

# First Sign®

## One-Step Urine Pregnancy Test Strip Package Insert

For Professional and *In Vitro* Diagnostic Use Only

A Qualitative Test for Detection of Human Chorionic Gonadotropin (hCG) in Human Urine for Early Detection of Pregnancy



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### INTENDED USE

**First Sign® One-Step Urine Pregnancy Test** is a rapid chromatographic immunoassay designed for the qualitative determination of human chorionic gonadotropin (hCG) in urine for early detection of pregnancy.

### SUMMARY AND EXPLANATION

Human chorionic gonadotropin (hCG) is a glycoprotein hormone secreted by the developing placenta shortly after fertilization. During normal pregnancy, hCG can be detected in urine as early as 7 days following conception, doubling every 1.3 to 2 days. At the time of the last missed menstrual period, urine hCG levels of 100,000 to 200,000mIU/mL can be seen at the end of the first trimester. The presence of hCG soon after conception during early gestational growth make it an ideal marker for the detection of pregnancy.

### PRINCIPLE

The **First Sign® One-Step Urine Pregnancy Test** is rapid qualitative one step assay for the detection of hCG in urine. The method employs a unique combination of monoclonal dye conjugate and polyclonal-solid phase antibodies to selectively identify the hCG in the test samples with an extremely high degree of sensitivity. As early as 5 minutes, level of hCG as low as 25mIU/mL can be detected.

As the test sample flows through the absorbent device, the labeled antibody-dye conjugate binds to the hCG forming an antibody-antigen complex. These complex binds to anti-hCG antibody in the positive reaction zone ("T" area) and produces a pink-purple colored band when the hCG concentration is greater than 25mIU/mL. In the absence of hCG, there is no line in the positive reaction zone. Unbound conjugate binds to the reagents in the control zone ("C" area), producing a pink-purple band, demonstrating the reagents are functioning properly.

### REAGENTS AND MATERIALS

**Ingredients:** contains a combination of mouse monoclonal antibodies and polyclonal antibodies (sheep or goat) directed against human gonadotropin.  
**Mouse monoclonal antibodies and polyclonal antibody on colloidal gold particle.**

#### Material Provided:

Each **First Sign® One-Step Urine Pregnancy Test** strip individually sealed in a foil pouch.

Each pouch contains:

1. One **First Sign® One-Step Urine Pregnancy Test** strip
2. Desiccant

#### Material Required But Not Provided:

1. Timer
  2. Sample container
  3. Disposable gloves
- No other equipment or reagents are needed.

### STORAGE AND STABILITY

Store test strip at 4°C to 30°C (40°F to 86°F). The test strip is stable until the date imprinted on the pouch label.

### PRECAUTION

1. For professional and *in vitro* diagnostic use only.
2. Read directions for use carefully before performing this test.
3. Do not use the test beyond the expiration date indicated on the pouch label.
4. Handle all specimens for testing as if potentially infectious. Proper precautions in handling should be maintained according to good laboratory practice.
5. The test strip should be discarded in a proper biohazard container after testing.
6. The test strip should remain in the sealed pouch until use.

### URINE SPECIMEN COLLECTION AND PREPARATION

A first morning urine specimen is preferred since it contains the highest concentration of hCG. However, randomly collected urine specimens may be used. Collect the urine specimen in a clean dry container. If testing is not immediate performed, the specimen should be stored refrigerated at 2°C to 8°C for 48 hours. In such cases bring the sample to room temperature prior to testing.

### SPECIMEN STORAGE

Urine specimen may be stored at 2°C to 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.

### DIRECTION FOR USE

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

1. Remove the test strip from the foil pouch and use it as soon as possible.
2. Immerse the strip into the urine with the arrow end pointing toward the urine. Do not cover the strip with urine over the MAX (maximum) line. You may take the strip out after minimum of 15 seconds in the urine and lay the strip flatly on non-absorbent clean surface.
3. Wait for the pink-purple line(s) to appear. **Read the result at 5 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 RESULT AFTER 10 MINUTES.**



## INTERPRETATION OF RESULTS

### 1. Negative:

Only one pink-purple colored band appears in the control area (C).

T C



### 2. Positive:

In addition to the control band a clearly distinguishable pink-purple colored band also appears in the test area (T).

T C



### 3. Invalid:

As long as there is no distinct pink-purple colored band visible in control area, the test is invalid. It is recommended that in this case the test be repeated, or fresh specimen be obtained and tested 48 hours later.

## QUALITY CONTROL

### Built in Quality Control Features:

After addition of the sample, these colored bands migrate along the membrane at the leading edge of the dye conjugate and are "removed" from the test strip completely.

When the test is complete, you will see a pink-purple colored band in the "C" area of the test strip on negative samples and a pink-purple colored band in the "T" and "C" area on positive samples. The appearance of the CONTROL band indicates that the test strip is performing properly and serves as procedural control.

## PERFORMANCE CHARACTERISTICS

### Sensitivity:

**First Sign® One-Step Urine Pregnancy Test** strip is a rapid test used to detect the presence of hCG in urine qualitatively at levels as low as 25mIU/mL.

### Accuracy:

Test accuracy was assessed by comparing 99 patient urine samples that were tested comparing the results of the **First Sign® One-Step Urine Pregnancy Test** to an equivalent product. **First Sign® One-Step Urine Pregnancy Test** demonstrated 100% correlation with the equivalent product (Fisher Sure Vue).

### Specificity:

Potentially interfering substances were added to urine that had hCG levels of 0 and 25mIU/mL. No interference was observed with the **First Sign® One-Step Urine Pregnancy Test**.

Acetaminophen	20mg/dL
Acetylsalicylic Acid	20mg/dL
Ascorbic Acid	20mg/dL
Atropine	20mg/dL

Caffeine	20mg/dL
Gentisic Acid	20mg/dL
Glucose	2mg/dL
Hemoglobin	1mg/mL
Ampicillin	20mg/dL
Tetracycline	20mg/dL

The following hormones were tested for cross reactivity and did not affect the performance of the **First Sign® One-Step Urine Pregnancy Test**

hTSH	1000μIU/mL	WHO 68/38
hLH	500mIU/mL	WHO 2 <sup>nd</sup> IRP HMG
hFSH	2000mIU/mL	WHO 2 <sup>nd</sup> IRP HMB

## LIMITATION

1. Occasionally specimens containing less than 25mIU/mL for urine also yield positive results.
2. In addition to pregnancy, hCG has been found in patients with both gestational and non-gestational trophoblastic disease. Since the hCG has been found in patients with both gestational and non-gestational neoplasms is similar to that found pregnancy, these conditions, which include choriocarcinoma and hydatidiform mole, should be ruled out before a diagnosis of pregnancy is reached.
3. A normal pregnancy can not be distinguished from an ectopic pregnancy based on hCG levels alone. Also, spontaneous miscarriage may cause confusion in interpreting test results.
4. A very early pregnancy containing an extremely low concentration of hCG can give a negative result. In this case, another specimen should be obtained at least 48 hours later and tested.
5. hCG levels may remain detectable for several weeks after normal delivery, delivery by cesarean section, spontaneous abortion or therapeutic abortion.

## REFERENCE

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