ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

# Anti-B. pertussis Pertactin (PRN) antibodies and controls

| | | |
|---|---|---|
| Cat. # PRN11-S | Rabbit Anti-B. pertussis Pertactin (full length, 91 kda) protein antiserum | **SIZE**: 100 ul |
| Cat. # PRN11-C | Rabbit Anti-B. pertussis Pertactin **control** for Western | **SIZE**: 100 ul |

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-amino-acid) 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.

**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

B. pertussis recombinant pertactin (protein accession #CAA06902.3, full length ~91 kda) was expressed as His-tag protein and purified (>95%). For Western blot +ve control (**Cat # PRN11-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **PRN11**-C for good visibility with antibody Cat # **PRN11**-S. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **PRN11**-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly.

## Source of Antigen and Antibodies

| | |
|---|---|
| **Antigen** | Purified B. pertussis Pertactin protein (protein accession #CAA06902.3) expressed in E. coli as his-tag protein (~91 Kda) |
| **Ab Host/type** | Rabbit, polyclonal antiserum (#PRN11-S) 0.05% azide |
| **2-ab** | **Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)** |
| **-ve control** | # 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control |

**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: 1:1000-1:10,000 dilution of primary antibody
Western: 1:500-1:2000 dilution

**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

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

PRN11-S 120612A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com

**India Contact**:
**Life Technologies (India) Pvt. Ltd.**
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com