hCG Cassette
SP™ Brand Rapid Test

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

For professional in vitro diagnostic use only.

CLIA COMPLEXITY: Waived

INTENDED USE
The SP™ Brand Rapid Test hCG Cassette is a rapid chromatographic immunoassay for the qualitative detection of human chorionic gonadotropin (hCG) 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. HCG levels continue to rise very rapidly, frequently exceeding 100 mIU/mL by the first missed menstrual period, and peak 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.

DIRECTIONS FOR USE
Allow the test cassette, urine specimen and/or controls to equilibrate to room temperature 15°-30°C (59°-86°F) prior to testing.

1. Remove the test cassette from the sealed pouch and use it as soon as possible.
2. Place the test cassette on a clean 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 the illustration below.
3. Wait for the red line(s) to appear. The result should be read at 3 minutes. It is important that the background is clear before the result is read. Note: A low hCG concentration might result in a weak line appearing in the test region (T) after an extended period of time; therefore, do not interpret the result after 10 minutes.

INTERPRETATION OF RESULTS

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

NEGATIVE: One red line appears in the control region (C). No apparent red or pink line appears in the test 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 cassette. If the problem persists, discontinue using the test kit immediately and call Technical Services at 1-866-211-7853.

QUALITY CONTROL
Internal procedural controls are included in the test. A red line appearing in the control region (C) is the internal procedural control. It confirms sufficient specimen volume and correct procedural technique. A clear background is an internal negative background control. If the test is working properly, the background in the result area should be white to light pink and not interfere with the ability to read the test result.

It is recommended that a positive hCG control (containing 25 mIU/mL) and a negative hCG control (containing 0 mIU/mL) hCG be evaluated to verify proper test performance. It is recommended that federal, state, and local guidelines be followed.

LIMITATIONS
1. 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.
2. 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.
3. Very low levels of hCG (less than 5 mIU/mL) are present in urine specimens shortly after implantation. However, because a significant number of first trimester pregnancies terminate for natural reasons, a test result that is weakly positive should be confirmed by retesting with a first morning urine specimen collected 48 hours later.
4. 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. Therefore, the presence of hCG in urine specimen should not be used to diagnose pregnancy unless these conditions have been ruled out.
5. 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.

PRINCIPLE
The SP™ Brand Rapid Test hCG Cassette is a rapid chromatographic immunoassay for the qualitative detection of human chorionic gonadotropin (hCG) in urine to aid in the early detection of pregnancy. The test utilizes a combination of monoclonal and polyclonal antibodies to selectively detect elevated levels of hCG in urine. At the level of claimed sensitivity, the SP™ Brand Rapid Test hCG Cassette shows no cross-reactivity interference from the structurally related glycoprotein hormones hFSH, hLH and hTSH at high physiological levels.

MATERIALS
Materials Provided
- Thirty (30) individually packaged test cassettes each containing one disposable specimen dropper.
- One directional insert

Materials Required But Not Provided
- Specimen collection container
- Timer

SPECIMEN COLLECTION AND PREPARATION
A urine specimen must be collected in a clean and dry container. A 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 may 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 (36°-46°F) for up to 48 hours prior to testing. For prolonged storage, specimens may be frozen and stored below -20°C (-4°F). Frozen specimens should be thawed and mixed before testing.
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 SP™ Brand Rapid Test HCG Cassette 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 multi-center clinical evaluation was conducted comparing the results obtained using the SP™ Brand Rapid Test HCG Cassette to another commercially available urine membrane hCG test. The study included 159 urine specimens: both assays identified 88 negative and 71 positive results. The results demonstrated a 100% overall agreement (for an accuracy of >99%) of the SP™ Brand Rapid Test HCG Cassette when compared to the other urine membrane hCG test.

Reference hCG Method

<table>
<thead>
<tr>
<th>SP™ Brand Rapid Test</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>hCG Cassette</td>
<td>71</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>88</td>
</tr>
</tbody>
</table>

Sensitivity and Specificity

The SP™ Brand Rapid Test HCG Cassette detects hCG at a concentration of 25 mIU/mL or greater. The test has been standardized to the WHO/IUS. Third International Standard. The addition of LH (300 mIU/mL), FSH (1,000 mIU/mL), and TSH (1,000 μU/mL) to negative (0 mIU/mL hCG) and positive (25 mIU/mL hCG) specimens showed no cross-reactivity.

Potentially Interfering Substances

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

All substances listed in mg/dL, unless otherwise noted.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Concentration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>20</td>
<td>1%</td>
</tr>
<tr>
<td>Acetone</td>
<td>1,000</td>
<td>2</td>
</tr>
<tr>
<td>Acetylsalicylic Acid</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Acetaoacetic Acid</td>
<td>2,000</td>
<td>20</td>
</tr>
<tr>
<td>Ampicillin</td>
<td>20</td>
<td>2,000</td>
</tr>
<tr>
<td>Ascorbic Acid</td>
<td>25</td>
<td>1,000</td>
</tr>
<tr>
<td>Atropine</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1,000</td>
<td>1%</td>
</tr>
<tr>
<td>Estradiol</td>
<td>1,000</td>
<td>2</td>
</tr>
<tr>
<td>Estrone 3-Sulfate</td>
<td>2,000</td>
<td>10</td>
</tr>
<tr>
<td>Gentisic Acid</td>
<td>2,000</td>
<td>20</td>
</tr>
<tr>
<td>Glucose</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>25</td>
<td>1,000</td>
</tr>
<tr>
<td>Heroin</td>
<td>20</td>
<td>1</td>
</tr>
</tbody>
</table>

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

BIBLIOGRAPHY


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