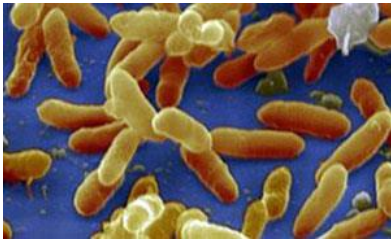
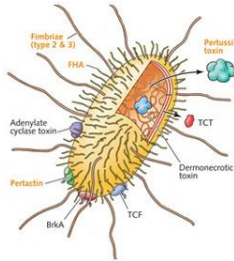


Pertussis Vaccines: Antibody ELISA Kits, Recombinant Proteins, Peptides and Antibodies

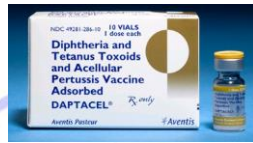


Pertussis, also known as the **whooping cough**, is a highly contagious disease caused by the bacterium **Bordetella pertussis**. It derived its name from the "whoop" sound made from the inspiration of air after a cough. Despite generally

high coverage with the DTP and DTaP vaccines, pertussis is one of the leading causes of vaccine-preventable deaths world-wide.



B. pertussis vaccine was first developed in 1920 using whole bacterium. In 1942, the whole-cell pertussis vaccine was combined with diphtheria and tetanus toxoids to generate the first **DTP combination vaccine**. Whole cell vaccines have some side effects. **Acellular pertussis vaccines contain between one**



and five B. pertussis antigens: pertussis toxin (Ptx), filamentous hemagglutinin (FHA), pertactin (Prn), and fimbriae (Fim2 and Fim3). Many aspects of the pathogenesis of pertussis and vaccine correlates of protection are poorly understood. However, antibodies to all components of pertussis antigens (PTX, Prn, FHA and Fim) appear to have a direct correlation with protection. The vaccines with three or more components consisting of filamentous hemagglutinin (**FHA**), pertussis toxin (**PT**) and pertactin (**PRN**) are considered to be more effective than one/two-component pertussis vaccines that contain only PT or both PT and FHA.

Pertactin (PRN or p69 protein) is a highly immunogenic virulence factor of B. Pertussis. Specifically, it is an outer membrane protein that promotes adhesion to tracheal epithelial cells. **Pertussis toxin (PTX)** has numerous biological activities and probably plays a role in hampering the host immune response. PT is a protein-based **A/B-type exotoxin** because they are formed from two subunits. The "A" subunit possesses enzyme activity, and is transferred to the host cell following a conformational change in the membrane-bound transport "B" subunit.

FHA is one of two hemeagglutinins produced by phase I strains of B. pertussis. On a weight basis, FHA is five to seven times more active in hemeagglutination (HA) assays than is pertussis toxin. FHA is a protein with an approximate molecular weight of 200 Kda. **Fimbriae** have been considered important vaccine components for many years in both whole-cell and acellular vaccines. B. pertussis expresses two serologically distinct fimbriae composed of either **Fim2** (207-aa; 22.5 kda) or **Fim3** (204-aa, 22 kda) major subunits. Antibody responses to Fim1-3 have been observed in human samples.

Pertussis Vaccines: Trihibit (DTAP/Hib), ActHib (Hib-PRP-T), Daptacel (DTAP), Tripedia (DTAP), Adacel (tetanus, Diphtheria, Acellular Pertussis) - Sanofi Pasteur; PedvaxHib (Hib-PRP-OMP) – Merck; Pediarix (DTAP/HepB/IPV), Infanrix (DTAP), Boostrix (Tetanus, Diphtheria, Acellular Pertussis) - GlaxoSmithKline.

ADI has developed antibody ELISA kits to determine the efficacy of various Pertussis vaccines. ADI is further expanding the antibody ELISAs to measure IgG (and IgG1, IgG2a, IgG3, IgG4) and IgM classes. ADI has also introduced industry's first **ELISA for direct testing of Pertussis Toxoid adsorbed on Alum** (for vaccine identification and testing) or in purified/semi purified preparations of toxoid during vaccine manufacturing.

Pertussis Vaccine Related ELISA kits

Species	ELISA Kit Type	Species	Total IgG Cat#	IgM Specific Cat#	IgA Specific Cat#
B. pertussis whole vaccine (Pertussis Toxin, FHA and LPS) antibody ELISA	Ab	Human	960-110-PHG	960-220-PHM	960-200-PHA
		Mouse	960-120-PHG	960-225-PHM	960-205-PHA
		Monkey	960-210-PHG	960-220-PHM	
B. pertussis vaccine (Toxin/toxoid) Antibody ELISAs	Ab	Mouse	960-130-PMG	960-140-PMG	960-140-PMG
		Rabbit	960-150-PRG	960-160-PRM	960-160-PRM
		G. Pig	960-170-PMG	960-180-PMM	960-180-PMM
B. pertussis vaccine (Pertactin/PRN) Antibody ELISAs	Ab	Mouse	960-230-PGG		
		Rabbit	960-240-PRG		
		Human	960-250-PHG		
		Monkey	960-260-PMG		
B. pertussis vaccine Filamentous hemagglutinins (FHA) Antibody ELISAs	Ab	Human	960-340-FHG	960-350-FHM	
		Mouse	960-300-FMG	960-310-FMM	
		Rabbit	960-320-FRG	960-330-FRM	
B. pertussis vaccine Fimbriae 2/3 (Fim2/3) Antibody ELISAs	Ab	Human	960-370-FIG	960-375-FIM	
		Mouse	960-360-FIG	960-365-FIM	

