

STREP A Rapid Test

EN Wellion STREP A Rapid Test / Instruction for Use / For self-testing

Rapid test for the qualitative detection of group A Streptococcus antigens in human throat swab samples. For self-testing, *in-vitro* diagnostic use only.

INTENDED PURPOSE
The Strep A Rapid is a lateral flow chromatographic immunoassay for the qualitative detection of group A Streptococcus antigens in human throat swab samples. The test is not automated. This product is suitable for self-testing by persons of 16 years of age. It is recommended that individuals aged from 3-16 should be tested by a parent or guardian. The test is an *in-vitro* diagnostic device intended to be used as an aid in the diagnosis of a Streptococcus A (Strep A) infection in patients with typical symptoms, such as pharyngitis, impetigo, edematous, meningitis, purpuric sepsis, and arthritis.^{1,2}

SUMMARY
Streptococcus pyogenes is a species of non - motile - gram - positive cocci which are categorized as Lancefield group A, which may cause serious infections such as pharyngitis, respiratory infection, impetigo, edematous, meningitis, purpuric sepsis, and arthritis.^{1,2} Left untreated, these infections can lead to severe complications, including rheumatic fever, acute glomerulonephritis, and necrotizing fasciitis. Diagnostic procedures for a group A streptococcal infection involve the isolation and identification of viable organisms using techniques that require 24 hours or longer.^{1,2}

The Strep A Rapid is an immunological test designed to specifically identify Streptococcus A bacteria in oropharyngeal infections. The test helps the patient recognizes whether the infection is caused by Streptococcus.

TEST PRINCIPLE
The Strep A Rapid is a lateral flow immunoassay based on the principle of the double-antibody sandwich technique. The test cassette consists of: 1) a conjugate pad containing rabbit anti-group A Streptococcus monoclonal antibodies conjugated with colloidal gold (Strep A Ab conjugates), 2) a nitrocellulose membrane strip containing goat anti-rabbit IgG antibody, 3) a control pad containing goat anti-rabbit IgG antibody, and 4) a tube stand.

A specimen (a swab) is applied to the sample well of the test cassette. The immunocomplex is then captured on the membrane by the pre-coated rabbit anti-group A Streptococcus monoclonal antibody reagent, forming a binding line T, indicating a group A Streptococcus positive test result.

Diagnose is based on the presence of a binding line T and absence of a binding line C.

Positive: If a binding line T (C) is visible, the test result is valid and the specimen must be retested using another test cassette.

Negative: If no binding line T (C) is visible, the test result is invalid. The specimen must be retested using another test cassette.

Invalid: If the control line T is visible, the test result is invalid. The specimen must be retested using another test cassette.

Uninterpretable: If no binding line T (C) is visible, the test result is invalid. The specimen must be retested using another test cassette.

For self-diagnostic use only.

Read these instructions for use carefully before performing the test. The test cassette is reliable if the instructions are followed correctly (reaction time, how the sample is taken, etc.).

The assay is intended as an aid in the diagnosis of a group A streptococcal infection. The test does not determine the state of infection or associated diseases.

Do not use this test for children under 3 years of age.

Keep the test out of the reach of children.

Extraction Reagent 1 contains sodium nitrate. Warning: harmful if swallowed, causes serious eye irritation.

Do not drink the extraction reagent.

Do not use beyond the expiry date.

The test is for the detection of group A streptococcal antigens in human throat swab samples. 1 or 2 other items in the box, if swallowed, seek medical advice immediately and show the remaining contents of the box, for the instructions for use and the packaging.

If you have any questions about the test, please contact your physician or pharmacist.

Do not introduce bottle caps between reagents.

Please follow local regulations when disposing of used tests.

Always use a clean, dry, flat surface. Place the empty plastic test tube into one of the openings of the tube stand.

The swab is a single, sterilized medical device and is provided in a sterilized state. It has been sterilized using ethylene oxide, and CANNOT be re-used. Do not use if the swab is damaged.

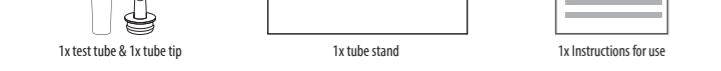
If any serious events occur in relation to the test, please report them to Geyrinya and the competent authority of your country.

