

Table S1. Primers used in this study

Virus	Target	Primer	Sequence (5' - 3')	Annealing temperature	Amplicon size (bp)	Reference
IBRV	gB	BoHV-F BoHV-R	TGTGGACCTAAACCTCACGGT GTAGTCGAGCAGACCCGTGTC	60°C	97	1
PrV	gB	PRV-gB718F PRV-gB812R	ACAAGTTCAAGGCCACATCTAC GTCYGTGAAGCGGTTCTGTAT	62 °C	94	2
CHV-1	gB	CHV-For CHV-Rev	ACAGAGTTGATTGATAGAAGAGGTATG CTGGTGTATTAAACTTTGAAGGCTTTA	60°C	136	3
EHV-1	gB	FC3 R1	ATACGATCACATCCAATCCC GCGTTATAGCTATCACGTCC	60°C	188	4
BAdV-7	DNA polymerase	BAdV-7-F BAdV-7-R	GCGTTTTGGACAACACTTCA TGGTTCATTGCAACCAAAA	52 °C	200	This study
CPV-2	VP2	CPV-F CPV-R	TGGAAGTGTGGCACACCAA AAATGGTGGTAAGCCCAATG	56 °C	200	5
BPIV-3	MP	BPI3F BPI3R	TGTCTTCCAATAGATAGAGGGATAAAATT GCAATGATAACAATGCCATGGA	60°C	111	6
BRSV	NP	BRSV-F BRSV-R	GGTCAAATAAATGACACTTTCAACAAG AGCATACCACACAACCTTATTGAGATG	60°C	137	1
CDV	NP	CDV-N-For CDV-N-Rev	ACCGGAAATCGATGGAAGC GTCCCAGGTTGACTGAGCATCT	56 °C	67	7
NDV	NP	Pla-rt13 Pla-rt14	CAACAATAGGAGTGGAGTGTCTGA CAGGGTATCGGTGATGTCTTCT	55 °C	145	8
VSV	L	VSNJV-F VSNJV-R	TGATTCAATATAATTATTTTGGGAC AGGCTCAGAGGCATGTTTCAT	52 °C	266	9
SARS-CoV-2	N	nCOV_N_F2 nCOV_N_R2	AAATTTTGGGGACCAGGAAC TGGCAGCTGTGTAGGTCAAC	55 °C	158	10
BCoV	N	BCoV-N-F BCoV-N-R	TTCTCAGCAACCATCAGGAG ACCCCTTAGCTTCAGTAGCC	60 °C	149	This study
SwIV	M1	IAV-M1-F IAV-M1.2-R	AGATGAGTCTTCTAACCGAGGTCG TGCAAAGACACTTCCAGTCTCTG	60°C	99	11
EqIV	NP	EIV-NP-For EIV-NP-Rev	GAAGGGCGGCTGATTGAGA TTCGTGCAATGCCGAAAGTAC	58 °C	63	12
BVDV-I & BVDV-II	5'-UTR	324 326	ATGCCCWTAGTAGGACTAGCA TCAACTCCATGTGCCATGTAC	55 °C	288	13
BRBV	P3	BRBV-Pol-F BRBV-Pol-R	CTACGGTGTTCCTCGTCCAA TTGCCAAGAACATTGTGAAGA	56°C	195	This study
FCV	RNA polymerase	FCV-RT-F FCV-RT-R	GATGTTAGGGGCATTCCAGA AGTGCCGCATCAATTGACAT	60°C	155	This study
BRoV	VP6	BRoV-G6- BRoV-G6-	CGTAACTACGTCGAAACAGC AGTTCAGTTCCTATGTATTCCG	60 °C	200	This study
BuORV	L2	Pyc-L2- F1 Pyc-L2 -R1	TCTATCCGAAGATCCGTG ACAGAAGAGTCGAGTAACAGC	58 °C	146	This study

