Rapid Response™

***H.pylori* Antigen Test Cassette**
(Feces)

REF HPY-9C20, HPY-9C25 Product Insert

A rapid test for the qualitative detection of *Helicobacter pylori (H.pylori)* antigens in human feces.

For professional *in vitro* diagnostic use only.

Intended Use

The Rapid Response™ *H.pylori* Antigen Test Cassette is a rapid chromatographic immunoassay for the qualitative detection of *H.pylori* antigens in human feces specimens to aid in the diagnosis of *H.pylori* infection.

Summary

H.pylori is a small, spiral-shaped bacterium that lives in the surface of the stomach and duodenum. It is implicated in the etiology of a variety of gastrointestinal diseases, including duodenal and gastric ulcer, non-ulcer dyspepsia and active and chronic gastritis.[1,2] Both invasive and non-invasive methods are used to diagnose *H.pylori* infection in patients with symptoms of gastrointestinal disease. Specimen-dependent and costly invasive diagnostic methods include gastric or duodenal biopsy followed by urease testing (presumptive), culture, and/or histologic staining.[3] A very common approach to the diagnosis of *H.pylori* infection is the serological identification of specific antibodies in infected patients. The main limitation of serology test is the inability to distinguish current and past infections. Antibody may be present in the patient's serum long after eradication of the organisms.[4] HpSA (*H.pylori* Stool Antigen) testing is gaining popularity for diagnosis of *H.pylori* infection and also for monitoring the efficacy of the treatment of *H.pylori* infection. Studies have found that more than 90% of patients with duodenal ulcer and 80% of patients with gastric ulcer are infected with *H.pylori*.[5]
The Rapid Response™ *H.pylori* Antigen Test Cassette is a rapid chromatographic immunoassay for the qualitative detection of *H.pylori* antigens in human feces specimens, providing results in 10 minutes. The test utilizes antibodies specific for *H.pylori* antigens to selectively detect *H.pylori* antigens in human feces specimens.

Principle

The Rapid Response™ *H.pylori* Antigen Test Cassette is a qualitative, lateral flow immunoassay for the detection of *H.pylori* antigens in human feces specimens. In this test, the membrane is pre-coated with anti-*H.pylori* antibodies on the test line region of the test. During testing, the specimen reacts with the particle coated with anti-*H.pylori* antibodies. The mixture migrates upward on the membrane by capillary action to react with anti-*H.pylori* antibodies on the membrane and generate a colored line. The presence of this colored line in the test region indicates a positive result, while its absence indicates a negative result. To serve as a procedural control, a colored line will always appear in the control line region indicating that proper volume of specimen has been added and membrane wicking has occurred.

Reagents

The test cassette contains monoclonal anti-*H.pylori* antibodies coated particles and monoclonal anti-*H.pylori* antibodies coated on the membrane.

Precautions

- For professional *in vitro* diagnostic use only. Do not use after the expiration date.
- The test should remain in the sealed pouch until use.
- Do not eat, drink, or smoke in the area where the specimens or kits are handled.
- Handle all specimens as if they contain infectious agents. Observe established precautions against microbiological hazards throughout all procedures and follow the standard procedures for proper disposal of specimens.
- Wear protective clothing such as laboratory coats, disposable gloves, and eye protection when specimens are assayed.
- The used test should be discarded according to local regulations.
- Humidity and temperature can adversely affect results.

Materials

Materials provided

- Test cassettes
- Product insert
- Specimen collection tubes with extraction buffer

Materials required but not provided

- Specimen collection containers
- Centrifuge
- Droppers
- Timer
- Pipette and disposable tips (optional)

Storage and Stability

- The kit can be stored at room temperature or refrigerated 35.6-86°F (2-30°C). The test cassette is stable through the expiration date printed on the sealed pouch.
- The test cassette must remain in the sealed pouch until use.
- **Do not freeze.**
- Do not use beyond the expiration date.

Specimen Collection and Preparation

- The feces specimen must be collected in clean, dry, waterproof container containing no detergents, preservatives, or transport media.
- Bring the necessary reagents to room temperature before use.
- If specimens are to be shipped, they should be packed in compliance with federal regulations covering the transportation of etiologic agents.

