Excipient

Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL dose*
2-Phenoxyethanol	Preservative	IPOL	Polio	0.5%
Acetone	Solvent	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Albumin, Bovine Calf Serum Protein	Stabilizer	IPOL	Polio	<50 ng
Albumin, Bovine Serum	Stabilizer	Ixiaro	Japanese Encephalitis	≤100 ng/mL
Albumin, Egg (Ovalbumin)	Residual Medium	RabAvert	Rabies	≤3 ng/1 mL dose
Albumin, Fetal Bovine Serum	Stabilizer	IXCHIQ	Chikungunya	<500 pg
Albumin, Human	Diluent/Stabilizer	ACAM2000	Smallpox/Mpox	2%
Albumin, Human	Diluent/Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Albumin, Human	Stabilizer	Imovax	Rabies	<100 mg/mL
Albumin, Human	Diluent/Stabilizer	RabAvert	Rabies	≤0.3 mg/1 mL dose
Albumin, Human	Diluent/Stabilizer	TICOVAC	Tick-borne Encephalitis	0.5 mg
Albumin, Human (recombinant, rice-derived)	Stabilizer	ERVEBO	Ebola, Zaire	2.5 mg/1 mL dose
Albumin, Human (WI-38)	Diluent/Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Albumin, Recombinant Human	Stabilizer	IXCHIQ	Chikungunya	0.05 mg
Alcohol	Solvent	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Aluminum	Adjuvant	Cyrendus	Anthrax	1.3 mg/mL
Aluminum Hydroxide	Adjuvant	BioThrax	Anthrax	1.2 mg/mL aluminum
Aluminum Hydroxide	Adjuvant	Ixiaro	Japanese Encephalitis	250 mcg
Aluminum Hydroxide	Adjuvant	TICOVAC	Tick-borne Encephalitis	0.35 mg
Amino Acid	Medium Nutrient	Vivotif	Typhoid	0.3-3.0 mg
Amino Acids	Medium	BioThrax	Anthrax	Amount not specified in PI
Amino Acids	Stabilizer	Cyrendus	Anthrax	Amount not specified in PI
Amino Acids	Stabilizer	IXCHIQ	Chikungunya	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
Amphotericin B	Antimicrobial	RabAvert	Rabies	≤20 ng/1 mL dose
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
Ascorbic Acid	Antioxidant	Vivotif	Typhoid	0.2-2.4 mg/capsule
Asparagine	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
Benzethonium Chloride	Preservative	BioThrax	Anthrax	25 mcg/mL
Benzethonium Chloride	Preservative	Cyrendus	Anthrax	25 mcg/mL
Benzonase	Protein Purifier	ERVEBO	Ebola, Zaire	≤15 ng/1 mL dose
Benzonase	Protein Purifier	Jynneos	Smallpox/Mpox	≤ 0.0025 mcg
Beta-propiolactone	Viral Inactivator	AUDENZ	Influenza H5N1	≤0.1 mcg
Beta-Propiolactone	Viral Inactivator	Imovax	Rabies	<50 ppm
Beta-Propiolactone	Viral Inactivator	RabAvert	Rabies	Amount not specified in PI
Bovine Casein	Medium Nutrient	Typhim Vi	Typhoid	Amount not specified in PI
Bovine Casein	Medium Nutrient	Vivotif	Typhoid	Amount not specified in PI
Bovine Serum	Stabilizer	RabAvert	Rabies	"Small quantities", US origin
Calf lymph vaccine	Growth Medium	ACAM2000	Smallpox/Mpox	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
Cell-free Filtrate	Medium/Vaccine	Cyrendus	Anthrax	100 mcg/mL
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
Cetyltrimethylammonium Bromide (CTAB)	Protein Purifier	AUDENZ	Influenza H5N1	≤ 4.5 mcg

<b>Chick Embryo</b>	Residual Medium	RabAvert	Rabies	No intact cells (may have trace residual protein)
<b>Chick Embryo Fibroblast cells</b>	Residual Medium	Jynneos	Smallpox/Mpox	Amount not specified in PI
<b>Chick Fibroblasts</b>	Growth Medium	RabAvert	Rabies	minimal amounts protein residual
<b>Chick Protein</b>	Residual Medium	TICOVAC	Tick-borne Encephalitis	Trace Amounts