If there is any problem with the test, please contact your physician or pharmacist.

Out the test, please follow the instructions for use.

COMPONENTS

The Strep A Rapid Test contains:



• Test cassette: The test cassette is composed of glass fiber, a nitrocellulose membrane, a plastic carrier and absorbent paper. The main components are rabbit anti-group A Streptococcus monoclonal antibodies, goat anti-rabbit polyclonal antibodies and colloidal gold labeled rabbit anti-group A Streptococcus monoclonal antibodies.

• Reagent 1: Bottle with 1.0 M sodium nitrate, with white bottle cap

• Reagent 2: Bottle with 0.1 M acetic acid, with red bottle cap

• Tube stand: Plastic tube stand with 4 openings for test tubes

• Tube tip: Attached to the test tube, allows precise application of the sample

• Tongue depressor: Test tube cap support

• Instructions for use

• Timer

STORAGE AND STABILITY

The test is best between 2-10°C and 80% to 80% relative humidity. Keep away from light. Exposure to temperatures and / or humidity outside the specified conditions may cause inaccurate results.

Do not freeze. Use the test at temperatures between 15-30°C.

Do not use after the expiration date (printed on the foil pouch and box).

To avoid any risk to obtain optimal results, the test should be performed within one hour of removing the test cassette from the sealed foil pouch. If the temperature is higher than 25°C or the humidity is above 90%, use immediately after opening the foil pouch.

The reagent bottles should be stored at room temperature. Extraction reagent 1 should be discarded after 1 month. Extraction reagent 2 should be discarded after 6 months.

All test applications are dated in Year-Month-Year format. 2022-06-18 indicates June 18, 2022.

SPECIMEN COLLECTION AND PREPARATION

1. Specimen collection

For self-diagnosis take a sample using the disposable swab provided with the test kit. Swab the posterior pharynx, tonsils, and other surrounding inflamed areas, avoiding contact with the tongue, inner cheeks, and teeth. Fasting more than half an hour after taking a sample is recommended to avoid food interference.

2. Specimen handling

Collect the sample immediately after collecting a throat swab sample. If testing cannot be performed immediately, throat swab samples should be stored in a clean, dry container at room temperature for up to 4 hours and at 2-8°C for up to 24 hours. DO NOT FREEZE.

TEST PROCEDURE

Allow the tests, samples and reagents to come to room temperature (15-30°C) before testing.

1. If the age of the patient is 3-16 years, the following test steps should be carried out by a parent or legal guardian.

2. Wash hands with hot water and soap, rinse with clean water and dry.

3. Place the tube stand on a clean, dry, flat surface. Place the empty plastic test tube into one of the openings of the tube stand.

4. Add 6 drops of Reagent 1 (white bottle cap) and 4 drops of Reagent 2 (red bottle cap) to the test tube and mix properly.

Note: To obtain the best results, 6 drops of Reagent 1 and 4 drops of Reagent 2 are required.

5. Collecting the sample

For self-diagnosis by individuals over 16 years of age:

• Open the pouch containing the disposable swab. Remove the swab using the plastic handle and avoid touching the cotton tip.

• Stand the swab upright and touch the back of your mouth as much as possible. Then touch the back of the throat, touch the back of the tonsils and any reddened areas.

• Use the other hand to insert the swab into the throat. Test the back of the throat, touch the back of the tonsils and any reddened areas. It is recommended to rotate the swab as this increases the amount of sample collected. If you have any difficulties as someone to help you collect the sample:

• The pouch containing the disposable swab should be opened by the parent or legal guardian. They should remove the swab using the plastic handle and avoid touching the cotton tip.

• Then stand the swab to face with their parent or legal guardian, tilt the head backwards and open your mouth as much as possible. The parent or legal guardian should stand behind the child and help to insert the swab into the patient's throat. Touch the back of the throat, the area around the tonsils and any reddened areas. It is recommended to rotate the swab as this increases the amount of sample collected.

6. After collecting the sample, insert the swab's cotton tip into the plastic test tube placed in the tube stand, containing the previously added two reagents.

