

# VIASURE MULTIPLEX

## Dengue Serotyping Real Time PCR Detection Kit

### Pathogen and product description

**D**engue virus (DENV) is a small single-stranded RNA virus comprising mainly four distinct serotypes (DEN-1 to -4), that belong to the genus *Flavivirus* and are transmitted by *Aedes* sp. Mosquitoes. An estimated 50 million dengue infections occur annually and approximately 2.5 billion people live in dengue endemic countries. In non-endemic countries, dengue is one of the causes of febrile illness among travellers returning from tropical or subtropical areas of the Caribbean, Latin America and Asia.

After an incubation period of 4-10 days, infection by any of the four virus serotypes can produce a wide spectrum of clinical manifestations spanning asymptomatic infection, dengue fever (DH) and severe dengue, a category that includes entities previously classified as dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS).

Given the geographic expansion of DENV1-4, rapid

and accurate serotyping of DENV is crucial for dengue diagnosis and epidemiologic surveillance, treatment of patients, control of DENV outbreaks and transmission-blocking strategies targeting the vector, as well as for development of vaccines and antivirals. Thus, this two tube multiplex Real Time RT-PCR assay can be used as a method for differential diagnosis of a specific DEN serotype in viremic dengue patients during the early phase of the infection.

VIASURE Dengue Serotyping Real Time PCR Detection Kit is designed for the diagnosis and serotyping of the Dengue virus in clinical samples. The isolated RNA target is transcribed generating complementary DNA by reverse transcriptase which is followed by the amplification of a conserved region of the *NS5* gene (DEN-1), *envelope* gene (DEN-2), *prM* gene (DEN-3) and *NS2A* gene (DEN-4), using specific primers and a fluorescent-labelled probe.

#### Lyophilised product

"Ready & Easy-to-use" Kits



Long term stability.  
Transport and storage at room temperature



Shelf-life: 24 months  
(for all our qPCR products)



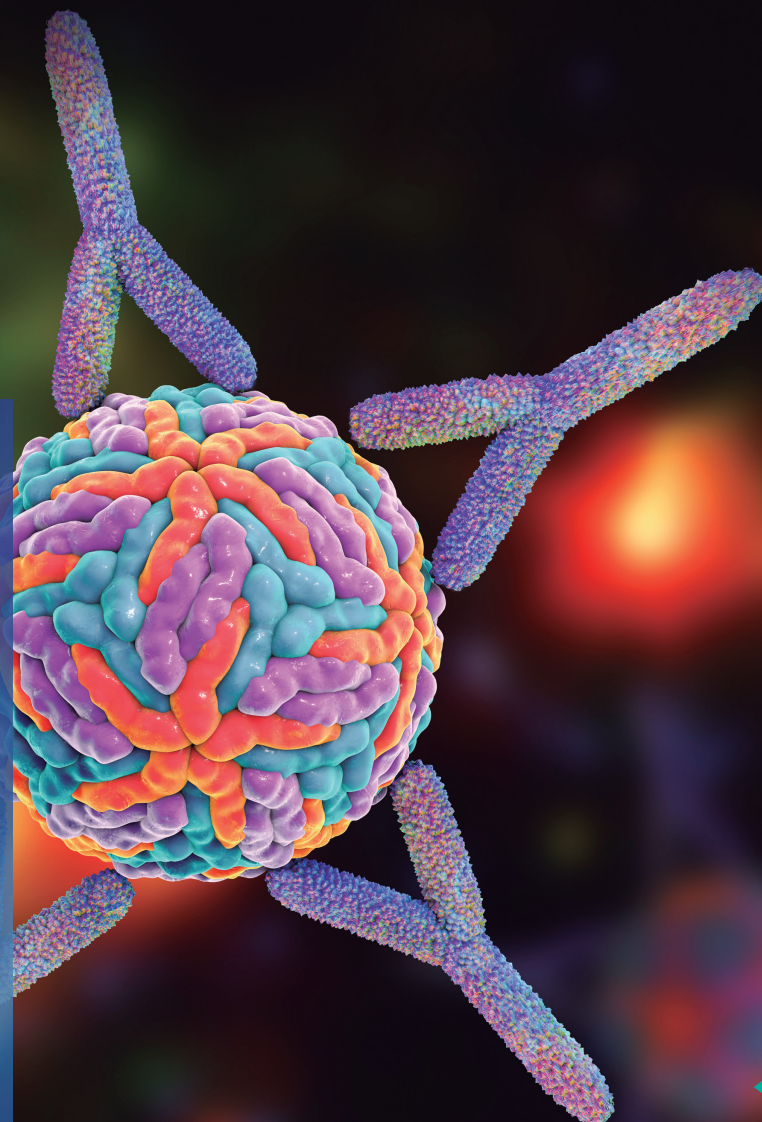
From 1 up to 96 samples per assay



High sensibility, specificity and reproducibility



Validated according to ISO 13485 and CE marked



THE REAL ONE STEP qPCR



## Analytical sensitivity

VIASURE Dengue Serotyping Real Time PCR Detection Kit has a detection limit of  $\geq 10$  RNA copies per reaction (figures 1, 2, 3 and 4).

