

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, 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
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, 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
Chick Embryo	Residual Medium	RabAvert	Rabies	No intact cells (may have trace residual protein)
Chick Embryo Fibroblast cells	Residual Medium	Jynneos	Smallpox/Mpox	Amount not specified in PI

Chick Fibroblasts	Growth Medium	RabAvert	Rabies	minimal amounts protein residual
Chick Protein	Residual Medium	TICOVAC	Tick-borne Encephalitis	Trace Amounts
Chicken Embryo	Residual Medium	YF-VAX	Yellow Fever	Amount not specified in PI
Chlortetracycline	Antimicrobial	RabAvert	Rabies	≤200 ng/1 mL dose
Ciprofloxacin	Antimicrobial	Jynneos	Smallpox/Mpox	≤ 0.005 mcg
Citric Acid	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
Citric Acid Monohydrate	Medium Nutrient	AUDENZ	Influenza H5N1	0.04 mg at pH 6.5-7.7
CPG 7909	Adjuvant	Cyrendus	Anthrax	0.5 mg/mL
Dextrose	Medium Nutrient	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Dextrose	Medium Nutrient	Vivotif	Typhoid	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
Dibasic Sodium Phosphate	Buffer	TICOVAC	Tick-borne Encephalitis	0.22 mg
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
DNA	Residual Medium	Ixiaro	Japanese Encephalitis	≤200 pg/mL (host cell DNA)
DNA	Residual Medium	Jynneos	Smallpox/Mpox	≤20 mcg Host Cell DNA
DNA from CEF cells	Residual Medium	TICOVAC	Tick-borne Encephalitis	Trace amounts
D-sorbitol	Stabilizer	DENGVAXIA	Dengue	9.38 mg
D-trehalose Dihydrate	Stabilizer	DENGVAXIA	Dengue	13.75 mg
EDTA	Preservative	RabAvert	Rabies	0.3 mg/1 mL dose sodium EDTA
Fetal Bovine Serum	Growth Medium	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Formaldehyde	Preservative	BioThrax	Anthrax	100 mcg/mL
Formaldehyde	Preservative	Cyrendus	Anthrax	100 mcg/mL
Formaldehyde	Inactivating Agent	Influenza H5N1 sanofi	Influenza H5N1	≤200 mcg/1 mL dose
Formaldehyde	Inactivating Agent	IPOL	Polio	≤0.02%
Formaldehyde	Inactivating Agent	Ixiaro	Japanese Encephalitis	≤200 pmm
Formaldehyde	Inactivating Agent	TICOVAC	Tick-borne Encephalitis	≤5 mcg
Formaldehyde	Inactivating Agent	Typhim Vi	Typhoid	≤100 mcg (residual)
Galactose	Medium Nutrient	Vivotif	Typhoid	Amount not specified in PI
Gelatin	Gelatin Capsules	Vivotif	Typhoid	Gelatin Capsule
Gelatin	Stabilizer	YF-VAX	Yellow Fever	Amount not specified in PI
Gelatin, Bovine	Stabilizer, solvent	RabAvert	Rabies	≤12 mg/1 mL dose polygeline
Gelatin, Porcine	Stabilizer	Influenza H5N1 sanofi	Influenza H5N1	500 mcg
Gentamicin	Antimicrobial	Jynneos	Smallpox/Mpox	≤ 0.400 mcg
Gentamicin	Antimicrobial	TICOVAC	Tick-borne Encephalitis	Trace amounts
Glycerin	Medium Nutrient	ACAM2000	Smallpox/Mpox	50% (v/v)
Glycerin	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
Hexadecyltrimethylammonium Bromide	Protein Purifier	Typhim Vi	Typhoid	Amount not specified in PI
Host Cell DNA	Residual Medium	ERVEBO	Ebola, Zaire	≤10 ng/1 mL dose
Hy-Case SF (hydrolyzed casein)	Stabilizer	VAXCHORA	Cholera	≤ 17.11 mg
Iron Ammonium Citrate	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
Lactose	Freezing stabilizer	BCG Vaccine	BCG	Amount not specified in PI
Lactose	Stabilizer	Vivotif	Typhoid	<180-200 mg/capsule
Lactose, Anhydrous	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
L-arginine Hydrochloride	Stabilizer	DENGVAXIA	Dengue	2.5 mg
M-199 Medium	Medium	IPOL	Polio	Amount not specified in PI
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
Magnesium Stearate	Lubricant for capsule filling	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI

