

29. Willems R, Paul A, van der Heide HG, ter Avest AR, Mooi FR. Fimbrial phase variation in *Bordetella pertussis*: a novel mechanism for transcriptional regulation. *EMBO J*. 1990;9:2803–9.
30. Salaün L, Snyder LA, Saunders NJ. Adaptation by phase variation in pathogenic bacteria. *Adv Appl Microbiol*. 2003;52:263–301. [http://dx.doi.org/10.1016/S0065-2164\(03\)01011-6](http://dx.doi.org/10.1016/S0065-2164(03)01011-6)
31. van Gent M, van Loo IH, Heuvelman KJ, de Neeling AJ, Teunis P, Mooi FR. Studies on prn variation in the mouse model and comparison with epidemiological data. *PLoS ONE*. 2011;6:e18014. <http://dx.doi.org/10.1371/journal.pone.0018014>
32. Bassinet L, Gueirard P, Maitre B, Housset B, Gounon P, Guiso N. Role of adhesins and toxins in invasion of human tracheal epithelial cells by *Bordetella pertussis*. *Infect Immun*. 2000;68:1934–41. <http://dx.doi.org/10.1128/IAI.68.4.1934-1941.2000>

Address for correspondence: Ruiting Lan, School of Biotechnology and Biomolecular Sciences, University of New South Wales, Biological Sciences Building D26, Sydney 2052, New South Wales, Australia; email: [r.lan@unsw.edu.au](mailto:r.lan@unsw.edu.au)

# etymologia

## Pertactin

### Pertactin [*per-tak'tin*]

From *per-* (pertussis) + *tactus* (Latin, “to touch”), pertactin is a virulence factor of *Bordetella pertussis* that promotes adhesion to tracheal epithelial cells and resistance to neutrophil-mediated clearance and is a component of acellular pertussis vaccines. Pertactin-negative

*B. pertussis* has been reported in several countries, and its prevalence in the United States has increased in recent years. However, evidence suggests that other components of current pertussis vaccines provide protection against pertactin-negative strains.

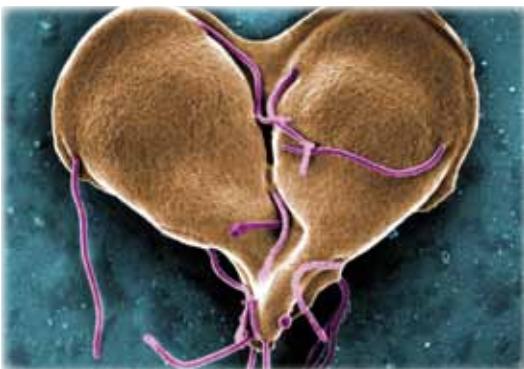
### Sources

- Inatsuka CS, Xu Q, Vujkovic-Cvijin I, Wong S, Stibitz S, Miller JF, et al. Pertactin is required for *Bordetella* species to resist neutrophil-mediated clearance. *Infect Immun*. 2010;78:2901–9. <http://dx.doi.org/10.1128/IAI.00188-10>
- Leininger E, Roberts M, Kenimer JG, Charles IG, Fairweather N, Novotny P, et al. Pertactin, an Arg-Gly-Asp-containing *Bordetella pertussis* surface protein that promotes adherence of mammalian cells. *Proc Natl Acad Sci U S A*. 1991;88:345–9. <http://dx.doi.org/10.1073/pnas.88.2.345>
- Pawloski LC, Queenan AM, Cassidy PK. Prevalence and molecular characterization of pertactin-deficient *Bordetella pertussis* in the United States. *Clin Vaccine Immunol*. 2014;21:119–25. <http://dx.doi.org/10.1128/CVI.00717-13>

Address for correspondence: Ronnie Henry, Centers for Disease Control and Prevention, 1600 Clifton Rd NE, Mailstop E03, Atlanta, GA 30333, USA; email: [boq3@cdc.gov](mailto:boq3@cdc.gov)

DOI: <http://dx.doi.org/10.3201/eid2004.ET2004>

## The Public Health Image Library (PHIL)



The Public Health Image Library (PHIL), Centers for Disease Control and Prevention, contains thousands of public health-related images, including high-resolution (print quality) photographs, illustrations, and videos.

PHIL collections illustrate current events and articles, supply visual content for health promotion brochures, document the effects of disease, and enhance instructional media.

PHIL Images, accessible to PC and Macintosh users, are in the public domain and available without charge.

Visit PHIL at <http://phil.cdc.gov/phil>