<b>Chicken Embryo</b>	Residual Medium	YF-VAX	Yellow Fever	Amount not specified in PI
<b>Chlortetracycline</b>	Antimicrobial	RabAvert	Rabies	≤200 ng/1 mL dose
<b>Ciprofloxacin</b>	Antimicrobial	Jynneos	Smallpox/Mpox	≤ 0.005 mcg
<b>Citric Acid</b>	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
<b>Citric Acid Monohydrate</b>	Medium Nutrient	AUDENZ	Influenza H5N1	0.04 mg at pH 6.5-7.7
<b>CPG 7909</b>	Adjuvant	Cyrendus	Anthrax	0.5 mg/mL
<b>Dextrose</b>	Medium Nutrient	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Dextrose</b>	Medium Nutrient	Vivotif	Typhoid	Amount not specified in PI
<b>D-fructose</b>	Medium Nutrient	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Dibasic Sodium Phosphate</b>	Buffer	TICOVAC	Tick-borne Encephalitis	0.22 mg
<b>D-mannose</b>	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>DMEM</b>	Growth Medium	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>DNA</b>	Residual Medium	Ixiaro	Japanese Encephalitis	≤200 pg/mL (host cell DNA)
<b>DNA</b>	Residual Medium	Jynneos	Smallpox/Mpox	≤20 mcg Host Cell DNA
<b>DNA from CEF cells</b>	Residual Medium	TICOVAC	Tick-borne Encephalitis	Trace amounts
<b>D-sorbitol</b>	Stabilizer	DENG VAXIA	Dengue	9.38 mg
<b>D-sorbitol</b>	Stabilizer	IXCHIQ	Chikungunya	2.5 mg
<b>D-trehalose Dihydrate</b>	Stabilizer	DENG VAXIA	Dengue	13.75 mg
<b>EDTA</b>	Preservative	RabAvert	Rabies	0.3 mg/1 mL dose sodium EDTA
<b>Fetal Bovine Serum</b>	Growth Medium	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Formaldehyde</b>	Preservative	BioThrax	Anthrax	100 mcg/mL
<b>Formaldehyde</b>	Preservative	Cyrendus	Anthrax	100 mcg/mL
<b>Formaldehyde</b>	Inactivating Agent	Influenza H5N1 sanofi	Influenza H5N1	≤200 mcg/1 mL dose
<b>Formaldehyde</b>	Inactivating Agent	IPOL	Polio	≤0.02%
<b>Formaldehyde</b>	Inactivating Agent	Ixiaro	Japanese Encephalitis	≤200 ppm
<b>Formaldehyde</b>	Inactivating Agent	TICOVAC	Tick-borne Encephalitis	≤5 mcg
<b>Formaldehyde</b>	Inactivating Agent	Typhim Vi	Typhoid	≤100 mcg (residual)
<b>Galactose</b>	Medium Nutrient	Vivotif	Typhoid	Amount not specified in PI
<b>Gelatin</b>	Gelatin Capsules	Vivotif	Typhoid	Gelatin Capsule
<b>Gelatin</b>	Stabilizer	YF-VAX	Yellow Fever	Amount not specified in PI
<b>Gelatin, Bovine</b>	Stabilizer, solvent	RabAvert	Rabies	≤12 mg/1 mL dose polygeline
<b>Gelatin, Porcine</b>	Stabilizer	Influenza H5N1 sanofi	Influenza H5N1	500 mcg
<b>Gentamicin</b>	Antimicrobial	Jynneos	Smallpox/Mpox	≤ 0.400 mcg
<b>Gentamicin</b>	Antimicrobial	TICOVAC	Tick-borne Encephalitis	Trace amounts
<b>Glycerin</b>	Medium Nutrient	ACAM2000	Smallpox/Mpox	50% (v/v)
<b>Glycerin</b>	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
<b>Hexadecyltrimethylammonium Bromide</b>	Protein Purifier	Typhim Vi	Typhoid	Amount not specified in PI
<b>Host Cell DNA</b>	Residual Medium	ERVEBO	Ebola, Zaire	≤10 ng/1 mL dose
<b>Hy-Case SF (hydrolyzed casein)</b>	Stabilizer	VAXCHORA	Cholera	≤ 17.11 mg
<b>Iron Ammonium Citrate</b>	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
<b>Lactose</b>	Freezing stabilizer	BCG Vaccine	BCG	Amount not specified in PI
<b>Lactose</b>	Stabilizer	Vivotif	Typhoid	<180-200 mg/capsule
<b>Lactose, Anhydrous</b>	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>L-arginine Hydrochloride</b>	Stabilizer	DENG VAXIA	Dengue	2.5 mg
