ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Pertussis Toxin

Cat.# PTOX35-N-10 Pertussis Toxin A protomer (S1/B. pertussis), purified **Size**: 10 ug

Pertussis toxin (PT) is a protein-based AB5-type exotoxin produced by the bacterium Bordetella pertussis, which causes whooping cough. PT is involved in the colonization of the respiratory tract and the establishment of infection. PT may have a therapeutic role in treating a number of common human ailments, including hypertension, viral inhibition, and autoimmune inhibition.

A large group of bacterial exotoxins are referred to as "A/B toxins", in essence 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. Pertussis toxin is an exotoxin with six subunits (named S1 through S5—each complex contains two copies of S4). The subunits are arranged in A-B structure: the A component is enzymatically active and is formed from the S1 subunit, while the B component is the receptor-binding portion and is made up of subunits S2–S5. The subunits are encoded by ptx genes encoded on a large PT operon that also includes additional genes that encode Ptl proteins. Together, these proteins form the PT secretion complex.

B. pertussis expresses two forms of a rough-type lipooligosaccharide (LOS), which have been referred to as LOS A and LOS B. The two forms of LOS can be resolved as two distinct molecular weight species in silver stained sodium dodecyl sulfate-polyacrylamide gels of protease-treated B. pertussis cell lysates. The difference between the two forms of LOS has been shown to be due to three additional N-acetyl amino sugars in the core oligosaccharide moiety of LOS A that are not present in LOS B. The structure and biological activity of B. pertussis LOS are similar to those of LOSs of other gram negative bacteria that contain lipid A and a core oligosaccharide moiety containing 2-keto-3-deoxyoctonate, exhibiting lethal toxicity in mice, pyrogenicity in rabbits, and mitogenicity in cell cultures.

Toxoid refers to the inactivated version of the active toxin. It is typically produced by formaldehyde inactivation of the active protein. The A protomer (S1) of pertussis toxin possesses both NAD+ glycohydrolase and ADP-ribosyltransferase activities, but is unable to penetrate cells in the absence of B oligomer. It is, however, as effective as native pertussis toxin in catalyzing ADP-ribosylation in broken cell preparations.

Source of Antigen

Purified pertussis toxin A protomer (MW: 28kDa) is obtained from B. pertussis, and purified (>99%). Toxin A protomer is supplied in a buffer (in 10mM Tris, pH 8.0, 0.1mM Na_2EDTA, 0.03% CHAPS). The lyophilized product should be reconstituted in distilled water to prepare desired concentration by gentle mixing at room temperature. Store at 4°C prior to reconstitution.

Stability: The lyophilized preparation will remain active for at least one year. After reconstitution with sterile water this product should remain active for at least four weeks if stored at 4°C. Store at -20°C following reconstitution for long term stability.

The product must be treated as potentially toxic and care taken in using and handling of this product. Do not vortex. This product should only be handled by qualified lab personnel. It is only produced for in vitro research use. ADI assumes no liability from the use or misuse of this product.

Bio-assays

When assessed in a CHO cell assay, 0.01%holotoxin was detected.

Recommended Usage

Purified protein can be used for ELISA, Western or antibody titration

References: 1.Bradford MM (1976) Anal.Biochem. 72, 248-254; 2 Tamura M, Nogomori K, Murai S, Yajima M et al (1983) Biochem 21, 5516-5522; 3. Laemmli UK (1970) Nature 227, 680-685; 4. Hewlett EL, Sauer KT, Myers GA et al. (1983) Infect.Immun. 40, 1198-1203.

***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/toxoid 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/toxoid IgM ELISA kit, 2x96 tests, Quantitative
960-150-PRG	Rabbit Anti-B. pertussis toxin/toxoid IgG ELISA kit, 2x96 tests, Quantitative
960-160-PRM	Rabbit Anti-B. pertussis toxin/toxoid IgM ELISA kit, 2x96 tests, Quantitative
960-170-PMG G.	pig Anti-B. pertussis toxin/toxoid IgG ELISA kit, 2x96 tests, Quantitative
960-180-PMM G	pig Anti-B. pertussis toxin/toxoid 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
PTOX36-N-10	Pertussis Toxin B promoter (S2-5/B. pertussis), purified

PTOX35-N-10-Pertussis-Toxin A 150813C

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