ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

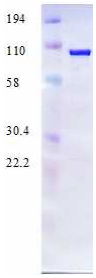
B. pertussis Pertactin (PRN) Protein

☐ Cat. # PRN15-R-10 Recombinant (E. coli) B. pertussis Pertactin (full length, 91 kda, his-tag) purified protein **SIZE**: 10 ug

Pertussis, also known as the whooping cough, is a highly contagious disease caused by the bacterium Bordetella pertussis. Despite generally high coverage with the DTP and DTaP vaccines, pertussis is one of the leading causes of vaccine-preventable deaths world-wide. Ninety percent of all cases occur in the Third World. It is transmitted by airborne infection. 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 vaccine consisting of purified haemagglutinins (HAs: filamentous HA and leucocytosis-promoting-factor HA), which are secreted by B. pertussis into the culture medium are being using alone or in combination with DTaP (aP represents acellular vaccine). The introduction of acellular pertussis (Pa) vaccines in countries with a low uptake of whole-cell pertussis (Pw) vaccines has led to a dramatic reduction in pertussis disease. Those 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 Pa vaccines that contain only PT or both PT and FHA.

Pertactin (PRN or p69 protein) is a highly immunogenic virulence factor of Bordetella pertussis, a bacterium that causes pertussis. Specifically, it is an outer membrane protein that promotes adhesion to tracheal epithelial cells. PRN is purified from Bordetella pertussis and is used for the vaccine production as one of the important components of acellular pertussis vaccine. Pertactin domains are common components of the excreted portion of bacterial autotransporter proteins. The domain is made up of a beta helix of variable length. P.69 is produced as a large (910-aa) precursor molecule. It is proteolytically processed at its N and C termini to produce P.69 and P.30, which are located at the cell surface and in the outer membrane, respectively. P.69 contains the amino acid triplet arginine-glycine-aspartic acid (RGD), a sequence motif which functions as a cell-binding site in a number of mammalian proteins, and it has been shown that the P.69 RGD sequence is also involved in adherence to host cells . Like P.69, pertussis toxin is excreted and may be found loosely associated with the outer membrane. Pertussis toxin has numerous biological activities and probably plays a role in hampering the host immune response.

Source of Antigen and Antibodies



B. pertussis recombinant pertactin (protein accession #CAA06902.2, full length ~91 kda) was expressed in E. coli as His-tag protein and purified (>95%). It is supplied in 20 mM Tris, pH, 8.0, 0.1m NaCl, 5 mM B-mercaptoethnaol, 0.25 M imidazole and 6M GdnHCl. It is suitable for ELISA or WB or applications where native protein is not required. Do not freeze, thaw, or

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

ELISA: coat at 0.1-1 ug/ml
Western: load 50-200 ng/ml and detect with appropriate antibodies.

References: Charles I (1994) Microbiol. 140, 3301; Charles I (1989) PNAS 86, 3554; Emsley P (1996) N. Eng. J. Med. 334, 341; Kobishc M (1990) Inf. Immun. 58, 352; Leininger EC (1992) Inf. Immun. 60, 2380; 2385; Roberts MJ (1992) Vaccine 10, 43

*This product is for In vitro research use only.

Related material available from ADI

PRN11-C Recombinant (E. coli) B. pertussis Pertactin (full length, 91 kda) protein control for Western

PRN11-S Anti-B. pertussis Pertactin (full length, 91 kda) protein antiserum

Recombinant PTX, FHA, pertactin, Antibodies and ELISA kits for the detection antibodies to PTX, FHA, PRN in mouse, rabbit and humans.

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, 96 tests, Quantitative
960-130-PMG	Mouse Anti-B. pertussis toxin/toxoid IgG ELISA kit, 96
960-150-PRG	Rabbit Anti-B. pertussis toxin/toxoid IgG ELISA kit, 96
960-170-PMG	G. pig Anti-B. pertussis toxin/toxoid IgG ELISA kit, 96 tests,
960-200-PHA	Human Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgA ELISA kit, 96 tests, Quantitative
960-205-PHA	Monkey Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgA ELISA kit, 96 tests, Quantitative
960-220-PHM	Human Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgM ELISA kit, 96 tests, Quantitative
960-225-PHM	Monkey Anti-B. pertussis antigens (Pertussis toxin, FHA and LPS) IgM ELISA kit, 96 tests, Quantitative
960-230-PGG	Mouse Anti-B. pertussis Pertactin IgG ELISA kit, 96 tests
960-240-PRG	Rabbit Anti-B. pertussis Pertactin IgG ELISA kit, 96 tests
960-250-PHG	Human Anti-B. pertussis Pertactin IgG ELISA kit, 96 tests
960-260-PMG	Monkey Anti-B. pertussis Pertactin IgG ELISA kit, 96 tests
960-300-FMG	Mouse Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgG ELISA kit, 96 tests
960-310-FMM	Mouse Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgM ELISA kit, 96 tests
960-320-FRG	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgG ELISA kit, 96 tests
960-330-FRM	Rabbit Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgM ELISA kit, 96 tests
960-340-FHG	Human Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgG ELISA kit, 96 tests
960-350-FHM	Human Anti-B. pertussis Filamentous hemeagglutinin (FHA) IgM ELISA kit, 96 tests

PRN15-R-10 131216A

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