



Dengue Virus Detection by the BIOFIRE® FILMARRAY® Tropical Fever (TF) Panel

1. Introduction

Dengue virus is among the organisms detected by the BIOFIRE® FILMARRAY® Tropical Fever (TF) Panel. The BIOFIRE® FILMARRAY® TF Panel detects serotypes 1-4 of the dengue virus and reports a single result that does not differentiate the serotypes. The intended use of the product does not include serotype differentiation; however, there may be an interest in understanding the possible serotype for epidemiologic, non-patient care purposes.

The purpose of this technical note is to describe the BIOFIRE® FILMARRAY® TF Panel dengue virus (serotypes 1, 2, 3, and 4) assays and how they might be used to interpret the serotype for epidemiologic, non-patient care purposes.

2. Dengue Virus Assays

The BIOFIRE® FILMARRAY® TF Panel contains five assays for the detection of the four dengue virus serotypes. Although each of the DENV assays is serotype-specific by design, clinical performance has not been established for individual serotype detection. Therefore, any positive dengue virus assay(s) will result in a Detected call for dengue virus.

Table 1. Summary of Dengue Virus Assays

Assay Name*	Serotype	Assay Interpretation Rules / Result
DENV 1	1	Any Positive / Dengue virus Detected
DENV 2_1	2	
DENV 2_2		
DENV3	3	
DENV4	4	

*Note: Customers can view assay level data from the BIOFIRE® FILMARRAY® System Software or BIOFIRE® FIREWORKS™ Cloud Platform by navigating to the Run Details for a specific sample.





Table 2: Summary of Limit of Detection (LoD) for the BIOFIRE® FILMARRAY® TF Panel

Filmarray TF Panel interpretation	Isolates		Material	LoD concentration	
	Species/Serotype	Source (ID)		Copies/mL	Units/mL
Dengue virus	Serotype 1 / Hawaii	ZeptoMetrix (0810088CF)	Live	2.2E+02	NA
	Serotype 2 / New Guinea C ¹	ZeptoMetrix (0810089CF)	Live	3.4E+02	NA
	Serotype 2 / Dak AR A1247 ¹	BEI (NR-12221)	Live	2.7E+03	1.5E+02 TCID50/mL
	Serotype 3 / H87	ZeptoMetrix (0810090CF)	Live	1.3E+02	3.7E+00 units/mL
	Serotype 4 / H241	ZeptoMetrix (0810091CF)	Live	6.4E+01	1.8E+02 units/mL

¹Representative strains were used to evaluate each of the two dengue virus 2 assays.

3. Assessment of Assay Performance Across Given Serotypes

The BIOFIRE® FILMARRAY® TF Panel has been validated only for the qualitative detection of dengue virus (DENV) and not for clinical determination of dengue virus serotypes. Although the panel includes individual assays targeting dengue virus serotypes 1–4, the serotype-specific results have not been clinically validated or characterized for diagnostic accuracy. Serotype information generated by this panel is for informational purposes only and should not be used to guide patient management, prognosis, treatment decisions, or any other clinical decision-making.

Technical Support Contact Information

bioMérieux is dedicated to providing the best customer support available. If you have questions or concerns about this process, please contact your local bioMérieux representative or your authorized distributor.

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