

## Helicobacter pylori urease for diagnosis of Helicobacter pylori infection: A mini review

Type: Review

Abstract:

The stomach contents contain of both acid and proteolytic enzymes. How the stomach digests food without damaging itself remained a topic of investigation for decades. One candidate was gastric urease, which neutralized acid by producing ammonia from urea diffusing from the blood and potentially could protect the stomach. Discovery that gastric urease was not mammalian resulted in a research hiatus until discovery that gastric urease was produced by *Helicobacter pylori* which caused gastritis, peptic ulcer and gastric cancer. Gastric urease allows the organism to colonize the acidic stomach and serves as a biomarker for the presence of *H. pylori*. Important clinical tests for *H. pylori*, the rapid urease test and urea breath test, are based on gastric urease. Rapid urease tests use gastric biopsies or mucus placed in a device containing urea and an indicator of pH change, typically phenol red. Urea breath tests measure the change in isotope enrichment of  $^{13}\text{C}$ - or  $^{14}\text{CO}_2$  in breath following oral administration of labeled urea. The urea breath test is non-invasive, convenient and accurate and the most widely used test for non-invasive test for detection of active *H. pylori* infection and for confirmation of cure after eradication therapy.

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