Pertussis Vaccine Antigen ELISA kits

Description	ELISA Kit Type	
B. pertussis Vaccine (Pertussis Toxin, PT/PTOX) Antigen ELISA	PT Antigen	#960-PTX-AG1 ; B. Pertussis Toxoid/Toxin (PTX) vaccine ELISA for the measurement PTX in biological buffer, 96 tests #VAC-PTX-50 ; Vaccigel Direct ELISA for the measurement of Pertussis Toxoid in Vaccines formulated in Alum
B. pertussis Vaccine (FHA) Antigen ELISA	FHA Antigen	#960-FHA-AG1 ; FHA ELISA for the measurement PTX in biological buffer
B. pertussis Pertactin (PRN) Antigen ELISA	PRN Antigen	#960-PRN-AG1 ; PRN ELISA for the measurement PTX in biological buffer

Pertussis Vaccine Related Antibodies, Proteins and other Reagents

Item	Catalog#	Product Description	Product Type
Filamentous hemeagglutinin (FHA)	FHA11-S	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) protein antiserum	Antibodies
	FHA15-N-10	Filamentous Hemeagglutinin (FHA) (B. pertussis), purified	Pure protein
	FHA21-S	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgM negative control for ELISA, IF, Western	Antibodies
	FHA22-S	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgM positive control for ELISA, IF, Western	Antibodies
	FHA31-S	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgG negative control for ELISA, IF, Western	Antibodies
	FHA32-S	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgG positive control for ELISA, IF, Western	Antibodies
FIM	FIM235-N-10	Recombinant purified FIMBRIAE 2/3 (FHA) (B. pertussis), antigen grade	Pure protein
B. pertussis Pertactin	PRN11-C	Recombinant (E. coli) B. pertussis Pertactin (91 kda) protein control for Western	Pure protein
	PRN11-S	Rabbit Anti-B. pertussis Pertactin (full length, 91 kda) protein antiserum	Antibodies
	PRN15-R-10	Recombinant (E. coli) B. pertussis Pertactin (full length, 91 kda, his-tag) purified protein	Pure protein
B. pertussis Toxin	PTOX15-N-50	Pertussis Toxin (islet activating protein, B. pertussis), purified	Pure protein
	PTOX15-S	Rabbit Anti-B. pertussis Toxin IgM negative control for ELISA, IF, Western	Antibodies
	PTOX16-S	Rabbit Anti-B. pertussis Toxin IgM positive control for ELISA, IF, Western	Antibodies
	PTOX17-S	Rabbit Anti-B. pertussis Toxin IgG negative control for ELISA, IF, Western	Antibodies
	PTOX18-S	Rabbit Anti-B. pertussis Toxin IgG positive control for ELISA, IF, Western	Antibodies
	PTOX21-S	G. Pig Anti-B. pertussis Toxin IgG negative control for ELISA, IF, Western	Antibodies
	PTOX22-S	G. Pig Anti-B. pertussis Toxin IgG positive control for ELISA, IF, Western	Antibodies
	PTOX23-S	G. Pig Anti-B. pertussis Toxin IgM negative control for ELISA, IF, Western	Antibodies
	PTOX24-S	G. Pig Anti-B. pertussis Toxin IgM positive control for ELISA, IF, Western	Antibodies
	PTOX31-S	Mouse Anti-B. pertussis Toxin IgG positive control for ELISA, IF, Western	Antibodies
	PTOX32-S	Mouse Anti-B. pertussis Toxin IgM negative control for ELISA, IF, Western	Antibodies
	PTOX33-S	Mouse Anti-B. pertussis Toxin IgG negative control for ELISA, IF, Western	Antibodies
	PTOX34-S	Mouse Anti-B. pertussis Toxin IgG positive control for ELISA, IF, Western	Antibodies
	PTOX35-N-10	Pertussis Toxin A promoter (B. pertussis), purified	Pure protein
	PTOX36-N-10	Pertussis Toxin B promoter (B. pertussis), purified	Pure protein
	PTOX41-F	Monoclonal Anti-B. pertussis LPS (Los-A) IgG-FITC Conjugate	Antibodies
	PTOX41-M	Monoclonal Anti-B. pertussis/B.bronchiseptica LPS (Los-A) IgG unlabeled	Antibodies
	PTOX42-M	Monoclonal Anti-B. pertussis Toxin IgG unlabeled	Antibodies
	PTOX43-M	Monoclonal Anti-B. pertussis Toxin subunit S1, IgG unlabeled	Antibodies
	PTOX44-M	Monoclonal Anti-B. pertussis Toxin subunit S2, IgG unlabeled	Antibodies
PTOX45-M	Monoclonal Anti-B. pertussis Toxin subunit S3, IgG unlabeled	Antibodies	

Pertussis_Vaccine_Flr 160612A

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