Lab Dept:	**Microbiology/Virology**
Test Name:	**HELICOBACTER PYLORI UREASE TEST**

General Information

Lab Order Codes:	HPU
Synonyms:	H. pylori Urease test; Urease test for *Helicobacter pylori*; CLOtest® for *Helicobacter pylori*
CPT Codes:	87081 - Culture, presumptive, pathogenic organisms, screening only
Test Includes:	Screening for the presence of the urease enzyme of *Helicobacter pylori* in the gastric mucosal biopsies.

Logistics

Lab Testing Sections:	Microbiology
Phone Numbers:	MIN Lab: 612-813-6280
	STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 day
Special Instructions:	**Specimen site** and **date/time of collection** are required for specimen processing. See Patient preparation.

Specimen

Specimen Type:	Tissue, gastic mucosal biopsy
Container:	CLOtest® urease kit (available in Microbiology)
Draw Volume:	1 - 3 mm

Collection:	**CLOtest® Procedure:** **1.** Warm the CLOtest® before the endoscopy. **2.** Check gel to make sure that the well is full and the color is yellow. Do not use if these conditions do not exist. **3.** Peal back the label from the plastic slide so that you can see the gel. Do not remove the label. **4.** Collect specimen with biopsy forceps, approximately 1-3 mm. **5.** With a sterile needle, take biopsy sample from the biopsy forceps and push it into the yellow gel. Make sure that the tissue is buried. **6.** Reseal the CLOtest® by pressing the label back on the plastic slide. **7.** Write the name of the patient and collect date/time on the label. **8.** Transport to the laboratory immediately.
Patient Preparation:	Patient should not have taken antibiotics or bismuth salts for at least 3 weeks prior to endoscopy.
Transport/Storage:	Transport to the Microbiology Laboratory as soon as possible at room temperature.
Sample Rejection:	Improperly labeled specimen; insufficient volume; external contamination. If an unacceptable specimen is received, the physician or nursing station will be notified and another specimen will be requested before the specimen is discarded.

Interpretive

Reference Range:	CLOtest® negative for the urease enzyme of *Helicobacter pylori.*
Critical Values:	N/A
Limitations:	False negative results may occur when low numbers of H. pylori are present or the organism has patchy distribution. Test will be less sensitive if patient has recently taken antibiotics or bismuth.
Methodology:	Urease test
Additional information:	*H. pylori* has been shown to cause active chronic gastritis and has been implicated as a primary etiologic factor in duodenal ulcer disease, gastric ulcer and nonulcer dyspepsia. By causing inflammation, *H. pylori* may weaken the mucosal defenses and allow acid and pepsin to disrupt the epithelium. *H. pylori* produce large amounts of urease enzymes. Although urease primarily allows *H. pylori* to utilize urea as a nitrogen source, the breakdown of urea also produces high local concentrations of ammonia, which enables the organism to tolerate low pH. Tests for gastric urease are specific for *H. pylori* because mammalian cells do not produce urease and, except for *H. pylori*, the stomach is usually sterile.

References:

Cook, J.H., and M. Pezzlo. 1992. Specimen receipt and accessioning. Section 1. Aerobic bacteriology, 1.2.1-4. In H.D. Isenberg (ed) Clinical Microbiology Procedures Handbook. American Society for Microbiology, Washington, D.C.

Miller, J. Michael, A Guide To Specimen Management in Clinical Microbiology, 1999, American Society for Microbiology, Washington, D.C.

Miller, J. Michael, and H.T. Holmes. 1999. Specimen Collection, Transport, and Storage In P.R. Murray et al., (ed.), Manual of Clinical Microbiology, 7th edition, American Society for Microbiology, Washington, D.C., pg 33-104

Updates: 10/22/2015: Updated Transport and Specimen Rejection criteria.