Jant Accutest Rapid Urease Test (*H. pylori* detection)

Product Insert

NOTE: for *in-vitro* diagnostic use only

Jant Accutest Rapid Urease Test is CLIA WAIVED

Facilities performing testing must have a CLIA Certificate of Waiver. 42 USA 263a(c)(2). Any laboratory eligible for a Certificate of Waiver must follow the test system instructions, including use with only the waived specimen type, instructions for limitations/intended use, and performance of QC testing as a failure-alert mechanism. (42 CFR 493.15(e).) Any modification to the test or the manufacturer's instructions will result in the test being classified as highly complex.

Treat all biopsy specimens as if capable of transmitting disease. Caution should be used in handling and disposing of these specimens at bio-safety level 2 as recommended in the Centers for Disease Control/National Institute of Health Manual, Bio-safety in Microbiological and Biomedical Laboratories, 1984. Your laboratory safety procedures should also be followed as well as any other local or state health recommendations.

INTENDED USE:
Jant Accutest RUT is intended for the qualitative detection of the urease enzyme in gastric mucosal biopsy specimens for the presumptive determination of *Helicobacter pylori* in symptomatic adult patients.

SUMMARY / BIOLOGICAL PRINCIPLE:
Helicobacter 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 non-ulcer dyspepsia[1]. By causing chronic inflammation *Helicobacter pylori* may weaken the mucosal defenses and allow acid and pepsin to disrupt the epithelium. *H. pylori* produces large amounts of urease enzyme[2]. 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 enable the organism to tolerate low pH (see reaction below).

$$(NH_2)CO + 2(H_2O) + H^+ \xrightarrow{\text{urease enzyme}} 2(NH_4^+) + HCO_3^-$$

Although *H. pylori* can be detected with histology or culture of gastric tissue, simple tests for the presence of urease enable more rapid and convenient diagnosis. Tests for gastric urease are specific for *H. pylori* because mammalian cells do not produce urease and very few micro-organisms survive in the stomach, except for *H. pylori.*

WARNING: POTENTIAL BIOHAZARDOUS MATERIAL
Note: for *in-vitro* diagnostic use only.
Treat all biopsy specimens as if capable of transmitting disease. Caution should be used in handling and disposing of these specimens at bio-safety level 2 as recommended in the Centers for Disease Control/National Institute of Health Manual, Bio-safety in Microbiological and Biomedical Laboratories, 1984. Your laboratory safety procedures should also be followed as well as any other local or state health recommendations.

STORAGE:
Jant Accutest RUT should be stored at room temperature away from direct light. Jant Accutest RUT has a shelf life of 36 months. Before use, each Jant Accutest RUT slide should be inspected to make sure the test surface is yellow. If the test surface is red or magenta the slide should not be used.

SPECIMEN COLLECTION AND HANDLING:
Preparation of the patient: Patients should not have taken antibiotics or bismuth salts for at least three weeks prior to endoscopy. Suppression of *H. pylori by* these agents makes the organism difficult to detect by any means, and re-growth of *H. pylori* may be patchy, leading to false negative results in the first few weeks after treatment.
Taking and Inserting the Biopsy:
1. A biopsy specimen for Jant Accutest RUT may be taken as soon as the endoscopist has examined the stomach. The usual area to biopsy is the sump of the antrum, along the greater curve.
2. Biopsy an area of normal-looking tissue rather than an area affected by erosions or ulceration. This is because *H. pylori may* be present in smaller numbers if the epithelium is eroded, or the mucous layer is denuded. The standard biopsy forceps will provide a specimen of sufficient size (2 - 3 mm diameter).
3. If the biopsy specimen appears to be very small, it may be worthwhile taking a second biopsy and inserting both specimens into the Jant Accutest RUT. Be careful not to contaminate the second specimen with blood from the first biopsy site.

