

Product Specification Sheet

Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgM negative and positive controls

- Cat. # FHA21-S Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) **IgM negative** control for ELISA, IF, Western
SIZE: 1 ml
- Cat. # FHA22-S Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) **IgM positive** control for ELISA, IF, Western
SIZE: 1 ml

Bordetella pertussis is a Gram-negative, aerobic coccobacillus of the genus *Bordetella*, and the causative agent of pertussis or whooping cough. Unlike *B. bronchiseptica*, *B. pertussis* is non-motile. There does not appear to be a zoonotic reservoir for *B. pertussis*—humans are its only host. The bacterium is spread by coughing and by nasal dripping. The incubation period is 7-14 days. Pertussis (or whooping cough) is an infection of the respiratory system and characterized by a “whooping” sound when the person breathes in. In the US it killed 5,000 to 10,000 people per year before a vaccine was available. Worldwide in 2000, according to the WHO, around 39 million people were infected annually and about 297,000 died. *Bordetella pertussis* infects its host by colonizing lung epithelial cells. The bacterium contains a surface protein, **filamentous hemagglutinin (FHA)**, which binds to sulfatides that are found on cilia of epithelial cells. Once anchored, the bacterium produces tracheal cytotoxin, which stops the cilia from beating. This prevents the cilia from clearing debris from the lungs, so the body responds by sending the host into a coughing fit. These coughs expel some bacteria into the air, which are free to infect other hosts.

Filamentous hemagglutinin (fimbrial hemagglutinin or FHA) is one of two hemagglutinins produced by phase I strains of *Bordetella pertussis*. The use of FHA as one component of a new acellular vaccine is currently under investigation. FHA is named for its rod-like shape and its ability to agglutinate erythrocytes from a variety of species. On a weight basis, FHA is five to seven times more active in hemagglutination (HA) assays than is pertussis toxin. Moreover, the HA-activity of FHA, but not that of pertussis toxin, is abolished in the presence of low levels of cholesterol. FHA is a protein with an approximate molecular weight of 200,000 daltons. However, some preparations of this protein contain varying amounts of two lower molecular weight components in the 90,000 to 130,000 dalton range. Although monoclonal and polyclonal antibodies prepared against FHA also react with these faster migrating components, it is not known whether the latter represent degradation products or subunits of FHA.

Pertussis vaccine is part of the DTaP (diphtheria, tetanus, acellular pertussis) immunization. Acellular pertussis vaccines contain antigen components of *B. pertussis*, usually lymphocytosis promoting factor (LPF) which is also called pertussis-toxin (PT) or pertussigen, filamentous hemagglutinin (FH) and, eventually, agglutinogens 2 and 3.

Source of Antigen and Antibodies

Ab Host/type	Rabbit, Anti-FHA IgM -ve control (#FHA31-S) diluted in PBS, pH 7.4, 0.05% azide
-ve control	Rabbit, Anti-FHA IgM +ve control (#FHA32-S) diluted in PBS, pH 7.4, 0.05% azide
2-ab	Goat Anti-rabbit IgM-HRP cat # 20220 (AP, biotin, FITC conjugates also available)

Storage

Short-term: unopened, undiluted liquid vials at -20oC and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Rabbit anti-B. pertussis FHA IgM negative and positive controls were tested undiluted in ELISA using ADI kit # 960-320-FRG (A450=>1.00) for positive control and -ve control (A450=<0.200). Further dilution of the controls in a given technique (ELISA, IF, or Western) should be optimized. The values may change if using other kits or different testing conditions than recommended in the ELISA kit.

References: Caroff M (1990) J. Bacteriol. 172, 1121-1128; LeDur A (1980) J. Bacteriol. 143, 78-88; Li Z (1988) Inf. Immunity Infect. Immunity 56, 699-702; Pepler MS (1984) Infect. Immunity 43, 224-232

*This product is for In vitro research use only.

Related material available from ADI

Recombinant PTX, FHA, pertactin, Antibodies and ELISA kits

Catalog#	ProdDescription
960-110-PHG	Human Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgG, 96 tests, Quantitative
960-120-PHG	Mouse Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgG ELISA kit, 5x96 tests, Quantitative
960-130-PMG	Mouse Anti-B. pertussis toxin/toxid IgG ELISA kit, 2x96 tests, Quantitative
960-140-PHM	cat# changed to #960-140-PMM; Mouse Anti-B. pertussis IgM ELISA kit
960-140-PMM	Mouse Anti-B. pertussis toxin/toxid IgM ELISA kit, 2x96 tests, Quantitative
960-150-PRG	Rabbit Anti-B. pertussis toxin/toxid IgG ELISA kit, 2x96 tests, Quantitative
960-160-PRM	Rabbit Anti-B. pertussis toxin/toxid IgM ELISA kit, 2x96 tests, Quantitative
960-170-PMG	G. pig Anti-B. pertussis toxin/toxid IgG ELISA kit, 2x96 tests, Quantitative
960-180-PMM	G. pig Anti-B. pertussis toxin/toxid IgM ELISA kit, 2x96 tests, Quantitative
960-200-PHA	Human Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgA ELISA kit, 96 tests, Quantitative
960-200-PHA	Monkey Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgA ELISA kit, 5x96 tests, Quantitative
960-210-PHG	Monkey Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgG ELISA kit, 5x96 tests, Quantitative
960-220-PHM	Human Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgM ELISA kit, 96 tests, Quantitative
960-220-PHM	Monkey Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgM ELISA kit, 5x96 tests, Quantitative
960-230-PGG	Mouse Anti-B. pertussis Pertactin IgG ELISA kit, 2x96 tests
960-240-PRG	Rabbit Anti-B. pertussis Pertactin IgG ELISA kit, 2x96 tests
960-250-PHG	Human Anti-B. pertussis Pertactin IgG ELISA kit, 5x96 tests
960-260-PMG	Monkey Anti-B. pertussis Pertactin IgG ELISA kit, 5x96 tests
FHA21-S	140915A

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