References

1. Thonur, L.; Maley, M.; Gilray, J.; Crook, T.; Laming, E.; Turnbull, D.; Nath, M.; Willoughby, K. One-step multiplex real time RT-PCR for the detection of bovine respiratory syncytial virus, bovine herpesvirus 1 and bovine parainfluenza virus 3. *BMC Vet. Res.* **2012**, *8*, 37. <https://doi.org/10.1186/1746-6148-8-37>.
2. Ma, W.; Lager, K.M.; Richt, J.A.; Stoffregen, W.C.; Zhou, F.; Yoon, K.J. Development of real-time polymerase chain reaction assays for rapid detection and differentiation of wild-type pseudorabies and gene-deleted vaccine viruses. *J. Vet. Diagn. Invest.* **2008**, *20*, 440-447. <https://doi.org/10.1177/104063870802000405>.
3. Decaro, N.; Amorisco, F.; Desario, C.; Lorusso, E.; Camero, M.; Bellacicco, A.L.; Sciarretta, R.; Lucente, M.S.; Martella, V.; Buonavoglia, C. Development and validation of a real-time PCR assay for specific and sensitive detection of canid herpesvirus 1. *J. Virol. Methods* **2010**, *169*, 176-180. <https://doi.org/10.1016/j.jviromet.2010.07.021>.
4. Kirisawa, R.; Endo, A.; Iwai, H.; Kawakami, Y. Detection and identification of equine herpesvirus-1 and -4 by polymerase chain reaction. *Vet. Microbiol.* **1993**, *36*, 57-67. [https://doi.org/10.1016/0378-1135\(93\)90128-t](https://doi.org/10.1016/0378-1135(93)90128-t).
5. Streck, A.F.; Rüster, D.; Truyen, U.; Homeier, T. An updated TaqMan real-time PCR for canine and feline parvoviruses. *J. Virol. Methods* **2013**, *193*, 6-8. <https://doi.org/10.1016/j.jviromet.2013.04.025>.
6. Horwood, P.F.; Mahony, T.J. Multiplex real-time RT-PCR detection of three viruses associated with the bovine respiratory disease complex. *J. Virol. Methods* **2011**, *171*, 360-363. <https://doi.org/10.1016/j.jviromet.2010.11.020>.
7. Coleman, J.W.; Wright, K.J.; Wallace, O.L.; Sharma, P.; Arendt, H.; Martinez, J.; DeStefano, J.; Zamb, T.P.; Zhang, X.; Parks, C.L. Development of a duplex real-time RT-qPCR assay to monitor genome replication, gene expression and gene insert stability during in vivo replication of a prototype live attenuated canine distemper virus vector encoding SIV gag. *J. Virol. Methods* **2015**, *213*, 26-37. <https://doi.org/10.1016/j.jviromet.2014.11.015>.
8. Qiu, X.; Yu, Y.; Yu, S.; Zhan, Y.; Wei, N.; Song, C.; Sun, Y.; Tan, L.; Ding, C. Development of strand-specific real-time RT-PCR to distinguish viral RNAs during Newcastle disease virus infection. *Scientific World J.* **2014**, *2014*, 934851. <https://doi.org/10.1155/2014/934851>.
9. Hole, K.; Velazquez-Salinas, L.; Clavijo, A. Improvement and optimization of a multiplex real-time reverse transcription polymerase chain reaction assay for the detection and typing of Vesicular stomatitis virus. *J. Vet. Diagn. Invest.* **2010**, *22*, 428-433. <https://doi.org/10.1177/104063871002200315>.
10. Shirato, K.; Nao, N.; Katano, H.; Takayama, I.; Saito, S.; Kato, F.; Katoh, H.; Sakata, M.; Nakatsu, Y.; Mori, Y.; Kageyama, T.; Matsuyama, S.; Takeda, M. Development of genetic diagnostic methods for detection for novel coronavirus 2019 (nCoV-2019) in Japan. *Jpn. J. Infect. Dis.* **2020**, *73*, 304-307. <https://doi.org/10.7883/yoken.JJID.2020.061>.
11. Hoffmann, B.; Harder, T.; Lange, E.; Kalthoff, D.; Reimann, I.; Grund, C.; Oehme, R.; Vahlenkamp, T.W.; Beer, M. New real-time reverse transcriptase polymerase chain reactions facilitate detection and differentiation of novel A/H1N1 influenza virus in porcine and human samples. *Berl. Munch. Tierarztl. Wochenschr.* **2010**, *123*, 286-292. <https://doi.org/10.2376/0005-9366-123-286>.
12. Lu, Z.; Dubovi, E.J.; Zyllich, N.C.; Crawford, P.C.; Sells, S.; Go, Y.Y.; Loynachan, A.T.; Timoney, P.J.; Chambers, T.M.; Balasuriya, U.B. Diagnostic application of H3N8-specific equine influenza real-time reverse transcription polymerase chain reaction assays for the detection of Canine influenza virus in clinical specimens. *J. Vet. Diagn. Invest.* **2010**, *22*, 942-945. <https://doi.org/10.1177/104063871002200614>.
13. Vilcek, S.; Herring, A.J.; Herring, J.A.; Nettleton, P.F.; Lowings, J.P.; Paton, D.J. Pestiviruses isolated from pigs, cattle and sheep can be allocated into at least three genogroups using polymerase chain reaction and restriction endonuclease analysis. *Arch. Virol.* **1994**, *136*, 309-323. <https://doi.org/10.1007/BF01321060>.