

hCG Pregnancy Rapid Test Cassette (Urine)

Package Insert

REF L031-20131 English

A rapid, one step test for the qualitative detection of human chorionic gonadotropin (hCG) in urine. For professional in vitro diagnostic use.

INTENDED USE

The hCG Pregnancy Rapid Test Cassette (Urine) is a rapid chromatographic immunoassay for the qualitative detection of human chorionic gonadotropin in urine to aid in the early detection of pregnancy.

SUMMARY

Human chorionic gonadotropin (hCG) is a glycoprotein hormone produced by the developing placenta shortly after fertilization. In normal pregnancy, hCG can be detected in both urine and serum as early as 7 to 10 days after conception.^{1,2,3,4} hCG levels continue to rise very rapidly, frequently exceeding 100 mIU/mL by the first missed menstrual period,^{2,3,4} and peaking in the 100,000-200,000 mIU/mL range about 10-12 weeks into pregnancy. The appearance of hCG in both the urine and serum soon after conception, and its subsequent rapid rise in concentration during early gestational growth, make it an excellent marker for the early detection of pregnancy.

The hCG Pregnancy Rapid Test Cassette (Urine) is a rapid test that qualitatively detects the presence of hCG in urine specimen at the sensitivity of 25 mIU/mL. The test utilizes a combination of two monoclonal antibodies to selectively detect elevated levels of hCG in urine. At the level of claimed sensitivity, the hCG Pregnancy Rapid Test Cassette (Urine) shows no cross-reactivity interference from the structurally related glycoprotein hormones hFSH, hLH and hTSH at high physiological levels.

PRINCIPLE

The hCG Pregnancy Rapid Test Cassette (Urine) is a rapid chromatographic immunoassay for the qualitative detection of human chorionic gonadotropin in urine to aid in the early detection of pregnancy. The test uses two lines to indicate results. The test line utilizes a combination of antibodies including two monoclonal hCG antibody to selectively detect elevated levels of hCG. The control line is composed of goat polyclonal antibodies and colloidal gold particles. The assay is conducted by adding a urine specimen to the specimen well of the test cassette and observing the formation of colored lines. The specimen migrates via capillary action along the membrane to react with the colored conjugate.

Positive specimens react with the specific antibody-hCG-colored conjugate to form a colored line at the test line region of the membrane. Absence of this colored line suggests 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 contains anti-hCG particles and anti-hCG coated on the membrane.

PRECAUTIONS

- For professional in vitro diagnostic use. Do not use after the expiration date.
- The test should remain in the sealed pouch until ready to use.
- All specimens should be considered potentially hazardous and handled in the same manner as an infectious agent.
- Use appropriate precautions in the collection, storage, handling and disposal of patient samples and used kit contents.
- Dispose of containers and used contents according to Local requirements.

STORAGE AND STABILITY

- Store as packaged at room temperature or refrigerated (2-30°C).
- The test is stable through the expiration date printed on the sealed pouch.
- DO NOT FREEZE.**

SPECIMEN COLLECTION AND PREPARATION

Urine Collection

Urine specimen must be collected in a clean and dry container. First morning urine specimen is preferred since it generally contains the highest concentration of hCG; however, urine specimens collected at any time of the day can be used. Urine specimens exhibiting visible precipitates should be centrifuged, filtered, or allowed to settle to obtain a clear specimen for testing.

Specimen Storage

Urine specimens may be stored at 2-8°C for up to 48 hours prior to testing. For prolonged storage, specimens may be frozen and stored below -20°C. Frozen specimens should be thawed and mixed before testing.

MATERIALS

Materials Provided

- Test cassettes
- Droppers
- Package insert

Materials Required But Not Provided

- Specimen collection container
- Timer

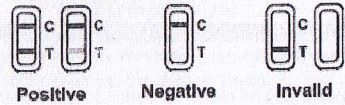
DIRECTIONS FOR USE

Allow the test, urine specimen and/or controls to reach room temperature (15-30°C) prior to testing.

- Bring the pouch to room temperature before opening it. Remove the test cassette from the sealed pouch and use it as soon as possible.
- Place the test cassette on a clean, dry and level surface. Hold the dropper vertically and transfer 3 full drops of urine (approx. 100 µL) to the specimen well (S) of the test cassette, and then start the timer. Avoid trapping air bubbles in the specimen well (S). See illustration below.
- Wait for the colored line(s) to appear. The result should be read at 3 minutes.
NOTE: A low hCG concentration might result in a weak line appearing in the test line region (T) after an extended period of time; therefore, do not interpret the result after 10 minutes.



3 Drops of Urine



INTERPRETATION OF RESULTS

(Please refer to the illustration above)

POSITIVE: Two distinct colored lines appear. One line should be in the control line region (C) and another line should be in the test line region (T).

NOTE: The intensity of the color in the test line region (T) may vary depending on the concentration of hCG 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 apparent colored 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.

QUALITY CONTROL

A procedural control is included in the test. A colored line appearing in the control line region (C) is considered an internal procedural control. It confirms sufficient specimen volume and correct sample application to the specified specimen well. But the appearance of C line does not indicate whether correct type of specimen (urine) has been added for the testing; use only appropriate specimen type. A clear background is an internal negative procedural control. If a background color appears in the result window and interferes with the ability to read the test result, the result may be invalid.

