

DENGUE NS1 ANTIGEN  
SELF TEST  
(Home Test for Dengue NS1 Antigen Detection)

Finger Prick Rapid Visual Test for the Detection of  
Dengue NS1 Antigen in Human Whole Blood/ Serum/ Plasma

**INTRODUCTION**  
Dengue virus is a flavivirus found largely in areas of the tropic and sub-tropics. There are four distinct but antigenically related serotypes of dengue viruses, and transmission is by mosquito, principally Aedes aegypti and Aedes albopictus.

The mosquito-borne dengue viruses (serotype 1-4) cause dengue fever, a severe flu-like illness. WHO estimates that 50-80 million cases of dengue fever occur worldwide each year, including a potentially deadly form of the disease called dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS). The major clinical symptoms can include high fever, haemorrhagic events, and circulatory failure, and the fatality rate can be as high as 40%. Early diagnosis of DSS is particularly important, as patients may die within 12 to 24 hours if appropriate treatment is not administered.

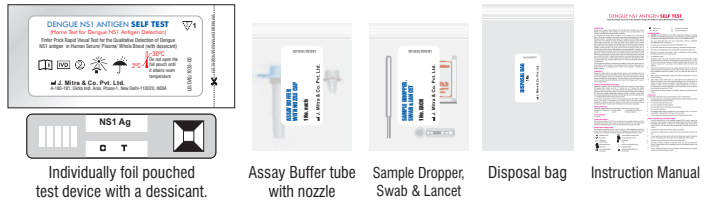
Primary dengue virus infection is characterized by elevations in specific NS1 antigen levels 0 to 9 days after the onset of symptoms; this generally persists upto 15 days. Earlier diagnosis of Dengue reduces risk of complication such as DHF or DSS, especially in countries where dengue is endemic.

**INTENDED USE**  
Dengue NS1 Antigen Self Test is a rapid solid phase immuno- chromatographic test for the qualitative detection of Dengue NS1 Antigen in human Whole Blood/ Serum/ Plasma. This test is intended to be for home use with self-collected whole blood specimens from individuals aged 18 years or above (or collected by adults for individuals below 18 years of age) as well as for professional use with collected venous Whole Blood/ Serum/ Plasma samples. This test is for in vitro diagnostic use only and is designed as an aid in the early diagnosis of dengue infection in patients with clinical symptoms.

**PRINCIPLE (ANTIGEN-ANTIBODY REACTION)**  
Dengue NS1 Antigen Self Test is an immunoassay based on the “sandwich” principle. Dengue NS1 antigen device contains two lines; “C” (Control Line) & “T” (Dengue NS1 Antigen detection Test Line). Test line is coated with anti-dengue NS1 antibodies. When a sample is added to the device, Dengue NS1 antigen if present in the sample will bind to the anti-dengue NS1 gold colloid conjugate making antigen antibodies complex. On addition of assay buffer, this complex migrates along the membrane to the test region and forms the visible pink line at “T” as antibody-antigen-antibody gold conjugate complex.  
The intensity of the test band in the device will vary depending upon the amount of antigen present in the sample. The appearance of any purple/pink colour in test region should be considered as reactive for Dengue NS1 antigen. A red procedural control line should always develop in the test device window to indicate that the test has been performed properly.

**KIT STORAGE AND STABILITY**  
1. Store the kit at 2-30°C in cool and dry place.  
2. The kit is suitable till the expiry date mentioned on the kit.  
3. Do not freeze the kit.

KIT CONTENTS



**STEP-1 PREPARATION FOR THE TEST**  
a) Wear disposable gloves before running the test. Ensure there is no cut or wound in hand.

b) Take out all the contents from the kit box and place it on a flat surface.

c) Tap the assay buffer tube gently to ensure buffer comes down to bottom of the tube. Unscrew the cap and remove from the tube. Place the nozzle on the assay buffer tube and press it gently to ensure it is tightly placed on the tube.

Care should be taken while removing the cap so that no spillage should occur. Do not press the tube while placing the nozzle, otherwise assay buffer may come out.

d) Take out the Dengue NS1 Antigen Self Test card from the foil pouch prior to use and place it on a flat and dry surface.

Test should be run immediately once pouch is open.

STEP-2 SPECIMEN COLLECTION

A) Whole blood sample collection from finger prick

a) Clean the fingertip with alcohol swab and dry completely.

b) Prick the fingertip with single use lancet provided in the kit.

Discard the lancet in the Assay Buffer Tube once the test is completed.

c) Collect the whole blood using sample dropper provided.

- OR -

B) Collected venous blood (Serum/ Plasma/ Whole Blood) sample from collection tubes

a) Take sample from collection tube. Fresh samples are preferred for testing as they perform best when tested immediately after collection. If samples are not immediately tested, they should be stored at 2-8°C for not more than 3 days, otherwise false / erroneous results may be obtained.

Do not use hemolyzed/ turbid or lipaemic samples as it may lead to erroneous results.

**STEP-3 RUNNING THE TEST ON DEVICE**  
a) Add 1 drop of whole blood sample into the sample well of the test card.

Addition of incorrect no. of drops of sample may give invalid or false result.

b) Add 1 drop assay buffer into the sample well.

