

# Helicobacter Pylori Antigen

**Cat. No.** HEL-240    **Lot. No.** (See product label)

## SPECIFICATION

### Product Overview

Helicobacter pylori antigen is a bacterial extract which has been partially purified by detergent extraction and centrifugation. It has been manufactured for use in immunoassay development and other research applications.

### Background

Helicobacter pylori is a Gram-negative microaerophilic bacterium that specifically colonizes the human stomach and exhibits high genetic diversity. It is a helix-shaped (curved rod) Gram-negative bacterium (~3µm in length, ~0.5µm diameter) with four to six flagella at the same location. The flagella are used to burrow into the mucus lining of the stomach to reach the lower acidity environment of the epithelial cells underneath. H. pylori also produces large amounts of urease as one of its adaptation methods to overcome stomach acidity, neutralizing gastric acidity by producing ammonium from urea. H. pylori shows large strain diversity, and hundreds of genomes have been completely sequenced, typically in the region of 1.7Mbp, containing ~1,576 genes. Several strains have a ~40kbp Cag pathogenicity island (a common gene sequence associated with pathogenesis) that contains over 40 genes which is usually absent from individuals who are carriers of H. pylori, but remain asymptomatic. It is believed that this island was acquired by horizontal transfer from another bacterial species (Brown, 2000). Long-term H. pylori infection causes diseases including chronic active gastritis, peptic ulcers, B cell lymphoma of mucosa-associated lymphoid tissue, and adenocarcinoma (Gravina et al., 2018). H. pylori is a major source of worldwide cancer mortality by several mechanisms including enhanced production of free radicals near H. pylori, an increased rate of host cell mutation and enhancement of the transformed host cell phenotype by means of alterations in cell proteins, such as adhesion proteins (Gobert & Wilson, 2017).

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|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Applications</b>     | For immunoassay development or other applications                                                                                                                                                                                                |
| <b>Notes</b>            | This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations. |
| <b>ClassID 1</b>        | Infectious Disease                                                                                                                                                                                                                               |
| <b>GENE INFORMATION</b> |                                                                                                                                                                                                                                                  |
| <b>Synonyms</b>         | Helicobacter Pylori                                                                                                                                                                                                                              |

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