Magnesium Stearate	Lubricant for capsule filling	Vivotif	Typhoid	3.6-4.0 mg/capsule
Magnesium Sulfate	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in PI
Mannitol	Stabilizer	ACAM2000	Smallpox/Mpox	5%
MF59C.1 Adjuvant (MF59)	Adjuvant	AUDENZ	Influenza H5N1	Amount not specified in PH
Monobasic Potassium Phosphate	Buffer	TICOVAC	Tick-borne Encephalitis	0.045 mg
Monosodium Glutamate	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
MRC-5 cells	Manufacturing Residue	Imovax	Rabies	Amount not specified in PI
Neomycin	Antimicrobial	ACAM2000	Smallpox/Mpox	Trace Amounts
Neomycin	Antimicrobial	IPOL	Polio	<5 ng
Neomycin	Antimicrobial	RabAvert	Rabies	<10 mcg/1 mL dose
Neomycin	Antimicrobial	TICOVAC	Tick-borne Encephalitis	Trace amounts
Neomycin Sulfate	Antimicrobial	Imovax	Rabies	<150 mcg/mL
Phenol	Preservative	ACAM2000	Smallpox/Mpox	0.25% (v/v)
Phenol	Preservative	Typhim Vi	Typhoid	0.25%
Phenol Red Indicator	pH indicator, dye	Imovax	Rabies	20 mcg/mL
Phosphate Buffer	Buffer	Ixiaro	Japanese Encephalitis	Sodium chloride Potassium dihydrogen phosphate Disodium hydrogen phosphate
Phosphate Buffer	Buffer	Typhim Vi	Typhoid	0.065 mg disodium phosphate 0.023 mg monosodium phosphate
Plasdone C	Improves solubility	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Polacrilin Potassium	Buffer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Polydimethylsiloxane	Antifoam	Typhim Vi	Typhoid	Residual, fatty-acid ester-based antifoam
Polyethylene Glycol p-Isoctylphenyl Ether (Triton X-100)	Surfactant	Influenza H5N1 sanofi	Influenza H5N1	<0.05%/1 mL dose
Polymyxin B	Antimicrobial	ACAM2000	Smallpox/Mpox	Trace Amounts
Polymyxin B	Antimicrobial	IPOL	Polio	25 ng
Polysorbate 80	Surfactant	AUDENZ	Influenza H5N1	1.175 mg
Potassium Glutamate	Stabilizer	RabAvert	Rabies	1 mg/1 mL dose
Potassium Phosphate	Buffer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Potassium Phosphate	Medium nutrient	BCG Vaccine	BCG	Amount not specified in PI
Protamine Sulfate	Protein Purifier	Ixiaro	Japanese Encephalitis	≤1 mcg/mL
Protamine Sulfate	Protein Purifier	TICOVAC	Tick-borne Encephalitis	≤0.5 mcg
Protein	Residual Medium	Ixiaro	Japanese Encephalitis	≤100 ng/mL host cell protein
Protein	Residual Medium	Jynneos	Smallpox/Mpox	≤500 mcg
Rice Protein	Residual Medium	ERVEBO	Ebola, Zaire	Trace amounts
Salt, inorganic	Medium	BioThrax	Anthrax	Amount not specified in PI
Salt, Inorganic	Medium	Cyrendus	Anthrax	Amount not specified in PI
Salts, Mineral	Adjust tonicity	YF-Vax	Yellow Fever	Ingredient in Diluent
Sodium Bicarbonate	Buffer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Sodium Bicarbonate	Buffer	VAXCHORA	Cholera	2.16–2.41 g
Sodium Carbonate	Buffer	VAXCHORA	Cholera	0.24-0.49 g
Sodium Chloride	Buffer	ACAM2000	Smallpox/Mpox	0.5- 0.7%
Sodium Chloride	Buffer	BioThrax	Anthrax	0.85%
Sodium Chloride	Buffer	Cyrendus	Anthrax	0.85%
Sodium Chloride	Buffer/Diluent	DENG VAXIA	Dengue	2mg
Sodium Chloride	Adjust tonicity	Jynneos	Smallpox/Mpox	140 mM at pH 7.7
Sodium Chloride	Buffer	TICOVAC	Tick-borne Encephalitis	3.45 mg
Sodium Chloride	Adjust tonicity	Typhim Vi	Typhoid	4.150 mg
Sodium Citrate Dihydrate	Buffer	AUDENZ	Influenza H5N1	0.66 mg
Sodium Metabisulphite	Stabilizer	Ixiaro	Japanese Encephalitis	≤200 ppm
Sorbitan Trioleate	Stabilizer	AUDENZ	Influenza H5N1	1.175 mg

Sorbitol	Stabilizer	YF-VAX	Yellow Fever	Amount not specified in PI
Squalene	Adjuvant	AUDENZ	Influenza H5N1	9.75 mg
Streptomycin	Antimicrobial	IPOL	Polio	200 ng
Sucrose	Stabilizer	Adenovirus Type 4 and Type 7	Adenovirus Type 4 and Type 7	Amount not specified in PI
Sucrose	Stabilizer	DENGVAXIA	Dengue	18.75 mg
Sucrose	Stabilizer	Influenza H5N1 sanofi	Influenza H5N1	≤2.0%/1 mL dose
Sucrose	Stabilizer	TICOVAC	Tick-borne Encephalitis	≤15 mg
Sucrose	Stabilizer	VAXCHORA	Cholera	≤165.37 mg
Sucrose	Stabilizer	Vivotif	Typhoid	3.3-34.2 mg/capsule
Sugars	Medium	BioThrax	Anthrax	Amount not specified in PI
Sugars	Medium	Cyrendus	Anthrax	Amount not specified in PI
Thimerosal	Preservative	AUDENZ	Influenza H5N1	25 mcg mercury in 0.5mL dose
Thimerosal	Preservative	Influenza H5N1 sanofi	Influenza H5N1	98.2 mcg/1 mL dose (50 mcg mercury)
Trometamol	Stabilizer	DENGVAXIA	Dengue	0.18 mg
Tromethamine	Stabilizer	Jynneos	Smallpox/Mpox	10 mM
Tromethamine (Tris)	Stabilizer	ERVEBO	Ebola, Zaire	10 mM/1 mL dose
Urea	Stabilizer	DENGVAXIA	Dengue	0.63 mg
Vero Cells	Growth Medium	ACAM2000	Smallpox/Mpox	Amount not specified in PI
Vero Cells	Growth Medium	DENGVAXIA	Dengue	Amount not specified in PI
Vero Cells	Growth Medium	IPOL	Polio	Amount not specified in PI
Vero cells	Medium Nutrient	Ixiaro	Japanese Encephalitis	Amount not specified in PI
Vitamins	Medium	BioThrax	Anthrax	Amount not specified in PI
Vitamins	Medium	Cyrendus	Anthrax	Amount not specified in PI
Yeast	Medium Nutrient	Vivotif	Typhoid	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

* 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