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## Dengue Serotyping

- ▶ Dengue 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).

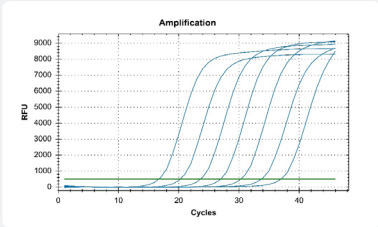
- ▶ Given the geographic expansion of DENV1-4, rapid and accurate serotyping of DENV is crucial for dengue diagnosis and epidemiologic surveillance, treatment of patients, control of DENV outbreaks and transmission-blocking strategies targeting the vector, as well as for development of vaccines and antivirals. 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.**

# Dengue Serotyping

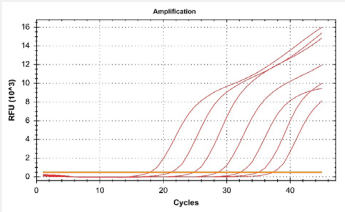
**VIASURE Dengue Serotyping Real Time PCR Detection Kit** is designed for the diagnosis and serotyping of the Dengue virus in clinical samples. The isolated RNA target is transcribed generating complementary DNA by reverse transcriptase which is followed by the amplification of a conserved region of 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.

## ► Analytical sensitivity

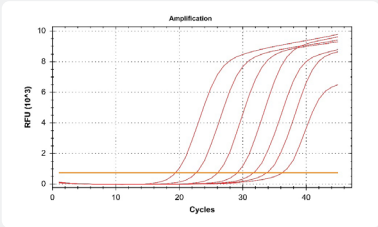
**VIASURE Dengue Serotyping Real Time PCR Detection Kit** has a detection limit of  $\geq 10$  RNA copies per reaction (Figure 1, 2, 3 and 4).



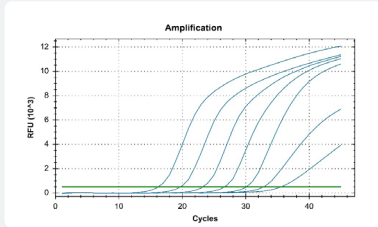
**Figure 1.**  
 Dilution series of Dengue Serotype 1 ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96TM Real-Time PCR Detection System (Multiplex reaction mix DEN-1+DEN-4, channel FAM).



**Figure 2.**  
 Dilution series of Dengue Serotype 4 ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96TM Real-Time PCR Detection System (Multiplex reaction mix DEN-1+DEN-4, channel ROX).



**Figure 3.**  
 Dilution series of Dengue Serotype 2 ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96TM Real-Time PCR Detection System (Multiplex reaction mix DEN-2+DEN-3, channel ROX).



**Figure 4.**  
 Dilution series of Dengue Serotype 3 ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96TM Real-Time PCR Detection System (Multiplex reaction mix DEN-2+DEN-3, channel FAM).

## ► References - VIASURE Dengue Serotyping Real Time PCR Detection Kit

6 x 8-well strips, low profile .....	VS-DES106L	6 x 8-well strips, high profile .....	VS-DES106H
12 x 8-well strips, low profile .....	VS-DES112L	12 x 8-well strips, high profile.....	VS-DES112H
9 x 4-well strips, Rotor-Gene®.....	VS-DES136		

For more information and use procedure,  
 read the instructions for use included in this product.



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