Figure 1. Dilution series of Dengue Serotype 1 ( $10^7$ – $10^1$  copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System (Multiplex reaction mix DEN-1+DEN-4, FAM channel).

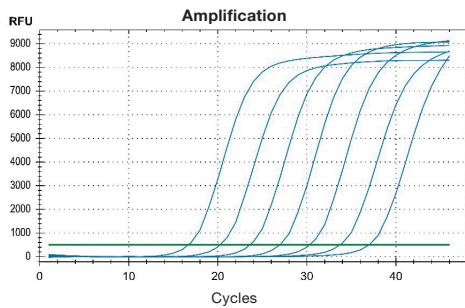


Figure 2. Dilution series of Dengue Serotype 4 ( $10^7$ – $10^1$  copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System (Multiplex reaction mix DEN-1+DEN-4, ROX channel).

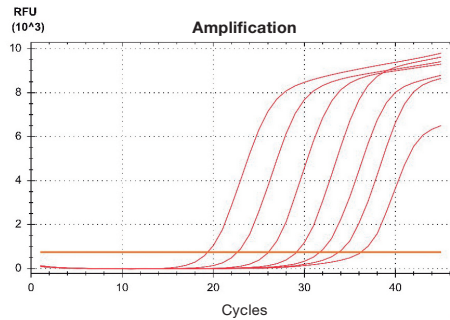
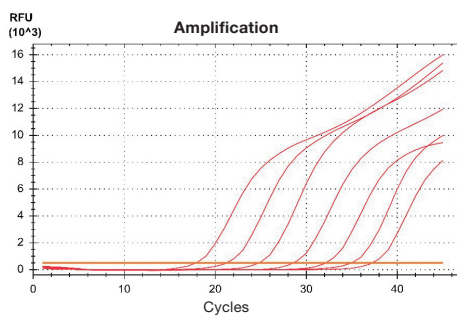


Figure 3. Dilution series of Dengue Serotype 2 ( $10^7$ – $10^1$  copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System (Multiplex reaction mix DEN-2+DEN-3, ROX channel).

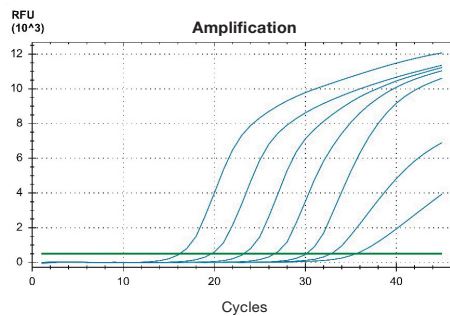


Figure 4. Dilution series of Dengue Serotype 3 ( $10^7$ – $10^1$  copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System (Multiplex reaction mix DEN-2+DEN-3, FAM channel).

## Components

Reagent/Material	Description	Quantity
Dengue serotyping 8-well strips	A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format	6/12 x 8-well strip
Dengue serotyping 96-well plate	A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format	1 plate
Rehydration Buffer	Solution to reconstitute the stabilized product	1 vial x 1,8 mL
Dengue serotyping Positive Control	Non-infectious synthetic lyophilized cDNA	1 vial
Negative Control	Non template control	1 vial x 1 mL
Water RNase/DNase free	Water RNase/DNase free	1 vial x 1 mL
Tear-off 8-cap strips	Optical caps for sealing wells during thermal cycling	6/12 x 8-cap strip
Shell Frame Grid	Shell Frame Grid	1 or 2

## Kit References

Reference	Description
VS-DES106L	Viasure Dengue serotyping Real Time PCR Detection Kit 6 x 8-well strips, low profile
VS-DES106H	Viasure Dengue serotyping Real Time PCR Detection Kit 6 x 8-well strips, high profile
VS-DES112L	Viasure Dengue serotyping Real Time PCR Detection Kit 12 x 8-well strips, low profile
VS-DES112H	Viasure Dengue serotyping Real Time PCR Detection Kit 12 x 8-well strips, high profile
VS-DES113L	Viasure Dengue serotyping Real Time PCR Detection Kit 96-well plate, low profile
VS-DES113H	Viasure Dengue serotyping Real Time PCR Detection Kit 96-well plate, high profile

## Work Flow

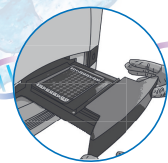
One-step rehydration of wells and add your extracted RNA



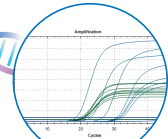
**STEP 1**  
Add 15  $\mu$ l of rehydration buffer into each well



**STEP 2**  
Add 5  $\mu$ l of RNA sample / positive control / negative control



**STEP 3**  
Load the strips into the thermocycler and run the specified protocol



**STEP 4**  
Interpretate results



CERTEST BIOTEC, S.L.  
Pol. Industrial Río Gállego II, Calle J, Nº 1,  
50840, San Mateo de Gállego, Zaragoza (SPAIN)  
www.certest.es