Addition of incorrect no. of drops of Assay Buffer may give invalid or false result.

c) Allow reaction to occur for 20 minutes.

d) Read results at 20 minutes. Positive results may appear as early as 2-10 minutes. However negative results must be confirmed at 20 minutes. Do not read results after 30 minutes. Discard the Dengue NS1 Antigen Self test card immediately after results at 20 minutes in disposable bag considering it to be potentially infectious. Follow the local regulations for disposal of potential biohazardous material.

STEP-4 RESULT INTERPRETATION

**POSITIVE RESULT:** If two distinct pink line appear in the control region 'C' and test region 'T', then the specimen is positive for Dengue NS1 Antigen. Any pink line observed in test are (T) - whether faint or dark, along with Control line shall be considered as Dengue NS1 Antigen positive.

**NEGATIVE RESULT:** If only one pink coloured line appear in the control region 'C', then the specimen is negative for Dengue NS1 Antigen.

**INVALID RESULT:** If neither control line “C” nor test line “T” appears or only test line appears, the test should be treated as Invalid. Repeat the test again with new card. Invalid test may be because of following reasons:  
(a) Kit is stored in high humidity and temperature.  
(b) Wrong test procedure.  
(c) Long atmospheric exposure of the test device after opening the pouch.

STEP-5 DISPOSAL OF USED KIT COMPONENTS

Discard the used lancet in Assay Buffer Tube; remove the nozzle from the tube and add the used lancet in tube and screw cap the tube. Discard the Assay Buffer Tube containing lancet, run device and sample dropper in disposal bag provided with the kit. Close the bag properly and throw the bag in the house-hold dustbin.

- WARNING FOR USERS**
- The use of disposable gloves is RECOMMENDED while running the test.
  - Do not perform the test in area with strong air flow i.e. under fan or strong air conditioning.
  - In case there is a cut or wound in hand, DO NOT PERFORM THE TEST.
  - Do not smoke, drink or eat in areas where test is performed.
  - Mark the test card with patient's name or identification number. Improper identification may lead to wrong result reporting.
  - This test detects the presence of Dengue NS1 antigen in the human Whole blood/ serum/ plasma. Do not use urine and saliva as specimen for this test.
  - Dispose off all specimens and materials used to perform the test in the disposal bag provided with the kit in accordance with local regulations.
  - Wash hands thoroughly with soap or any suitable detergent after the use of the kit.

PRECAUTIONS

- Bring kit to room temperature (20-30°C) before use.
- Do not use kit components beyond the expiration date, which is printed on the kit.
- Use a separate Sample Dropper for each specimen.
- Do not re-use the test kit.
- Do not use the test kit if the pouch is damaged or the seal is broken.
- Do not mix or use the assay buffer of different kits/lot.
- Ensure that the nozzle cap is properly placed on the assay buffer tube.

LIMITATIONS AND INTERFERENCES

- Any deviation from test procedure may lead to invalid/ erratic results.
- This is only an in-vitro diagnostic screening test and should not be used as the sole criteria for the diagnosis of Dengue infection.
- This is a Qualitative test and therefore neither determine Dengue NS1 Antigen quantitative value nor the rate of Dengue NS1 Antigen concentration.
- A negative result may occur if the concentration of Dengue NS1 Antigen in a specimen is below the detection limit of the test or if the specimen was collected or transported improperly. Therefore a negative test result does not eliminate the possibility of Dengue infection, and should be confirmed by ELISA and/or RT-PCR.
- Positive test results do not rule out co-infections with other pathogens.

BIBLIOGRAPHY

- Guzman M.G. & Kourig Clinical & Diagnostic Laboratory Immunology (1996) Vol. 3, No. 6, 621-627.
- Young P.R., Hilditch P.A., etal J. Clinical Microbiology (2000) Vol. 38, No.3, 1053-1057.
- Evaluation of diagnostic test: Dengue, Rosanna W. Peeling, Harrey Artsob etal. (2010). Nature reviews.
- Use of dengue NS1 antigen for early diagnosis of dengue virus infection. Kassim FM; Izate MN, etal. (2011) Southeast Asian J. Trop. Med. Public Health. May; 42(3); 562-9.
- Dengue NS1 antigen detection: A useful tool in early diagnosis of dengue virus infection. S. Datta, C Wattal (2010). Indian Journal of Medical Microbiology, vol 28, No. 2; 107- 110.

DESCRIPTION OF SYMBOLS USED

The following are graphical symbols used in or found on J. Mitra diagnostic products and packing. These symbols are the most common ones appearing on medical devices and their packing. They are explained in more detail in the European Standard EN ISO15223-1:2021.

	Manufactured By		In vitro diagnostic medical device
	No. of tests		Consult Instructions for use
	Lot Number Batch Number		Temperature Limit
	Manufacturing Date		Caution, see instruction for use
	Expiry Date		Catalogue Number
	Do not use if package is damaged		Contains biological Material of Animal Origin
	Single use only		Keep away from sunlight
	Keep Dry		Country of Manufacture