<b>L-methionine</b>	Amino acid, nutrient	IXCHIQ	Chikungunya	0.75 mg
<b>M-199 Medium</b>	Medium	IPOL	Polio	Amount not specified in PI

<b>Madin Darby Canine Kidney (MDCK) cell DNA</b>	Residual Medium	AUDENZ	Influenza H5N1	≤10 ng
<b>Madin Darby Canine Kidney (MDCK) cell protein</b>	Residual Medium	AUDENZ	Influenza H5N1	≤3.15 mcg
<b>Magnesium Chloride Hexahydrate</b>	Salt, buffer	IXCHIQ	Chikungunya	0.51 mg
<b>Magnesium Stearate</b>	Lubricant for capsule filling	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Magnesium Stearate</b>	Lubricant for capsule filling	Vivotif	Typhoid	3.6-4.0 mg/capsule
<b>Magnesium Sulfate</b>	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
<b>Mannitol</b>	Stabilizer	ACAM2000	Smallpox/Mpox	5%
<b>MF59C.1 Adjuvant (MF59)</b>	Adjuvant	AUDENZ	Influenza H5N1	Amount not specified in PH
<b>Monobasic Potassium Phosphate</b>	Buffer	TICOVAC	Tick-borne Encephalitis	0.045 mg
<b>Monosodium Glutamate</b>	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>MRC-5 cells</b>	Manufacturing Residue	Imovax	Rabies	Amount not specified in PI
<b>Neomycin</b>	Antimicrobial	ACAM2000	Smallpox/Mpox	Trace Amounts
<b>Neomycin</b>	Antimicrobial	IPOL	Polio	<5 ng
<b>Neomycin</b>	Antimicrobial	RabAvert	Rabies	<10 mcg/1 mL dose
<b>Neomycin</b>	Antimicrobial	TICOVAC	Tick-borne Encephalitis	Trace amounts
<b>Neomycin Sulfate</b>	Antimicrobial	Imovax	Rabies	<150 mcg/mL
<b>Phenol</b>	Preservative	ACAM2000	Smallpox/Mpox	0.25% (v/v)
<b>Phenol</b>	Preservative	Typhim Vi	Typhoid	0.25%
<b>Phenol Red Indicator</b>	pH indicator, dye	Imovax	Rabies	20 mcg/mL
<b>Phosphate Buffer</b>	Buffer	IXCHIQ	Chikungunya	0.313 mg Di-potassium Hydrogen Phosphate 0.098 mg Potassium di-hydrogen Phosphate
<b>Phosphate Buffer</b>	Buffer	Ixiaro	Japanese Encephalitis	Sodium chloride Potassium dihydrogen phosphate Disodium hydrogen phosphate
<b>Phosphate Buffer</b>	Buffer	Typhim Vi	Typhoid	0.065 mg disodium phosphate 0.023 mg monosodium phosphate
<b>Plasdone C</b>	Improves solubility	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Polacrillin Potassium</b>	Buffer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Polydimethylsiloxane</b>	Antifoam	Typhim Vi	Typhoid	Residual, fatty-acid ester-based antifoam
<b>Polyethylene Glycol p-Isoctylpheny Ether (Triton X-100)</b>	Surfactant	Influenza H5N1 sanofi	Influenza H5N1	<0.05%/1 mL dose
<b>Polymyxin B</b>	Antimicrobial	ACAM2000	Smallpox/Mpox	Trace Amounts
<b>Polymyxin B</b>	Antimicrobial	IPOL	Polio	25 ng
<b>Polysorbate 80</b>	Surfactant	AUDENZ	Influenza H5N1	1.175 mg
<b>Potassium Glutamate</b>	Stabilizer	RabAvert	Rabies	1 mg/1 mL dose
<b>Potassium Phosphate</b>	Buffer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Potassium Phosphate</b>	Medium nutrient	BCG Vaccine	BCG	Amount not specified in PI
<b>Protamine Sulfate</b>	Protein Purifier	IXCHIQ	Chikungunya	< 1 mcg
<b>Protamine Sulfate</b>	Protein Purifier	Ixiaro	Japanese Encephalitis	≤1 mcg/mL
<b>Protamine Sulfate</b>	Protein Purifier	TICOVAC	Tick-borne Encephalitis	≤0.5 mcg
<b>Protein</b>	Residual Medium	Ixiaro	Japanese Encephalitis	≤100 ng/mL host cell protein
<b>Protein</b>	Residual Medium	Jynneos	Smallpox/Mpox	≤500 mcg
<b>Rice Protein</b>	Residual Medium	ERVEBO	Ebola, Zaire	Trace amounts
<b>Salt, inorganic</b>	Medium	BioThrax	Anthrax	Amount not specified in PI