7. Hold the plastic handle of the swab firmly and shake the swab about 10 times against the sides of the test tube to mix the solution thoroughly. Leave the swab to incubate for 1 minute.

8. Remove the test tube with the swab and solution. Plug it in (L) from the tube stand. Stand over hand and index finger, press the side of the test tube handle in such fluid as possible with the swab's cotton tip, and collect it in the test tube. Remove the swab.

9. Dispose the swab according to regulations and put the test tube back into one of the openings of the tube stand.

10. Add the tube tip to the plastic test tube.

11. Add 3 drops to the sample well of the test cassette.

Note: If the dispersed droplets contaminate air bubbles, add another drop to the sample well.

12. Wait for the color line(s) to appear. Read the result after 5 minutes. Do not read results after more than 10 minutes.

RESULT INTERPRETATION

Positive: Two distinct colored lines appear. One line should be in the control region (C) and another line should be in the test line region (T), indicating that the result is positive. It indicates that you may be in a stage of a group A streptococcal infection and should consult your doctor.

Note: If the color line(s) do not appear, the test is invalid. The test is invalid if any coloration is present in the test line region (T). This indicates that the result is negative. A colored line appears in the control line region (C), but not in the test line region (T), indicating that the result is negative. It indicates that you do not have a group A streptococcal infection.

Invalid: The control line fails to appear. If the control line fails to appear, the test is invalid. If the procedure fails, stop using the test cassette and contact your local distributor.

For medical purposes, please contact your physician.

For questions about the test, please go to <https://geyrinya.com> or email us info@geyrinya.com.

Note: Do not make any relevant medical decisions without consulting a qualified healthcare professional.

LIMITATIONS

The Strep A Rapid is intended for self-testing, *in-vitro* diagnostic use only and is intended for the qualitative detection of group A Streptococcus antigens in throat swab samples.

• A negative result of the Strep A Rapid Test only indicates the presence of group A Streptococcus antigens in the sample and should not be used as the sole criterion for the diagnosis of a group A hemolytic streptococcal infection.

• A positive result of the Strep A Rapid Test indicates a group A Streptococcus antigen in the throat swab is insufficient or below the detection limit of the test. If symptoms persist or worsen, you should consult your doctor.

• Excessive blood or in the swab sample can impair the test performance and lead to false positive results.

PERFORMANCE CHARACTERISTICS

1. Clinical Performance: Based on 125 samples, the results of the Strep A Rapid test compared to a culture method are shown as follows:

Strep A Rapid Test	Culture Method		
	Positive	Negative	Total
Positive	36	1	37
Negative	0	88	88
Total	36	89	125
Diagnostic sensitivity	100.00% (36/36)	95.95% (88/92)	>95%
Diagnostic specificity	98.88% (88/90)	95.93% (90/95)	>95.93%
Diagnostic accuracy	99.20% (124/125)	95.55% (115/120)	>95.55%
Positive predictive value	98.95% (35/36)	95.72% (85/89)	>95.72%
Negative predictive value	100.00% (85/85)	95.00% (84/88)	>95.00%
Positive likelihood ratio	109.00	1.00	12.68
Negative likelihood ratio	0.00	0.00	0.00
For positive result	1 (100%)	1 (100%)	1 (100%)
For negative result	0 (0%)	1 (100%)	1 (100%)

2. Lay-person Study: A total of 100 individuals (3-16 years old and over 16 years old) participated in the study. Based on the test results, the statistical analysis was as follows:

Person	Positive	Negative	Total
Positive	30	0	30
Negative	0	70	70
Total	30	70	100
Diagnostic sensitivity	100%	100%	100%
Diagnostic specificity	100%	100%	100%
Diagnostic accuracy	100%	100%	100%
Positive predictive value	100%	100%	100%
Negative predictive value	100%	100%	100%
Positive likelihood ratio	1.00	1.00	1.00
Negative likelihood ratio	0.00	0.00	0.00
For positive result	1 (100%)	1 (100%)	1 (100%)
For negative result	0 (0%)	1 (100%)	1 (100%)

Compared with culture:

Person	Positive	Negative	Total

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