



Helicobacter pylori OMP (BDI176): sc-57779

BACKGROUND

Helicobacter pylori is a bacterium that infects the mucus lining of mammalian stomach and duodenum and may cause peptic ulcers, gastritis and duodenitis. It is estimated that about 66% of the world population are infected by the bacterium, though most do not experience symptoms. This spiral-shaped Gram-negative bacterium is unique in that it can thrive in the highly acidic environment of the stomach. *Helicobacter pylori* can exist in a number of locations: in the mucus; attached to epithelial cells; or inside of vacuoles in epithelial cells, where it produces adhesins that bind to membrane-associated lipids and carbohydrates to help its adhesion to epithelial cells. *Helicobacter pylori* contains a hydrogenase enzyme and obtains energy by oxidizing molecular hydrogen produced by other intestinal bacteria. It also excretes urease in order to convert urea into ammonia and bicarbonate which neutralizes the acidic environment of the stomach. *Helicobacter pylori* OMPs (outer membrane proteins) are involved in *Helicobacter pylori* adhesion and can cause signal transduction events in host cells.

REFERENCES

1. Marshall, B.J. and Warren, J.R. 1984. Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. *Lancet* 1: 1311-1315.
2. Bode, G., Malfertheiner, P., Lehnhardt, G., Nilius, M. and Ditschuneit, H. 1994. Ultrastructural localization of urease of *Helicobacter pylori*. *Med. Microbiol. Immunol.* 182: 233-242.
3. Logan, R.P. and Walker, M.M. 2001. ABC of the upper gastrointestinal tract: epidemiology and diagnosis of *Helicobacter pylori* infection. *BMJ* 323: 920-922.
4. Olson, J.W. and Maier, R.J. 2002. Molecular hydrogen as an energy source for *Helicobacter pylori*. *Science* 298: 1788-1790.
5. Tsuji, S., Kawai, N., Tsujii, M., Kawano, S. and Hori, M. 2003. Review article: inflammation-related promotion of gastrointestinal carcinogenesis—a perigenetic pathway. *Aliment. Pharmacol. Ther.* 18: 82-89.
6. Konturek, J.W. 2004. Discovery by Jaworski of *Helicobacter pylori* and its pathogenetic role in peptic ulcer, gastritis and gastric cancer. *J. Physiol. Pharmacol.* 54: 23-41.
7. Viala, J., Chaput, C., Boneca, I.G., Cardona, A., Girardin, S.E., Moran, A.P., Athman, R., Memet, S., Huerre, M.R., Coyle, A.J., DiStefano, P.S., Sansonetti, P.J., Labigne, A., Bertin, J., Philpott, D.J. and Ferrero, R.L. 2004. Nod1 responds to peptidoglycan delivered by the *Helicobacter pylori* cag pathogenicity island. *Nat. Immunol.* 5: 1166-1174.
8. Blaser, M.J. 2005. An endangered species in the stomach. *Sci. Am.* 292: 38-45.
9. Pietroiusti, A., Luzzi, I., Gomez, M.J., Magrini, A., Bergamaschi, A., Forlini, A. and Galante, A. 2005. *Helicobacter pylori* duodenal colonization is a strong risk factor for the development of duodenal ulcer. *Aliment. Pharmacol. Ther.* 21: 909-915.

RESEARCH USE

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

SOURCE

Helicobacter pylori OMP (BDI176) is a mouse monoclonal antibody raised against a whole cell preparation of *Helicobacter pylori*.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Helicobacter pylori OMP (BDI176) is recommended for detection of outer membrane protein (OMP) and heat shock protein (HSP) of *Helicobacter pylori* origin 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); non cross-reactive with *C. jejuni*, *E. coli* (mix), *Shigella* (mix), *P. aeruginosa*, *Yersinia* and *Citrobacter* in ELISA.

Molecular Weight of *Helicobacter pylori* OMP precursor: 140 kDa.

Molecular Weight of mature *Helicobacter pylori* OMP: 95 kDa.

Molecular Weight of *Helicobacter pylori* OMP cytotoxin fragments: 58/37 kDa.

Molecular Weight of *Helicobacter pylori* OMP outermembrane antigen: 19 kDa.

SELECT PRODUCT CITATIONS

1. Sharma, A., Kamran, M., Verma, V., Dasgupta, S. and Dhar, S.K. 2014. Intracellular locations of replication proteins and the origin of replication during chromosome duplication in the slowly growing human pathogen *Helicobacter pylori*. *J. Bacteriol.* 196: 999-1011.
2. Kumar, N., Shariq, M., Kumar, A., Kumari, R., Subbarao, N., Tyagi, R.K. and Mukhopadhyay, G. 2017. Analyzing the role of CagV, a VirB8 homolog of the type IV secretion system of *Helicobacter pylori*. *FEBS Open Bio* 7: 915-933.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.