<b>Salt, Inorganic</b>	Medium	Cyrendus	Anthrax	Amount not specified in PI
<b>Salts, Mineral</b>	Adjust tonicity	YF-Vax	Yellow Fever	Ingredient in Diluent
<b>Sodium Bicarbonate</b>	Buffer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Sodium Bicarbonate</b>	Buffer	VAXCHORA	Cholera	2.16–2.41 g
<b>Sodium Carbonate</b>	Buffer	VAXCHORA	Cholera	0.24-0.49 g

<b>Sodium Chloride</b>	Buffer	ACAM2000	Smallpox/Mpox	0.5- 0.7%
<b>Sodium Chloride</b>	Buffer	BioThrax	Anthrax	0.85%
<b>Sodium Chloride</b>	Buffer	Cyrendus	Anthrax	0.85%
<b>Sodium Chloride</b>	Buffer/Diluent	DENG VAXIA	Dengue	2mg
<b>Sodium Chloride</b>	Adjust tonicity	Jynneos	Smallpox/Mpox	140 mM at pH 7.7
<b>Sodium Chloride</b>	Buffer	TICOVAC	Tick-borne Encephalitis	3.45 mg
<b>Sodium Chloride</b>	Adjust tonicity	Typhim Vi	Typhoid	4.150 mg
<b>Sodium Citrate Dihydrate</b>	Buffer	AUDENZ	Influenza H5N1	0.66 mg
<b>Sodium Metabisulphite</b>	Stabilizer	Ixiaro	Japanese Encephalitis	≤200 ppm
<b>Sorbitan Trioleate</b>	Stabilizer	AUDENZ	Influenza H5N1	1.175 mg
<b>Sorbitol</b>	Stabilizer	YF-VAX	Yellow Fever	Amount not specified in PI
<b>Squalene</b>	Adjuvant	AUDENZ	Influenza H5N1	9.75 mg
<b>Streptomycin</b>	Antimicrobial	IPOL	Polio	200 ng
<b>Sucrose</b>	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
<b>Sucrose</b>	Stabilizer	DENG VAXIA	Dengue	18.75 mg
<b>Sucrose</b>	Stabilizer	Influenza H5N1 sanofi	Influenza H5N1	≤2.0%/1 mL dose
<b>Sucrose</b>	Stabilizer	IXCHIQ	Chikungunya	25 mg
<b>Sucrose</b>	Stabilizer	TICOVAC	Tick-borne Encephalitis	≤15 mg
<b>Sucrose</b>	Stabilizer	VAXCHORA	Cholera	≤165.37 mg
<b>Sucrose</b>	Stabilizer	Vivotif	Typhoid	3.3-34.2 mg/capsule
<b>Sugars</b>	Medium	BioThrax	Anthrax	Amount not specified in PI
<b>Sugars</b>	Medium	Cyrendus	Anthrax	Amount not specified in PI
<b>Thimerosal</b>	Preservative	AUDENZ	Influenza H5N1	25 mcg mercury in 0.5mL dose
<b>Thimerosal</b>	Preservative	Influenza H5N1 sanofi	Influenza H5N1	98.2 mcg/1 mL dose (50 mcg mercury)
<b>Trisodium Citrate Di-hydrate</b>	Buffer	IXCHIQ	Chikungunya	3.68 mg
<b>Trometamol</b>	Stabilizer	DENG VAXIA	Dengue	0.18 mg
<b>Tromethamine</b>	Stabilizer	Jynneos	Smallpox/Mpox	10 mM
<b>Tromethamine (Tris)</b>	Stabilizer	ERVEBO	Ebola, Zaire	10 mM/1 mL dose
<b>Urea</b>	Stabilizer	DENG VAXIA	Dengue	0.63 mg
<b>Vero cell DNA</b>	Residual Medium	IXCHIQ	Chikungunya	<10 pg
<b>Vero Cells</b>	Growth Medium	ACAM2000	Smallpox/Mpox	Amount not specified in PI
<b>Vero Cells</b>	Growth Medium	DENG VAXIA	Dengue	Amount not specified in PI
<b>Vero Cells</b>	Growth Medium	IPOL	Polio	Amount not specified in PI
<b>Vero cells</b>	Medium Nutrient	Ixiaro	Japanese Encephalitis	Amount not specified in PI
<b>Vero cells protein</b>	Residual medium	IXCHIQ	Chikungunya	<5 ng
<b>Vitamins</b>	Medium	BioThrax	Anthrax	Amount not specified in PI
<b>Vitamins</b>	Medium	Cyrendus	Anthrax	Amount not specified in PI
<b>Vitamins</b>	Medium	IXCHIQ	Chikungunya	Amount not specified in PI
<b>Yeast</b>	Medium Nutrient	Vivotif	Typhoid	Amount not specified in PI
<b>Yellow #6 Aluminum Lake Dye</b>	Colorant	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	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](mailto:info@hopkinsvaccine.org).

This table was last updated on December 20, 2024 | © 2024 Institute for Vaccine Safety