



## Herpes virus detection using the QIAcuity High Multiplex Probe PCR Kit



Human herpesviruses (HHVs) encompass a diverse group of pathogens, including HSV-1/2, HHV-3, HHV-4, HHV-5, HHV-6A/B, HHV-7 and HHV-8. These are associated with a range of diseases from mild to severe. HSV-1 and HSV-2 primarily cause oral and genital lesions, respectively. HHV-3, also known as varicella-zoster virus, leads to chickenpox and shingles. HHV-4, or Epstein-Barr virus, is linked to infectious mononucleosis and certain cancers. HHV-5, or cytomegalovirus, poses significant risks to immunocompromised individuals and neonates. HHV-6A/B and HHV-7 are implicated in roseola infantum, whereas HHV-8 is associated with Kaposi's sarcoma.

The QIAcuity Digital PCR System (RUO) is highly sensitive, specific and able to simultaneously analyze targets through multiplex reactions. Multiplexed

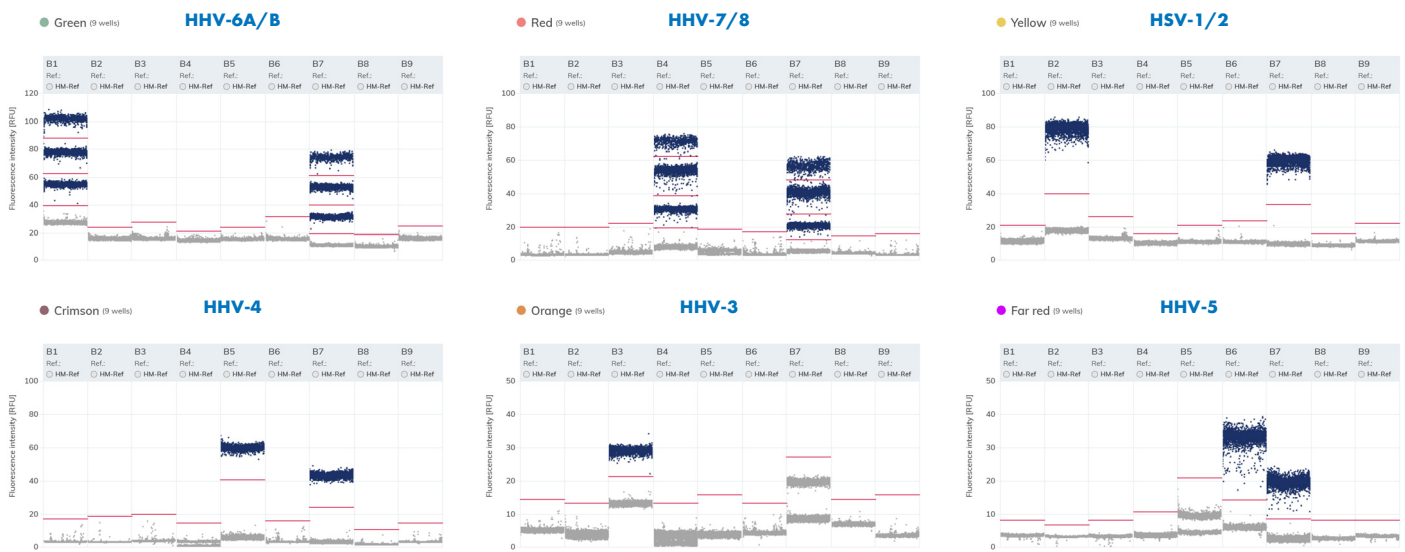
dPCR conserves precious sample, minimizes technical errors and provides simultaneous results on viral presence and interactions, enhancing the quality and efficiency of virological studies. This assay bundle uses amplitude-based multiplexing to detect eight HHVs within a single reaction. By adjusting the final concentrations of assays, multiple targets can be distinguished within the same optical channel.

### 8-plex herpes assay:

Product	GeneGlobe ID	Dye	Assay Conc.
Human betaherpesvirus 6A	DMA00837	FAM*	0.65x
Human betaherpesvirus 6B	DMA00838	FAM*	1x
Human herpesvirus 1 and 2	DMA00726	HEX	1x
Human alphaherpesvirus 3	DMA00728	TAMRA	1x
Human betaherpesvirus 7	DMA00839	ROX*	0.55x
Human gammaherpesvirus 8	DMA00836	ROX*	1x
Human gammaherpesvirus 4	DMA00840	Cy5	1x
Human betaherpesvirus 5	DMA00835	ATTO700	2x

\*Amplitude-based multiplexing

For Research Use Only. Not for use in diagnostic procedures.



**Figure 1. Detect eight herpesvirus strains with high confidence in a single reaction.**

The QIAcuity High Multiplex Probe PCR Kit combined with the QIAcuity Software Suite 3.1 provide significant benefits to virus detection. An 8-plex reaction with assays for the different herpes viruses was assembled and tested with individual synthetic target DNAs or a pool of all eight synthetic target DNAs on an 8.5k nanoplate (QIAGEN). The 8-plex assays specifically detected each HHV target, both when tested individually and within an 8-DNA pool. The non-template control (NTC) and non-assay control (NAC) were clearly negative. Amplitude-based multiplexing was used to detect two targets in the green channel and two targets in the red channel. For these channels, multiple thresholds (red lines) could be set clearly between the clusters of signal. Imaging settings were adjusted to increase fluorescence intensities. The custom crosstalk matrix was applied.

Product	1-plex	2-plex	8-plex
HHV-6A		1191	1257
HHV-6B		1144	1187
HSV 1 and 2	1157		1208
HHV-3	1286		1334
HHV-7		1264	1356
HHV-8		1080	1163
HHV-4	1432		1497
HHV-5	1315		1357

**Table 1. High quantification accuracy in singleplex, duplex and 8-plex reactions.**

Absolute quantifications (copies/ $\mu$ L) measured on the QIAcuity Software Suite 3.1 for singleplex, duplex and 8-plex are comparable.



For more and ordering information please visit: [geneglobe.qiagen.com](https://geneglobe.qiagen.com)

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