

# Bordetella pertussis (BDI500): sc-57638

## BACKGROUND

*Bordetella pertussis* is a Gram-negative, non-motile coccobacilli of the genus *Bordetella* and it is the causative agent of whooping cough, also called pertussis acute, a highly communicable respiratory disease characterized in its typical form by paroxysms of coughing followed by a long-drawn inspiration. *Bordetella pertussis* are aerobic, encapsulated microbes that favor the lining of the human respiratory tract. In addition to the attachment to and growth on ciliated cells, *Bordetella pertussis* produces several exotoxins that contribute to its symptoms. The microbe inhibits many leukocyte functions, including chemotaxis and phagocytosis, and it impairs NK cell killing. *Bordetella pertussis* causes the covalent addition of ADP-ribose to the GTP binding  $G_i$  protein, thereby preventing the deactivation of adenylate cyclase. This results in the accumulation of large amounts of cAMP, which causes increased mucus secretion and interferes with various cellular functions.

## REFERENCES

1. Nicosia, A., Perugini, M., Franzini, C., Casagli, M.C., Borri, M.G., Antoni, G., Almoni, M., Neri, P., Ratti, G. and Rappuoli, R. 1986. Cloning and sequencing of the pertussis toxin genes: operon structure and gene duplication. *Proc. Natl. Acad. Sci. USA* 83: 4631-4635.
2. Brabet, P., Pantaloni, C., Rouot, B., Toutant, M., Garcia-Sainz, A., Bockaert, J. and Homburger, V. 1988. Multiple species and isoforms of *Bordetella pertussis* toxin substrates. *Biochem. Biophys. Res. Commun.* 152: 1185-1192.
3. Poolman, J.T., Kuipers, B., Vogel, M.L., Hamstra, H.J. and Nagel, J. 1991. Description of a hybridoma bank towards *Bordetella pertussis* toxin and surface antigens. *Microb. Pathog.* 8: 377-382.
4. Kourova, N., Caro, V., Weber, C., Thiberge, S., Chuprinina, R., Tseneva, G. and Guiso, N. 2003. Comparison of the *Bordetella pertussis* and *Bordetella parapertussis* isolates circulating in Saint Petersburg between 1998 and 2000 with Russian vaccine strains. *J. Clin. Microbiol.* 41: 3706-3711.
5. Pishko, E.J., Betting, D.J., Hutter, C.S. and Harvill, E.T. 2003. *Bordetella pertussis* acquires resistance to complement-mediated killing *in vivo*. *Infect. Immun.* 71: 4936-4942.
6. Rodriguez, ME. and van der Pol, WL. 2003. Humoral immunity against *Bordetella pertussis*: antibodies or B cells? *Infect. Immun.* 71: 6686.
7. Florax, A., Ehlert, K., Becker, K., Vormoor, J. and Groll, A.H. 2006. *Bordetella pertussis* respiratory infection following hematopoietic stem cell transplantation: time for universal vaccination? *Bone Marrow Transplant.* 38: 639-640.
8. Medeiros, M.A., Armôa, G.R., Dellagostin, O.A. and McIntosh, D. 2006. Induction of humoral immunity in response to immunization with recombinant *Mycobacterium bovis* BCG expressing the S1 subunit of *Bordetella pertussis* toxin. *Can. J. Microbiol.* 51: 1015-1020.
9. Storm, M., Advani, A., Pettersson, M., Hallander, H.O. and Bondeson, K. 2006. Comparison of real-time PCR and pyrosequencing for typing *Bordetella pertussis* toxin subunit 1 variants. *J. Microbiol. Methods* 65: 153-158.

## SOURCE

*Bordetella pertussis* (BDI500) is a mouse monoclonal antibody raised against *Bordetella pertussis* N-lauroyl sarcosine membrane extract.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>3</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

*Bordetella pertussis* (BDI500) is recommended for detection of LOS-A of *Bordetella pertussis* and *Bordetella bronchiseptica* by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.