Jant Accutest RUT PROCEDURE:
1. Peel back the label of the Jant Accutest RUT thus exposing the reactive yellow pad.
2. Immediately after peeling back the label, using a sterile blunt instrument, remove the specimen from the biopsy forceps and place it onto the reactive yellow pad. Make certain that the tissue is positioned to have maximum contact with the reactive pad.
3. Re-seal the test. Press the label over the reactive pad lightly with your finger to squeeze the tissue contents out of the specimens. On the label, record the name of the patient, the date, and the time the specimen was inserted.
4. Accurate resealing is important to prevent the biopsy specimens from drying up.

RESULTS:
Reading the Jant Accutest RUT
1. We recommend examining the Jant Accutest RUT at intervals of 5 minutes, 30 minutes and one hour. If any of those intervals or any time in between reveal a positive result the test is positive. Usually, the first attempt to read the Jant Accutest RUT is made after the endoscopy report has been completed. This allows the endoscopist to objectively report the endoscopic findings before being aware of the presence of *H. pylori.*
2. If *H. pylori* are present in the tissue, an expanding red color zone will be noted around the biopsy specimen, or the Jant Accutest RUT will gradually change to a deep orange, then red color. A red reactive pad anytime within an hour is a positive reaction.
3. A negative result is when the Jant Accutest RUT reactive pad is still yellow 1 hour after insertion of the specimen.

MATERIALS PROVIDED:
Jant Accutest RUT is packaged in boxes of 50 test slides with an Instructions for Use sheet and includes a positive liquid control.

MATERIALS REQUIRED BUT NOT INCLUDED WITH THE TEST:
Not supplied with the Jant Accutest RUT are the biopsy forceps for collecting the specimens or the blunt instrument for transferring the specimen to the test.

QUALITY CONTROL:
We recommend a positive control be performed when opening a new test kit. The test kit size must not exceed 50. Jant Accutest RUT control is a liquid positive control. Additionally, if the Jant Accutest RUT test is negative after 1 hour and there is a question if the test has functioned properly, a quality control test using a positive control is recommended.

POSITIVE LIQUID CONTROL:
2. Place 1 small drop of control solution directly on the testing surface. The control solution gives a positive result.
3. Reseal the Jant Accutest RUT.
4. Observe the ring for a positive color change to magenta. The color change should occur within 30 seconds but may take up to 1 hour. **Please Note**: In some cases, you may notice the center of the test changing to magenta before the outer ring. This is NORMAL and caused by the introduction of liquid onto the filter paper. Any change in color from yellow to magenta on any part of the test surface should be considered POSITIVE.
5. If after 1 hour there is no change in the color, please contact Jant Pharmacal Corporation Customer Service at: 800-676-5565.

LIMITATIONS:
False negative Jant Accutest RUT results may occur when very low numbers *of H. pylori* are present or the bacterium has a patchy distribution. For example, in 1-5% of patients the bacterium is present in the body of the stomach but not in the antrum, or vice versa. In patients with widespread intestinal metaplasia, an area of intestinal epithelium may be biopsied. As *H. pylori* does not colonize intestinal mucosa, a false negative Jant Accutest RUT can result. To reduce the occurrence of false negatives, two Jant Accutest RUT tests should be performed, one with a sample from the antrum and one from the body of the stomach.
All tests for *H. pylori,* including Jant Accutest RUT, will be less sensitive if the patient has recently taken antibiotics or bismuth. Re-growth of *H. pylori* may be patchy after suppression with antibiotic. Again, an extra biopsy may be taken for Jant Accutest RUT to avoid a false negative reading.
False positive Jant Accutest RUT results are rare. Theoretically, false positive Jant Accutest RUT results could occur in patients who have achlorhydria (for example: patients with pernicious anemia, previous gastric surgery, or who have recently taken antacid or large doses of H2 receptor antagonists).
When acid is absent, commensal organisms such as *Proteus spp.* may grow in the stomach and produce urease. False positive reactions due to bacteria other than *H. pylori* will not usually react before 3 hours because these bacteria produce much less urease than *H. pylori.*

If there are factors which might adversely affect the performance of Jant Accutest RUT, the physician is advised to consider other diagnostic measures, such as culture with Gram stain and/or histology, in order to confirm or disprove a diagnosis of *H. pylori* infection.