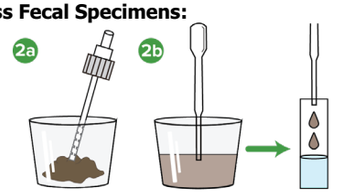
Test Procedure

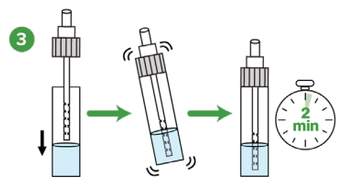
Allow the test, specimen, buffer and/or controls to reach room temperature (59-86°F; 15-30°C) prior to testing.

To Collect Fecal Specimens:

1. Collect sufficient quantity of feces (1-2 mL or 1-2 g) in a clean, dry specimen collection container to obtain maximum antigens (if present). Best results will be obtained if the assay is performed within 6 hours after collection. Specimen collected may be stored for 3 days at 35.6-46°F (2-8°C) if not tested within 6 hours. For long term storage, specimens should be kept below -4°F (-20°C).

To Process Fecal Specimens:



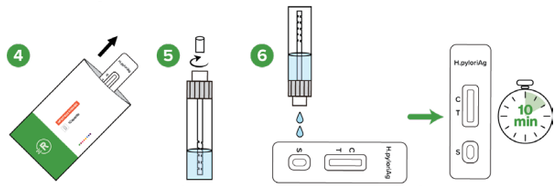


2a. **For Solid Specimens:**
Unscrew the cap of the specimen collection tube, then randomly stab the specimen collection applicator into the fecal specimen in at least 3 different sites to collect approximately 50 mg of feces (equivalent to 1/4 of a pea). Do not scoop the fecal specimen.

2b. **For Liquid Specimens:**
Hold the dropper vertically, aspirate fecal specimens, and then transfer approximately 80 µL into the specimen collection tube containing the extraction buffer.

3. Tighten the cap onto the specimen collection tube, then shake the specimen collection tube vigorously to mix the specimen and the extraction buffer. Leave the tube alone for 2 minutes.

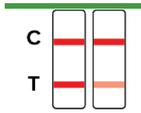
Test Sample Collection:



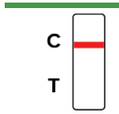
4. Bring the pouch to room temperature before opening it. Remove the test cassette from the foil pouch and use it within one hour. Best results will be obtained if the test is performed immediately after opening the foil pouch.
5. Hold the specimen collection tube upright and open the cap of the specimen collection tube. Invert the specimen collection tube and transfer 2 full drops of the extracted specimen (approximately 80 µL) to the specimen well (S) of the test cassette, then start the timer. Avoid trapping air bubbles in the specimen well (S).
6. Read results at 10 minutes after dispensing the specimen. Do not read results after 20 minutes.

Note: If the specimen does not migrate (presence of particles), centrifuge the extracted specimens contained in the extraction buffer vial. Collect 80 µL of supernatant, dispense into the specimen well (S) of a new test cassette and start afresh following the instructions mentioned above.

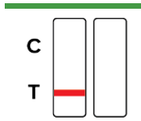
Results Interpretation



POSITIVE:* Two colored lines appear. One colored line should be in the control line region (C) and another colored line should be in the test line region (T).
***NOTE:** The intensity of the color in the test line region (T) will vary depending on the concentration of *H.pylori* antigen present in the specimen. Therefore, any shade of color in the test line region (T) should be considered positive.



NEGATIVE: One colored line appears in the control line region (C). No line appears in the test line region (T).



INVALID: Control line fails to appear. Insufficient specimen volume or incorrect procedural techniques are the most likely reasons for control line failure. Review the procedure and repeat the test with a new test. If the problem persists, discontinue using the test kit immediately and contact your local distributor.

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Quality Control

Internal procedural controls are included in the test. A colored line appearing in the control region (C) is an internal valid procedural control. It confirms sufficient specimen volume and correct procedural technique.
Control standards are not supplied with this kit; however, it is recommended that positive and negative controls be tested as a good laboratory practice to confirm the test procedure and to verify proper test performance.

Limitations

1. The Rapid Response™ *H.pylori* Antigen Test Cassette is for *in vitro* diagnostic use only. The test should be used for the detection of *H.pylori* antigens in fecal specimens only. Neither the quantitative value nor the rate of increase in *H.pylori* antigens concentration can be determined by this qualitative test.
2. The Rapid Response™ *H.pylori* Antigen Test Cassette will only indicate the presence of *H.pylori* in the specimen and should not be used as the sole criteria for *H.pylori* to be etiological agent for peptic or duodenal ulcer.
3. As with all diagnostic tests, all results must be interpreted together with other clinical information available to the physician.
4. If the test result is negative and clinical symptoms persist, additional testing using other clinical methods is recommended. A negative result does not at any time preclude the possibility of *H.pylori* infection.
5. Following certain antibiotic treatments, the concentration of *H.pylori* antigens may decrease to the concentration below the minimum detection level of the test. Therefore, diagnosis should be made with caution during antibiotic treatment.

