

BIOLOGY IN ENGLISH

Bacterium is a major cause of gastric ulcers

In 1974, Dr. **Barry Marshall**, a physician trainee, pursued a research project with Dr. **Robin Warren**, a pathologist at the Royal Perth Hospital in Australia. Warren had observed the common presence of an unusual spiral-shaped bacterium, *Helicobacter pylori*, in the biopsy tissue of many ulcer patients (**figure 1**).

In 1983, Marshall proposed at an international conference that the cause of ulcers was not stress, diet, or excess stomach acid, as had been previously thought, but a bacterial infection caused by *H. pylori*. Initially, the idea was met with scorn and ridicule. How could any bacterium survive the harsh, acidic environment of the stomach? Marshall and Warren soon found their novel theory in danger, because they were unable to culture the strange spiral bacteria in laboratory animals. Finally, in

desperation, Marshall decided to use himself as a human guinea pig and quaffed a tube of *H. pylori*. About one week later, he began vomiting and suffering the painful symptoms of gastritis (stomach inflammation). Medical tests confirmed this condition, and revealed that his stomach was teeming with the bizarre bacteria. He treated himself by taking a combination of antibiotics and an acid-blocking drug to ease the symptoms. But more importantly, he had made his point. He challenged other researchers to prove his theory wrong, but before long, many of these very studies indeed supported his theory.

Instead of simply treating the symptoms of an ulcer, doctors can now treat the cause of the condition with a round of antibiotics, coupled with an acid-reducing drug to allow the stomach lining to heal. For their innovative thinking in making the connection between *H. pylori* and ulcers, Marshall and Warren were awarded the 2005 Nobel Prize in Physiology and Medicine.

ANSWER

Why did most scientists not agree with the idea that a bacterium could live in the stomach?

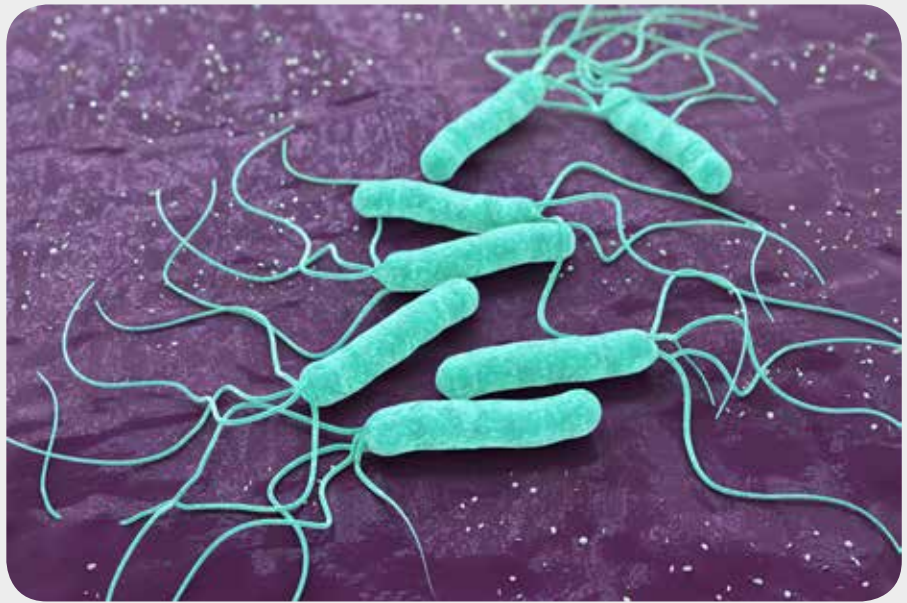


Figure 1 *Helicobacter pylori* under electronic microscope.