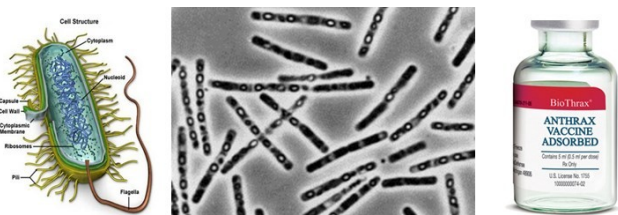


## Anthrax Vaccines Antibody ELISA Kits, Recombinant Proteins, Peptides and Antibodies

Anthrax is a zoonotic disease caused by the spore-forming bacterium *Bacillus anthracis*. The disease most commonly occurs in wild and domestic mammals (e.g., cattle, sheep, goats, camels, antelope, and other herbivores). Anthrax occurs in humans when they are exposed to infected animals or tissue from infected animals or when they are directly exposed to *B. anthracis* or the spores. Depending on the route of infection, anthrax disease can occur in three forms: cutaneous, gastrointestinal, and inhalation. *B. anthracis* spores can remain viable and infective in the soil for many years. *B. anthracis* has also been manufactured as a biological warfare agent because of the ability of its spores to be transmitted by the respiratory route, the high mortality of inhalation anthrax, and the greater stability of *B. anthracis* spores compared with other potential biological warfare agents. *B. anthracis* evades the immune system by producing an anti phagocytic capsule. In addition, *B. anthracis* produces three proteins - protective antigen (PA), lethal factor (LF), and edema factor (EF) - that act in binary combinations to form two exotoxins known as lethal toxin and edema toxin. PA and LF form lethal toxin; PA and EF form edema toxin. LF is a protease that inhibits mitogen-activated protein kinase-kinase. PA is required for binding and translocating LF and EF into host cells. PA is an 83 kD protein that binds to receptors on mammalian cells and is critical to the ability of *B. anthracis* to cause disease. After binding to the cell membrane, PA is cleaved to a 63 kD fragment that subsequently binds with LF or EF. LF or EF bound to the 63KD fragment undergoes receptor-mediated internalization, translocation into the cytosol.



An improved vaccine for livestock, based on a live non encapsulated avirulent variant of *B. anthracis*, has served as the principal veterinary vaccine. AVA, Anthrax Vaccine Adsorbed (trade name **Biothrax**), the only licensed human anthrax vaccine in the United States, is produced by Emergent Biodefense Corporation (formerly BioPort) and is prepared from a cell-free filtrate of *B. anthracis* culture that contains no dead or live bacteria. The strain used to prepare the vaccine is a toxigenic, non-encapsulated strain known as V770-NP1-R. No living organisms are present in the vaccine. The filtrate contains a mix of cellular products including PA83 and is adsorbed to aluminum hydroxide as adjuvant. The amount of PA and other proteins per 0.5mL dose

is unknown, and all three toxin components (LF, EF, and PA) are present in the product. Approximately 95% of vaccinees seroconvert with a fourfold rise in anti-PA IgG titers after three doses. However, the precise correlation between antibody titer (or concentration) and protection against infection is not defined. While having some efficacy in protecting against anthrax, the dosage, safety and efficacy of this licensed vaccine is being debated by the Scientists as well as politicians. More advanced vaccines are based upon recombinant purified PA83 proteins (**Vaxgen**).

We have cloned, expressed, and purified various recombinant proteins of anthrax (PA, EF, LF) made antibodies in various animal, develop antigen determination kits, and antibody kits for testing various vaccines.

### Anthrax vaccine Related ELISA kits

ELISA Kit Description	Species	Total Ig's Cat#	IgG Specific Cat#	IgM Specific Cat#
<p><b>Anthrax Vaccine Protective Antigen 83 (PA83) antibody ELISA kits</b></p> <p><b>Notes:</b> Antibody ELISA kits are designed to detect either total Ig's (IgG+IgA+IgM) or total IgG (no IgA or IgM) or IgM antibody isotypes. It is possible to <b>custom order</b> total Ig's or IgG or IgM for any species listed here even if there is no catalog # provided. This is also true for anthrax PA83, EF or LF protein antibody ELISAs.</p> <p>ADI can also custom produce ELISA kits for species that are not listed in the table.</p>	Human	900-160-83T	900-165-83G	
	Mouse	900-100-83T	900-105-83G	
	Monkey	900-150-83T		
	Goat	900-130-83T		
	Sheep		900-170-83G	
	Bovine		900-110-83G	
	G.pig	900-140-83T		
	Rabbit	900-120-83T		
	Swine/Pig		900-115-83G	
	Bison/Bovine		900-125-83G	
Elk/Deer		900-125-83G		
<p><b>Anthrax Vaccine Anti-Edema Factor (EF) Antibody ELISA kits</b></p>	Rabbit	900-320-EFR		
	Mouse	900-300-EFM		
	Swine/feral		900-330-EFG	900-335-EFM
	Bovine		900-340-EFB	
	Bison		900-127-EFG	
	Goat		900-350-EFG	
	Sheep		900-360-EFS	
	Deer		900-370-EFD	
Monkey		900-380-EFM		

ELISA Kit Description	Species	Total Ig's Cat#	IgG Specific Cat#	IgM Specific Cat#
Anthrax Vaccine Anthrax Lethal Factor (LF) antibody ELISA kits	Mouse	900-200-LFM		
	Human		900-220-LFH	
	Rabbit		900-220-LFR	
	Swine/Pig		900-230-LFG	900-235-LFM
	Bovine/Cow		900-240-LFB	
	Bison		900-126-LFG	
	Goat		900-250-LFG	
	Sheep		900-260-LFG	
	Deer/elk		900-270-LFD	
	Monkey		900-280-LFM	

### PA83, EF, and LF protein (Antigen) ELISA kits

Anthrax B. Anthracis Protective Antigen 83 (PA83) Protein ELISA kit, Quantitative # 800-110-P63

Anthrax B. Anthracis Lethal Factor (LF) Protein ELISA Kit, Quantitative # 800-120-LF

Anthrax B. Anthracis Edema Factor (EF) Protein ELISA Kit, Quantitative #800-130-EF

We also have specialised kits to measure PA83, EF or LF proteins in vaccines that are formulated in Alum or Alhydrogel. Please contact ADI.