USERS WITH COLOR BLINDNESS:
Users with color blindness should seek assistance in interpreting the results of this test.

PERFORMANCE CHARACTERISTICS:
During a clinical study conducted in 2006 comparing samples of Jant Accutest RUT with a predicate device, Jant Accutest RUT was shown to be 100% specific and sensitive for H-Pylori in relation to equivalency.

	Histology	
Jant Accutest RUT	*Positive*	*Negative*
Positive	20	0
Negative	0	80

Sensitivity = 100% (95% Confidence Interval [97.5% - 100%])
Specificity = 100% (95% Confidence Interval [97.5% - 100%])

WAIVER STUDIES:
During 2008 and 2009 a study was conducted to demonstrate an insignificant risk of an erroneous result and support the issuance of a CLIA waiver by the FDA for the product Jant Accutest RUT. In order to effectively evaluate this test a total of 300 actual patient biopsies and 140 contrived biopsies were tested at 3 separate sites with no less than 3 users per site. The users were blinded as to the results and asked to perform the test using only the provided quick reference instructions. For clinical biopsy specimens, the results showed a positive agreement of 91.2% and a negative agreement of 98.7% compared to histology. For contrived specimens, the results showed positive agreement of 97.2% and a negative agreement of 95.5% compared to expected results.

FLEX STUDIES:
Samples of Jant Accutest RUT have been stored for a minimum of 3 years at to storage conditions in Real Time: -20 degrees Celsius and 30 degrees Celsius with a 65% relative humidity. These samples were tested monthly and compared to duplicate samples stored in a humidity controlled and temperature-controlled environment. Samples were given a pass rating if the results corresponded with the intended use. The prepared controls were a solution of urease from Jack bean in distilled H2O. In all cases the tests performed as intended.

PERFORMANCE NOT MEETING SPECIFICATION:
If the Jant Accutest RUT test does not perform as outlined in these instructions, please contact Jant Pharmacal Corporation Customer Service at: 800-676-5565.

BIBLIOGRAPHY:

1. Marshall B J, McGechie D B, Rogers P A R, Glancy R G. *Pyloric Campylobacter* infection and gastroduodenal disease. Med J Aust 1985; 149:439-44.
2. Mobley H L, Cortesa M J, Rosenthal L E, Jones B D. Characterization of urease from *Campylobacter pylori.* J Clin Microbiol 1988; 25(5):831-836.
3. Marshall B J, Warren J R, Francis G J, Leighton S R, Goodwin C S, Bilncow E. Rapid urease test in the management of *Campylobacter* pyloridis-associated gastritis. Am J Gastroenterol 1987-1 82(3):200-210.
4. Dye K D, Marshall B J, Frierson H F, Barrett L J, Guerrant R L, McCallum R W. Is CLOtest alone adequate to diagnose *Campylobacter pylori?* Am J Gastroenterol 1988-1 83:1032 (abstract).
5. Schnell G A, Schubert T T, Barnes W G, Rupani M K. Comparison of urease, H&E, and culture tests for *Campylobacter* pylori. Gastroenterology 1988; 94(5)-.A410 (abstract).

REFERENCES RELATING TO THE ASSOCIATION OF *HELICOBACTER PYLORI* WITH UPPER GASTROINTESTINAL DISORDERS, ESPECIALLY PEPTIC ULCER AND GASTRITIS:

Alper J et al. A bacterium that may cause ulcers. Chemical Week 1985; Jan 23-.17-18.
Axon A T. *Campylobacter pyloridis:* what role in gastritis and peptic ulcer? Br Med J 1986 1- 293:772.
Barthel J S et al. Gastritis and *Campylobacter pylori* in healthy asymptomatic volunteers. Arch Intern Med 1988 1-148:1149.
Bartlett J G. *Campylobacter pylori-* Fact or Fancy? Gastroenterology 1988;94(l):229-232.
Blaser M J. Gastric *Campylobacter-like* organisms, gastritis and peptic ulcer disease. Gastroenterology 1987;93:371-383.
Borody T J. *Campylobacter,* gastritis and ulceration. View Point in Ulcer Disease, No 1 ADIS Press, Sydney 1987.
Bulletin number CDI 86/25, Communicable Diseases Branch, Department of Health, ACT, 15 Dec, 1986, 4-7.
Dooley C P, and Cohen H. The clinical significance of *Campylobacter pylori.* Ann Intern Med 19881- 108(l)-.70-79.
Jones D M et al. Antibody to the gastric *Campylobacter-like* organism *(C.pyloridis).* Clinical correlations and distribution normal population. J Med Microbiol 1986 1- 22:57-62.
Kaldor J et al. Immunoblot confirmation of immune response to *C.pylori* in patients with duodenal ulcers. Med J Aust 1986; 145-. 133-135.
Marshall B J, Warren J R. Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. Lancet 1984; 1-.1311-1315.
Marshall B J. *Campylobacter pyloridis* and Gastritis. J Infect Dis 1986-1 153(4)-.650-657.

Abstracts of papers Gastroenterology 1988; 94(5): Part 2, supporting the association of *C. pylori* with upper gastrointestinal disorders:

Attar B et al. The incidence of *Campylobacter pylori* infection among patients of GI-endoscopy unit in a metropolitan hospital. A14.
Barthel J S et al. The distribution of *Campylobacter pylori (Cp)* and gastric mucosal histopathology in symptomatic volunteers. A25.
de Korwin J D et al. *Campylobacter pylori* (Cp) is associated with intense chronic gastritis in the antrum as in the fundum. A93.
Malfertheiner P et al. Bismuth subsalicylate (B.S.) treatment in *C.pylori* related chronic erosive gastritis. A279.
Martin D F et al. Rule out peptic ulcer disease with a question and a blood test. A285.
Raedsch R et al. Elevated concenfrations of not amidated and secondary bile acids and of lysolecithin in gastric juice at presence of *Campylobacter pylori.* A364.
Tolia V. Role of *Campylobacter pylori* (Cp) in children with recurrent abdominal pain (RAP). A463.

GENERAL REFERENCES:

Resort, Colorado, July 28-31, 1988, Director Peterson, W L. University of Texas Health Sciences Centre, Dallas.
See Abstracts of Papers relating to *Campylobacter pylori.* Gastroenterology 1988; 94(5): Part 2.
Articles on Ulcer Disease for the General Practitioner by various authors. Australia Patient Management 1987-11(4)-.23-77.
Ainsley C C et al. Outpatient endoscopic survey of smoking and peptic ulcer. Gut 1986; (6)-.648-51.
Blaser M J. Type B gastritis, aging and *Campylobacter pylori.* Arch Intern Med 1988-1 148:1021-1022.
Bonnevie 0. Changing demographics of peptic ulcer disease. Digestive Diseases and Sciences 1985-1 30(11) Suppl-.85-145.
Garau G et al. Epidemiological findings on gastric and duodenal ulcer in the pre- and post-cimetidine era. A study of 2,119 cases. Minerva Dietol Gastroenterol 1987: 33(3):209-216.
Hugh T. 70,000 with peptic ulcers. Aust Dr 1985, 23 Sept:13.
Jones R. Upper gastrointestinal endoscopy - a view from general practice. Journal of the Royal College of General Practitioners 1986-1 Jan:7-8.
Langman M J S. The changing face of peptic ulceration. Scand J Gastroenterol 1987; Suppl 136:37-40.
Langman M J S. The Epidemiology of Chronic Digestive Disease. Edward Arnold, London, 1979.
Price A B et al. *Campylobacter pyloridis* in peptic ulcer disease Gut 1985; 26-.1183-1188.
The Bulletin. The dollar scope. June 21, 1988, 56.

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