Performance Characteristics

Sensitivity and Specificity

The Rapid Response™ *H.pylori* Antigen Test Cassette has been evaluated with specimens obtained from a population of symptomatic and asymptomatic individuals. The result shows that the sensitivity of the Rapid Response™ *H.pylori* Antigen Test Cassette is 98.8% and the specificity is 98.4% relative to Endoscope-based methods.

Method		Endoscope-based method		Total Results
Rapid Response™ *H.pylori* Antigen Test Cassette	Results	Positive	Negative	
	Positive	168	3	171
	Negative	2	189	191
Total Results		170	192	362

Relative Sensitivity: 98.8% (95%CI*: 95.8%-99.9%)
Relative Specificity: 98.4% (95%CI*: 95.5%-99.7%)
Overall Accuracy: 98.6% (95%CI*: 96.8%-99.5%)
*Confidence Interval

Precision

Intra-Assay

Within-run precision has been determined by using 15 replicates of four specimens: negative, low titer positive, middle titer positive and high titer positive specimens. The specimens were correctly identified >99% of the time.

Inter-Assay

Between-run precision has been determined by 15 independent assays on the same four specimens: negative, low titer positive, middle titer positive and high titer positive specimens. Three different lots of the Rapid Response™ *H.pylori* Antigen Test Cassette have been tested using these specimens. The specimens were correctly identified >99% of the time.

Cross-reactivity

Cross reactivity with the following organisms has been studied at 1.0E+09 organisms/ml. The following organisms were found negative when tested with the Rapid Response™ *H.pylori* Antigen Test Cassette:

Acinetobacter calcoaceticus	Hemophilus influenza
Acinetobacter spp	Klebsiella pneumonia
Branhamella catarrhalis	Neisseria gonorrhea
Candida albicans	Neisseria meningitides
Chlamydia trachomatis	Proteus mirabilis
Enterococcus faecium	Proteus vulgaris
E.coli	Pseudomonas aeruginosa
Enterococcus faecalis	Rotavirus
Gardnerella vaginalis	Salmonella choleraesius
Group A Streptococcus	Staphylococcus aureus
Group B Streptococcus	Adenovirus
Group C Streptococcus	

Interfering Substances

The following potentially Interfering Substances were added to HPG negative and positive specimens.

Ascoribic acid: 20 mg/dl	Caffeine: 40 mg/dl
Uric acid: 60 mg/dl	Bilirubin: 100 mg/dl
Glucose: 2000 mg/dl	Urea: 2000 mg/dl
Oxalic acid: 60 mg/dl	Albumin: 2000 mg/dl
Aspirin: 20 mg/dl	

Bibliography

1. Marshall, BJ, McGechie, DB, Rogers, PAR and Glancy, RG. Pyloric Campylobacterinfection and gastroduodenal disease. Med. J. Australia. (1985), 149: 439-444.
2. Soll, AH. Pathogenesis of peptic ulcer and implications for therapy. New England J. Med.(1990), 322: 909-916.
3. Hazell, SL, et al. Campylobacter pyloridis and gastritis I: Detection of urease as a markerof bacterial colonization and gastritis. Amer. J. Gastroenterology. (1987), 82(4): 292-296.
4. Cutler AF. Testing for Helicobacter pylori in clinical practice. Am j. Med. 1996; 100:35S-41S.
5. Anand BS, Raed AK, Malaty HM, et al. Loe point prevalence of peptic ulcer in normalindividual with Helicobacter pylori infection. Am J Gastroenterol. 1996,91:1112-1115.

Glossary of Symbols

Consult instructions for use
Test per Kit
EC REP Authorized Representative
Store between 35.6°F to 86°F
Use by
Do Not Reuse
LOT Lot Number
IVD For *in vitro* diagnostic use only
REF Catalogue #
Do not use if package is damaged
Manufacturer

EC REP
MDSS GmbH
Schiffgraben 41
30175 Hannover, Germany

BTNX Inc.
722 Rosebank Road,
Pickering, ON L1W 4B2
Canada
Technical Support: 1-888-339-9964