

Pertussis Toxin from *Bordetella pertussis*

01-503 25 µg

Storage: Shipped with dry-ice and store at -80°C.

Applications:

1. Studies on the signal transduction of the trimeric GTP binding proteins.
2. Therapeutic role in treating a number of diseases including hypertension, viral and autoimmune inhibitions.
3. Used for producing model mice for multiple sclerosis

State: 50~500 µg/ml depending on lot in 10% glycerol 10 mM phosphate buffer (pH 7.4), 137 mM NaCl

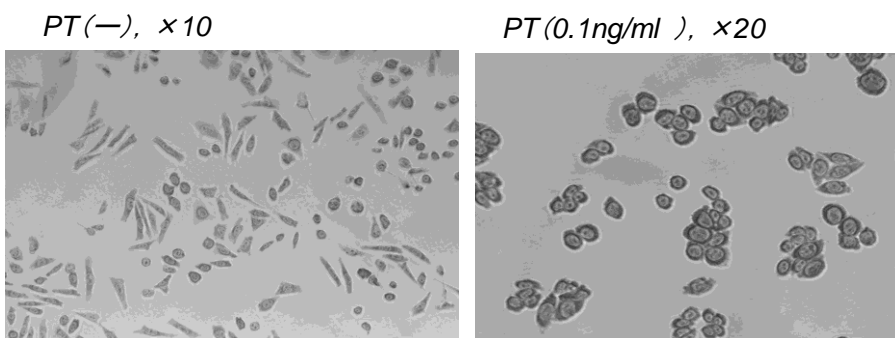
Background: Pertussis toxin (PT) is a protein-based AB₅-type exotoxin produced by *Bordetella pertussis*. PT catalyzes the ADP-ribosylation of the α subunits of the heterotrimeric guanine nucleotide regulatory proteins Gi, Go, and Gt and prevents intracellular signal transduction involving the G proteins. PT consists of one molecule of each S1 (26 kDa), S2 (22 kDa), S3 (22 kDa), S5 (12 kDa) and two molecule of S4 (12 kDa). This product was highly purified (>90% pure) from *Bordetella pertussis* strain Tohama by the method of Skelton & Wong¹⁾. Cytotoxicity of the PT was confirmed by morphological alteration of CHO cells after treatment with 0.1 ng/ml of PT (see the Figure below).

Data Link: UniProtKB [P04977](#) (TOX1_BORPE), [P04978](#) (TOX2_BORPE), [P04979](#) (TOX3_BORPE), [P0A3R5](#) (TOX4_BORPE), [P04981](#) (TOX5_BORPE)

References:

1. Skelton SK and Wong KH "Simple, efficient purification of filamentous hemagglutinin and pertussis toxin from *Bordetella pertussis* by hydrophobic and affinity interaction." *J. Clin Microbiol* **28**:1062-1065 (1990) PMID: [2351723](#)
2. Alouf JE & Popoff MR (Ed.) The comprehensive Sourcebook of Bacterial Protein Toxins 3rd Ed. Academic Press (2006)

Fig.1 Assay: 0.1 ng/ml of PT in the culture medium of CHO cells at 37°C for 17 hr)



Left: Control culture without PT

Right: CHO cells treated with PT at 0.1 ng /ml

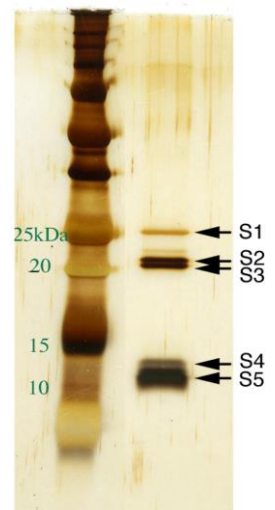


Fig.2 SDS-PAGE of PT (silver staining)

* Research use only, not for human use. Related Product: 64-030 [anti-Pertussis Toxin antibody](#)

Material Safety Data Sheet

Pertussis Toxin

Hazardous Ingredient

Pertussis toxin highly purified (>90% pure) from cultured medium of *Bordetella pertussis* strain Tohama

50~500 µg/ml depending on lot, in 50% glycerol, 10 mM phosphate buffer pH 7.3, 75 mM NaCl.

Health Hazard Data

The LD₅₀ of pertussis toxin in mice is 15~21 µg/kg by intraperitoneal injection.

Emergency Procedure

If the toxin is accidentally swallowed, induce vomiting. Since the toxin is unstable in acidic conditions, it will be degraded in stomach.

If skin pricking occurs accidentally, bleed and perform vigorous flushing of the area with large amounts of water. If injection occurs, seek a physician's advice immediately. Hyperimmune globulin is the only antidote.

However, persons immunized with Pertussis (whooping cough) vaccine will unlikely have long term adversary effects.

Handling

It should be handled carefully by persons with expertise in knowledge and techniques for the safe handling of bacterial toxins. Avoid mouth pipetting. Wear protective gloves on handling the toxin. Avoid contact with open wounds. Wash thoroughly any area of the body that makes contact with the toxin. It is recommended that persons who handle the toxin are immunized by pertussis vaccine.

Inactivation

The toxin can be inactivated by boiling for 30 min.