

# Meet the Marker: Helicobacter Pylori

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For centuries, the belief that stress was the sole cause of stomach ulcers concealed a culprit lurking in the stomachs of millions of sufferers.<sup>1</sup> It wasn't until 1982 that Australian physicians and researchers Barry Marshall and Robin Warren identified the tiny bacterial pathogen causing so many people pain.<sup>1</sup> Their work revealed that gastritis and painful peptic ulcer disease were the result of infection by a curvy little bacillus named *Helicobacter pylori* (*H. pylori*).<sup>1</sup> This pivotal discovery would earn them the 2005 Nobel Prize in medicine.<sup>1,8</sup>

*H. pylori* is a helical gram-negative bacteria species with the unique ability to thrive in the acidic environment of the stomach.<sup>1,3</sup> Its spiral shape and flagella tails enable it to penetrate the protective mucous layer lining the stomach, where it attaches to the epithelial cells.<sup>2,3</sup> This bacterial colonization can induce inflammation in the stomach lining, triggering the immune system's response, often causing chronic gastritis that may lead to painful ulcers in the stomach or duodenum.<sup>1</sup>

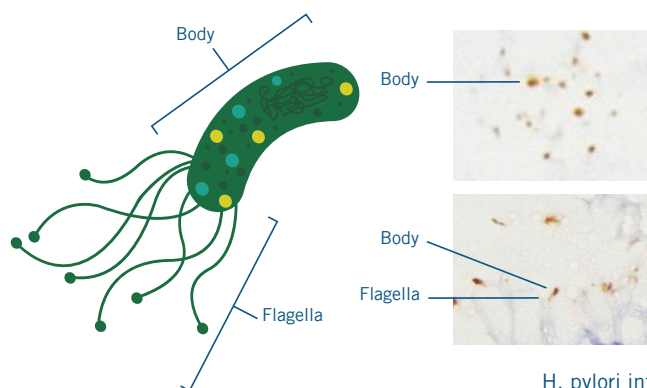
In fact, following its discovery, it was revealed that *H. pylori* is responsible for over 90% of duodenal ulcers and up to 80% of gastric ulcers.<sup>1</sup> It has also been implicated in other metabolic dysfunctions and nutrient imbalances.<sup>6,7</sup> If left untreated, the infection has the potential to cause long-term damage and greatly increases the risk of developing a range of deadly stomach cancers.<sup>3,4</sup>

Early detection is important for those at increased risk of developing *H. pylori*-associated conditions, such as individuals with a family history of gastric cancer.<sup>3</sup> *H. pylori* infection can be tested for by a variety of different methods, including urease test, urea breath test, bacterial culturing, polymerase chain reaction (PCR), hematoxylin & eosin (H&E) staining, modified Giemsa staining, and immunohistochemistry (IHC).<sup>2,4</sup>

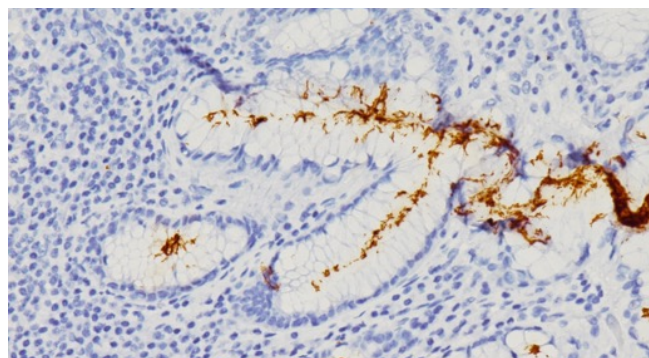
However, the accuracy and sensitivity of these detection methods are dependent on several factors, such as the degree of infection, previous use of medications, and the extent of inflammatory changes in the tissue.<sup>2</sup> *H. pylori* can also exhibit atypical morphologies which interferes with accurate diagnosis via stains such as H&E or Giemsa.<sup>2,4</sup>

Among these detection methods, IHC stands out as a powerful diagnostic tool. Since it targets and highlights specific proteins in the bacteria itself, studies have found it to be more sensitive than H&E, Giemsa, with similar detection rates to qRT-PCR.<sup>2,4</sup>

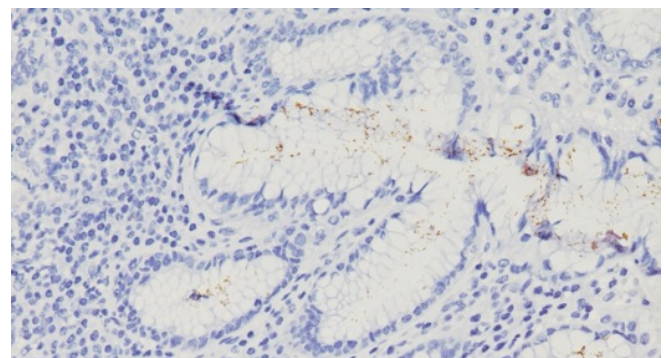
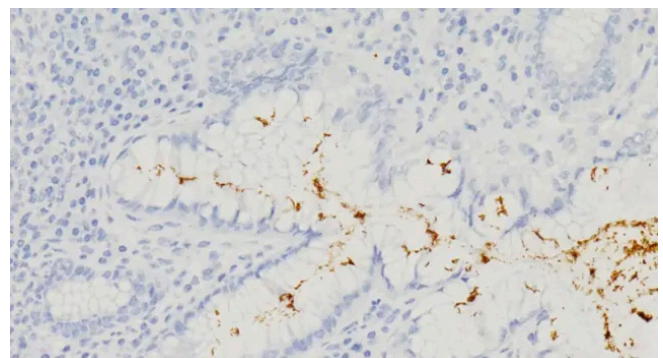
## Helicobacter Pylori Illustration / Photomicrographs



*H. pylori* infected stomach tissue (HPY19) stained with *H. pylori* [EPR10353] antibody



*H. pylori* infected stomach tissue stained with Clone EPR10353 (whole organism staining - body and flagella).



Biocare Clone BC7 (partial organism staining - body).

To learn more about the markers listed above, please visit our website at [biocare.net](http://biocare.net) or call 1-800-799-9499, option #3

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