

# VIASURE MULTIPLEX

*Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit*

## Pathogen and product description

**H**erpes simplex virus types 1 and 2 (HSV-1 and -2) and varicella-zoster virus (VZV) are alphaherpesviruses that infect, establish latency in, and subsequently reactivate from human sensory nerve ganglia. Following reactivation from latent ganglia reservoirs, each of these herpesviruses may cause significant clinical disease in the individual and may spread to uninfected persons. Symptomatic VZV reactivation is an infrequent, usually once-in-a-lifetime event that results in zoster (shingles), while HSV-1 and -2 reactivation occurs frequently and results in numerous symptomatic and asymptomatic recurrences of oral and genital herpes.

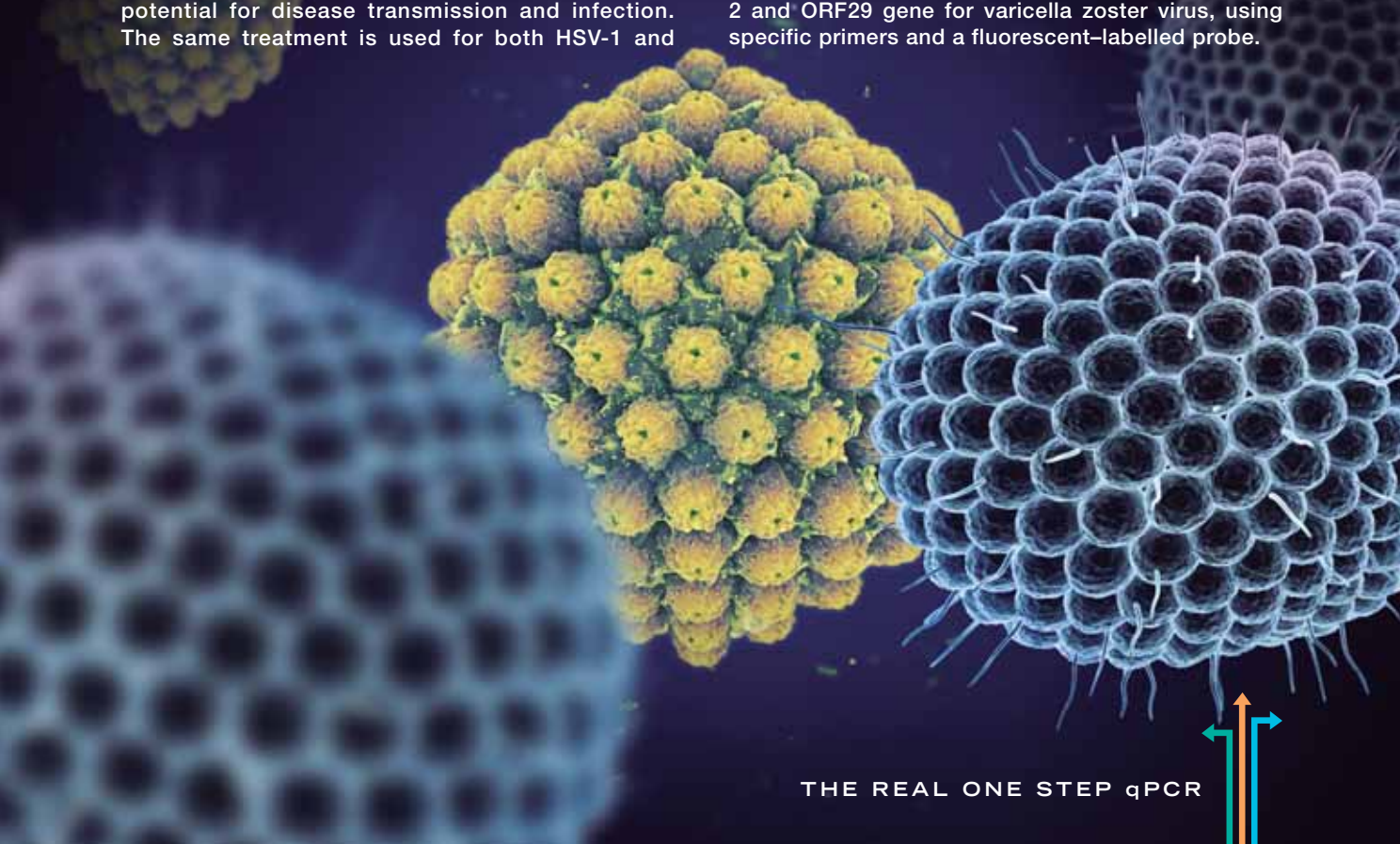
Oral infections were most often caused by HSV-1 and genital infections by HSV-2. Herpes simplex virus (HSV)-1 and -2 are large, double-stranded DNA viruses that cause lifelong persistent infections characterized by periods of quiescence and recurrent disease. These two HSV types cannot be distinguished clinically. In fact, they share a high degree of genetic homology, but they also have specific regions with small nucleotide variations which may allow discrimination. HSV-1 and HSV-2 infection occurs via inoculation of virus particles into susceptible mucosal surfaces. Afterwards, these neurotropic viruses can become latent in the local sensory ganglion, periodically reactivating to cause symptomatic lesions, or undergo asymptomatic viral release, with the potential for disease transmission and infection. The same treatment is used for both HSV-1 and

HSV-2 infections, the location of the lesions and the chronicity of the infection (primary or recurrent) determine dosage and frequency.

