

## Technical Data Sheet:

# Quantitative Synthetic Influenza B Virus (Victoria Lineage) RNA

<b>ATCC® Number</b>	VR-3384SD™
<b>Product Description</b>	Quantitative Synthetic Influenza B Virus RNA is a synthetically derived preparation that can be used for assay development, verification, and validation as well as monitoring of day-to-day test variation and lot-to-lot performance of molecular-based assays. The quantitative format allows for the generation of a standard curve for quantitative PCR (qPCR) to determine viral load.
<b>Genetic Target</b>	<p>The synthetic RNA preparation includes two constructs. One construct includes the full genes for the HA and NP regions. The other construct includes the full genes for the NA, M1/M2, and NEP/NS1 regions.</p> <p>This product is based on the B/Malaysia/2506/2004 (Victoria lineage) influenza virus sequence with few modifications to accommodate manufacturing and product compatibility with diagnostically relevant assays.</p>

Publication	Assay Target	Oligo	Sequence (5' to 3')	Number of mismatches with ATCC® VR-3384SD™ based on <i>in silico</i> analysis
World Health Organization. WHO information for the molecular detection of influenza viruses. Publish date: February 2021.	HA	Forward	AAATACGGTGGATTAAACAAAAGCAA	0
		Reverse	CCAGCAATAGCTCCGAAGAAA	0
		Probe	CACCCATATTGGGCAATTCCTATGGC	0
World Health Organization. WHO information for the molecular detection of influenza viruses. Publish date: February 2021.	HA	Forward	ACATACCCTCGGCAAGAGTTTC	0
		Reverse	TGCTGTTTTGTTGTTGTCGTTTT	0

World Health Organization. WHO information for the molecular detection of influenza viruses. Publish date: February 2021.	HA	Forward	CCTGTTACATCTGGGTGCTTTCCTATAATG	0
		Reverse	GTTGATARCCTGATATGTTCTGATCCTCKG	0
		Probe	TTAGACAGCTGCCTAACC	0
World Health Organization. WHO information for the molecular detection of influenza viruses. Publish date: February 2021.	HA	Forward	ACCCTACARAMTTGGAACYTCAGG	0
		Reverse	ACAGCCCAAGCCATTGTTG	0
		Probe	ATCCGTTTCCATTGGTAA	0
Leong NKC, et al. A six-plex droplet digital RT-PCR assay for seasonal influenza virus typing, subtyping, and lineage determination. Influenza Other Respir Viruses 14(6): 720-729, 2020. PubMed: <a href="#">32519796</a>	HA	Forward	AGGRGAAGACCAAATTACYGTTTG	0
		Reverse	CRTTRGCAGATGAGGTGAACTT	0
		Probe	YARCGAGRYCCAAATGGHAARSCTCTATG	0
Tewawong N, et al. Lineage-specific detection of influenza B virus using real-time polymerase chain reaction with melting curve analysis. Arch Virol 161(6): 1425-1435, 2016. PubMed: <a href="#">26923928</a>	HA	Forward	TCTTCGCAACAATGGCTTGGGC	0
		Reverse	CTTCTTCTTCTGYACAAATGTATGG	1
Tewawong N, et al. Lineage-specific detection of influenza B virus using real-time polymerase chain reaction with melting curve analysis. Arch Virol 161(6): 1425-1435, 2016. PubMed: <a href="#">26923928</a>	HA	Forward	TCTTCGCAACAATGGCTTGGGC	0
		Reverse	CTTCTTCTTCTGYACAAATGTATGG	1
Van Elden LJ, et al. Simultaneous detection of influenza viruses A and B using real-time quantitative PCR. J Clin Microbiol 39(1): 196-200, 2001. PubMed: <a href="#">11136770</a>	HA	Forward	AAATACGGTGGATTAAATAAAAGCAA	1
		Reverse	CCAGCAATAGCTCCGAAGAAA	0
		Probe	CACCCATATTGGGCAATTCCTATGGC	0
Lee HK, et al. A universal influenza A and B duplex real-time RT-PCR assay. J Med Virol 84(10): 1646-1651, 2012. PubMed: <a href="#">22930514</a>	NP	Forward	CCAGGGATTGCAGACATTGA	0
		Reverse	ACAGGTGTTGCCATATTGTAAAGAG	0
		Probe	TTGTTAGGCCCTCTGTGGCRAGCA	0
Yang Y, et al. Simultaneous typing and HA/NA subtyping of influenza A and B viruses including the pandemic influenza A/H1N1 2009 by multiplex real-time RT-PCR. J Virol Methods 167(1): 37-44, 2010. PubMed: <a href="#">20304017</a>	NP	Forward	AAGACCTRAGAGTTTTGTCTGCAYT	0
		Reverse	ATCAGAGCTGCYCCCATTC	0
		Probe	TGCAAGGGTTTCCAYGTTCCAGCA	0
Leong NKC, et al. A six-plex droplet digital RT-PCR assay for seasonal influenza virus typing, subtyping, and lineage determination. Influenza Other Respir Viruses 14(6): 720-729, 2020. PubMed: <a href="#">32519796</a>	M	Forward	GAGACACAATTGCCTACYTGCTT	0
		Reverse	CAAATTCTTCCCACCRAACCAAC	0
		Probe	AGAAGATGGAGAAGGCAAAGCAGAACTAGC	0