Item	Catalog#	Product Description	ProductType
Anthrax Receptors (ATR)	ATR11-A	Rabbit Anti-human Anthrax Toxin Receptor 1, aff pure IgG # 1	Antibodies
	ATR11-P	Human Anthrax toxin receptor protein Control/blocking peptide # 1	Peptide
	ATR12-A	Rabbit Anti-human Anthrax Toxin Receptor 1, aff pure IgG # 2	Antibodies
	ATR12-P	Human Anthrax toxin receptor 1 protein Control/blocking peptide # 2	Peptide
	ATR31-A	Rabbit Anti-human Anthrax Toxin Receptor 3, aff pure IgG #1	Antibodies
	ATR31-P	Human Anthrax toxin receptor 3 protein Control/blocking peptide # 1	Peptide
Anthrax Cell wall	CWBA-1	Cell wall, semi pure (B. Anthracis)	Protein
Anthrax EF	EF11-A	Goat Anti-Edema factor (B Anthracis) IgG	Antibodies
	EF12-A	Rabbit Anti-B. Anthracis Edema factor (EF) (C-terminal peptide) IgG#2	Antibodies
	EF12-C	Rabbit Purified Recombinant Anthrax toxin Edema Factor (EF) protein control for WB	Western control
	EF25-R	Purified Recombinant Anthrax toxin Edema Factor protein	Rec. Protein
Anthrax LF	LF11-M	Monoclonal Anti-Anthrax Lethal factor antigen IgG #1, aff pure	Antibodies
	LF12-MB	Monoclonal Anti-Anthrax Lethal factor (LF) protein IgG biotinylated	Antibodies
	LF13-A	Rabbit Anti-B. Anthracis Lethal factor (LF) (C-terminal peptide) IgG#3	Antibodies
	LF13-C	Purified Recombinant Anthrax lethal factor (LF) protein control for WB	Western control
	LF14-A	Rabbit Anti-B. Anthracis Lethal factor (LF) recombinant protein antiserum	Antibodies
	LF15-R	Purified Recombinant Anthrax Lethal Factor protein	Rec. Protein
	LF16-A	Goat Anti-lethal factor (B Anthracis) IgG	Antibodies
	LFPI-4	Lethal factor protease Inhibitor-1, Cell permeable, 14aa MEK2 analog, competitive inhibitor of LF	Peptide
	LFPS-1	Lethal factor Protease Substrate 1, Internally quenched Coumarin peptide substrate for monitoring LF protease activity (19aa)	Peptide
	LFPS-2	Lethal factor Protease Substrate 2, pNA derivative MEK2 peptide substrate for high-throughput screening of LF inhibitors (14aa)	Peptide
	LFPS-3	Lethal factor Protease Substrate 3, AMC derivative MEK2 peptide substrate for high-throughput screening of LF inhibitors (14aa)	Peptide
Anthrax PA83	PA83-R	Purified Recombinant Anthrax Protective Antigen (83 kD)	Rec. Protein
	PA11-M	Monoclonal Anti-Anthrax Protective antigen (PA83) IgG # 1, aff pure	Antibodies
	PA12-MB	Monoclonal Anti-Anthrax Protective antigen (PA83) IgG biotinylated	Antibodies
	PA16-A	Goat Anti-Protective Antigen 83 (PA83; B Anthracis) IgG	Antibodies
	PA16-B	Goat Anti-Protective Antigen 83 (PA83; B Anthracis) IgG-biotinylated	Antibodies
	PA17-A	Rabbit Anti-B. Anthracis Anthrax protective antigen 83 (PA83) (C-terminal peptide) IgG	Antibodies
	PA17-C	Purified Recombinant Anthrax Protective Antigen (PA83 kD) protein control for WB	Western control
	PA18-S	Rabbit Anti-B. Anthracis Anthrax protective antigen 83 (PA83) recomb. Protein antiserum	Antibodies
Anthrax PA20	PA20-C	Purified Recombinant Anthrax Protective Antigen (20 kD/PA20) protein control for WB	Western control
	PA20-R	Purified Recombinant Anthrax Protective Antigen (20 Kda)	Rec. Protein
Anthrax PA63	PA63-C	Purified Recombinant Anthrax Protective Antigen (63 kD/PA63) protein control for WB	Western control
	PA63-R	Purified Recombinant Anthrax Protective Antigen (63kD)	Rec. Protein
Anthrax Spore extract antigens	SA11-A	Rabbit Anti-Anthrax Spore extract antigen (90 kda), aff pure IgG #1	Antibodies
	SA12-M	Monoclonal Anti-Anthrax Spore extract antigen IgG # 2, aff pure	Antibodies
	SA12-MB	Monoclonal Anti-Anthrax Spore extract antigen IgG-biotinylated, aff pure	Antibodies
	SA13-M	Monoclonal Anti-Anthrax Spore extract antigen IgG # 3, aff pure	Antibodies