It is recommended that a positive hCG control (containing 25-250 mIU/mL hCG) and a negative hCG control (containing "0" mIU/mL hCG) be evaluated to verify proper test performance when a new shipment of tests are received.

LIMITATIONS

- The hCG Pregnancy Rapid Test Cassette (Urine) is a preliminary qualitative test, therefore, neither the quantitative value nor the rate of increase in hCG can be determined by this test.
- Very dilute urine specimens, as indicated by a low specific gravity, may not contain representative levels of hCG. If pregnancy is still suspected, a first morning urine specimen should be collected 48 hours later and tested.
- Very low levels of hCG (less than 50 mIU/mL) are present in urine specimens shortly after implantation. However, because a significant number of first trimester pregnancies terminate for natural reasons,⁵ a test result that is weakly positive should be confirmed by retesting with a first morning urine specimen collected 48 hours later.
- This test may produce false positive results. A number of conditions other than pregnancy, including trophoblastic disease and certain non-trophoblastic neoplasms including testicular tumors, prostate cancer, breast cancer, and lung cancer, cause elevated levels of hCG.^{6,7} Therefore, the presence of hCG in urine should not be used to diagnose pregnancy unless these conditions have been ruled out.
- This test may produce false negative results. False negative results may occur when the levels of hCG are below the sensitivity level of the test. When pregnancy is still suspected, a first morning urine specimen should be collected 48 hours later and tested. In case pregnancy is suspected and the test continues to produce negative results, see a physician for further diagnosis.
- This test provides a presumptive diagnosis for pregnancy. A confirmed pregnancy diagnosis should only be made by a physician after all clinical and laboratory findings have been evaluated.

EXPECTED VALUES

Negative results are expected in healthy non-pregnant women and healthy men. Healthy pregnant women have hCG present in their urine and serum specimens. The amount of hCG will vary greatly with gestational age and between individuals.

The hCG Pregnancy Rapid Test Cassette (Urine) has a sensitivity of 25 mIU/mL, and is capable of

detecting pregnancy as early as 1 day after the first missed menses.

PERFORMANCE CHARACTERISTICS

Accuracy

A clinical evaluation was conducted comparing the results obtained using the hCG Pregnancy Rapid Test Cassette (Urine) to another commercially available urine membrane hCG test. The study included 200 urine specimens, and both assays identified 150 negative and 50 positive results. The results demonstrated >99% overall accuracy of the hCG Pregnancy Rapid Test Cassette (Urine) when compared to the other urine membrane hCG test.

hCG Reference Method

Method	Other hCG Rapid Test		Total Results
	Positive	Negative	
hCG Test Cassette	50	0	50
	0	150	150
Total Results	50	150	200

Sensitivity: 100% (93%-100%)* Specificity: 100% (98%-100%)* Accuracy: 100% (98%-100%)*
* 95% Confidence Intervals

Sensitivity and Specificity

The hCG Pregnancy Rapid Test Cassette (Urine) detects hCG at a concentration of 25 mIU/mL greater. The addition of LH (500 mIU/mL), FSH (1,000 mIU/mL), and TSH (1,000 µIU/mL) to negative (0 mIU/mL hCG) and positive (25 mIU/mL hCG) specimens showed no cross-reactivity.

Interfering Substances

The following potentially interfering substances were added to hCG negative and positive specimens

Acetaminophen	20 mg/dL	Gentisic Acid	20 mg/dL
Acetylsalicylic Acid	20 mg/dL	Glucose	2 g/dL
Ascorbic Acid	20 mg/dL	Hemoglobin	1 g/dL
Bilirubin	50 mg/dL	Urea	2 g/dL
Caffeine	20 mg/dL		

None of the substances at the concentration tested interfered in the assay.

BIBLIOGRAPHY

- Batzer FR. *Hormonal evaluation of early pregnancy*. Fertil. Steril. 1980; 34(1): 1-13
- Catt KJ, ML Dufau, JL Vaitukaitis. *Appearance of hCG in pregnancy plasma following the initiation of implantation of the blastocyst*. J. Clin. Endocrinol. Metab. 1975; 40(3): 537-540
- Braunstein GD, J Rasor, H Danzer, D Adler, ME Wade. *Serum human chorionic gonadotropin level throughout normal pregnancy*. Am. J. Obstet. Gynecol. 1976; 126(6): 678-681
- Lenton EA, LM Neal, R Sulaiman. *Plasma concentration of human chorionic gonadotropin from time of implantation until the second week of pregnancy*. Fertil. Steril. 1982; 37(6): 773-778
- Steier JA, P Bergsjö, OL Myking. *Human chorionic gonadotropin in maternal plasma after induced abortion, spontaneous abortion and removed ectopic pregnancy*. Obstet. Gynecol. 1984; 64: 391-394
- Dawood MY, BB Saxena, R Landesman. *Human chorionic gonadotropin and its subunits in hydatidiform mole and choriocarcinoma*. Obstet. Gynecol. 1977; 50(2): 172-181
- Braunstein GD, JL Vaitukaitis, PP Carbone, GT Ross. *Ectopic production of human chorionic gonadotropin by neoplasms*. Ann. Intern Med. 1973; 78(1): 39-45

Index of Symbols

	Manufacturer		Tests per kit		Store between 2-30°C
	For in vitro diagnostic use only		Use by		Do not reuse
	Lot Number		Catalog #		Authorized Representative

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