Suwannakarn K, et al. Typing (A/B) and subtyping (H1/H3/H5) of influenza A viruses by multiplex real-time RT-PCR assays. J Virol Methods 152(1-2): 25-31, 2008. PubMed: <a href="#">18598722</a>	M	Forward	CTCTGTGCTTTRTGCGARAAAC	0
		Reverse	CCTTCYCCATTCTTTTGACTIONGC	0
		Probe	TCAG+CA+AT+G+AA+CACAGCAA	0
Ward CL, et al. Design and performance testing of quantitative real time PCR assays for influenza A and B viral load measurement. J Clin Virol 29(3): 179-188, 2004. PubMed: <a href="#">14962787</a>	M	Forward	GAGACACAATTGCCTACCTGCTT	0
		Reverse	TTCTTTCCCACCGAACCAAC	1
		Probe	AGAAGATGGAGAAGGCAAAGCAGAACTAGC	0
World Health Organization. WHO information for the molecular detection of influenza viruses. Publish date: February 2021.	NA	Forward	GCACTCCTAATTAGCCCTCATAGA	0
		Reverse	TAAGGACAATTGTTCAAAC	0
Centers for Disease Control and Prevention (U.S.); National Center for Immunization and Respiratory Diseases (U.S.). Influenza Division. Virology Surveillance and Diagnosis Branch. Genomics and Diagnostics Team. Research Use Only CDC Influenza SARS-CoV-2 (Flu SC2) Multiplex Assay Real-Time RT-PCR Primers and Probes. Publish date: July 14, 2020.	NS1	Forward	TCCTCAAYTCACTCTTCGAGCG	0
		Reverse	CGGTGCTCTTGACCAAATTGG	0
		Probe	CCAATTGAGCAGCTGAAACTGCGGTG	0
World Health Organization. WHO information for the molecular detection of influenza viruses. Publish date: February 2021.	NS1	Forward	GGAGCAACCAATGCCAC	0
		Reverse	GKTAGGCGGTCTTGACCAG	0
		Probe	ATAAACTTYGAAGCAGGAAT	0
Selvaraju SB, Selvarangan R. Evaluation of three influenza A and B real-time reverse transcription-PCR assays and a new 2009 H1N1 assay for detection of influenza viruses. J Clin Microbiol 48(11): 3870-3875, 2010. PubMed: <a href="#">20844230</a>	NS1	Forward	TCCTCAACTCACTCTTCGAGCG	0
		Reverse	CGGTGCTCTTGACCAAATTGG	0
		Probe	CCAATTGAGCAGCTGAAACTGCGGTG	0