Varicella-zoster virus (VZV) is a member of the Herpesviridae family and causes chickenpox (varicella) and herpes zoster (shingles). Chickenpox is highly contagious and causes acute infection. This disease is characterized by a dermal vesiculopustular rash that develops 10–21 days following exposure. Primary infection with VZV results in immunity from subsequent infection; VZV remains latent within sensory neurons and may subsequently reactivate, causing disease (herpes zoster). Herpes zoster is a painful condition that occurs in older non-immune adults or those with waning immunity to VZV and in patients with impaired cellular immunity.

To shorten detection time and improve sensitivity, real-time PCR assays have proven to be a tool for the detection of Herpes simplex virus types 1 and 2 and Varicella-zoster virus.

VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit is designed for the diagnosis of herpes simplex virus types 1 and 2 and varicella zoster virus in clinical samples. After DNA isolation, the identification of herpes simplex virus types 1 and 2 and varicella zoster virus is performed by the amplification of a conserved region of the US4 gene for herpes simplex virus types 1, US6 gene for herpes simplex virus types 2 and ORF29 gene for varicella zoster virus, using specific primers and a fluorescent-labelled probe.



## Analytical sensitivity

**VIASURE** Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit has a detection limit of  $\geq 10$  DNA copies per reaction for herpes simplex virus types 1 and 2 and varicella zoster virus (Figure 1, 2 and 3).

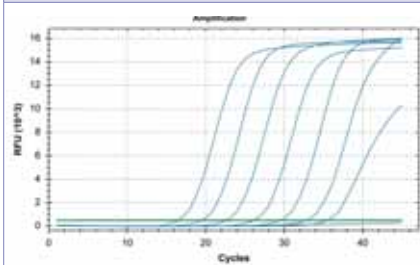


Figure 1. Dilution series of herpes simplex virus type 1 ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (channel FAM).

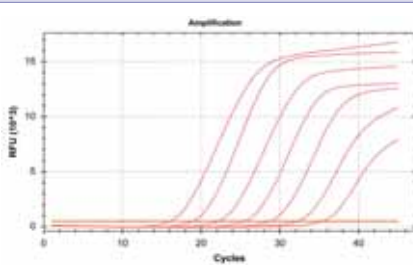


Figure 2. Dilution series of herpes simplex virus type 2 ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (channel ROX).

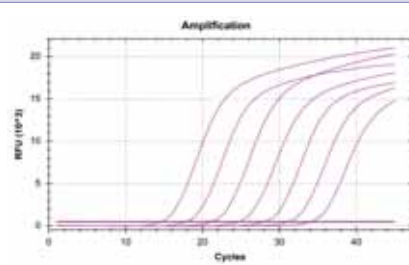


Figure 3. Dilution series of varicella zoster virus ( $10^7$ - $10^1$  copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (channel Cy5).

## Components

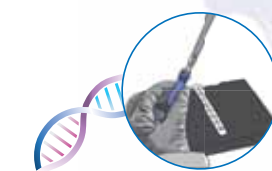
Reagent/Material	Description	Colour	Quantity
Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus 8-well strips	A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format	White	6/12 x 8-well strip
Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus 96-well plate	A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format	White	1 plate
Rehydration Buffer	Solution to reconstitute the stabilized product	Blue	1 vial x 1,8 mL
Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Positive Control	Non-infectious synthetic lyophilized cDNA	Red	1 vial
Negative Control	Non template control	Violet	1 vial x 1 mL
Water RNase/DNase free	RNase/DNase free water	White	1 vial x 1 mL
Tear-off 8-cap strips	Optical caps for sealing wells during thermal cycling	Transparent	6/12 x 8-cap strip

## Kit References

Reference	Description
VS-HHZ106L	VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit 6 x 8-well strips, low profile
VS-HHZ106H	VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit 6 x 8-well strips, high profile
VS-HHZ112L	VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit 12 x 8-well strips, low profile
VS-HHZ112H	VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit 12 x 8-well strips, high profile
VS-HHZ113L	VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit 96-well plate, low profile
VS-HHZ113H	VIASURE Herpes virus 1, Herpes virus 2 & Varicella Zoster Virus Real Time PCR Detection Kit 96-well plate, high profile

## Work Flow

One-step rehydration of wells and add your extracted DNA



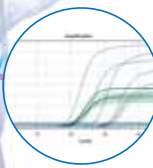
**STEP 1**  
Add 15  $\mu$ l of rehydration buffer into each well



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



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



**STEP 4**  
Interpretate results