

Infection with Possible Novel Parapoxvirus in Horse, Finland, 2013

Technical Appendix

Technical Appendix Table. Summary of PCR results on a sample from a horse, Finland, 2013*

Virus target	Gene target	Oligos	Oligo sequence, 5'→3'	Result	Comments	Reference
Primers that gave a product:						
PPVs	VACV-Cop F13L (envelope phospholipase)	PPP-1	5'-GTCGTCCACGATGAGCAGCT-3'	Product shows similarity to parapoxviruses	Amplifies all known parapoxviruses	(1)
		PPP-4	5'-TACGTGGGAAGCGCCTCGCT-3'			
Pan-poxvirus PCR, high GC content	VACV-Cop J6R (RNA polymerase)	Pan-pox high-GC For	5'-catcccaaggagaccaacgag-3'	Product shows similarity to parapoxviruses	Amplifies poxvirus genomes with G+C content >60%, including the parapoxviruses, molluscum contagiosum virus and crocodilepox virus	(2)
		Pan-pox high-GC Rev	5'-TCCTCGTCGCCGTCGAAGTC-3'			
Primers that did not give a product:						
Orthopoxviruses	VACV-Cop-A56R (Hemagglutinin)	PoxHA1.1	5'-GTGATGATGCAACTCTATCATG-3'	No product	Amplifies all orthopoxviruses including cowpox virus, vaccinia virus, and smallpox virus	(3)
		PoxHA1.2	5'-TGTAAGTAGATCATCGTATGGAGA-3'	No product	Amplifies all orthopoxviruses including cowpox virus, vaccinia virus, and smallpox virus	(3)
		Pox FL (anchor probe)	5'-CTAAAAGAATAATGGAATTGGGCTCC-f-3'	No product	Amplifies all orthopoxviruses including cowpox virus, vaccinia virus, and smallpox virus	(3)
		Pox Red640 (sensor probe)	5'-LCRed640-ATACCAAGCACTCATAACAACATAATCATTTATATAT-p-3'	No product	Amplifies all orthopoxviruses including cowpox virus, vaccinia virus, and smallpox virus	(3)
ChPV low GC content	VACV-Cop G1L (metalloprotease gene)	Pan-pox low-GC For Pan-pox low-GC Rev	5'-ACACCAAAAACACTCATATAACTTCT-3' 5'-CCTATTTTACTCCTTAGTAAATGAT-3'	No product	Amplifies all orthopoxviruses including	(2)

Virus target	Gene target	Oligos	Oligo sequence, 5'→3'	Result	Comments	Reference
ORFV	ORFV117, GIF gene (GM-CSF inhibitory factor gene)	GIFF1 GIFR1	5'-TCAGAGTGTTCCTGGCGGTGCTC-3' 5'-GTAGAACGTGCTGGAGAAACT-3'	No product	cowpox virus, vaccinia virus, and smallpox virus Amplifies products from orf virus and pseudocowpox virus	(4)
BPSV	BPSV117, GIF gene (GM-CSF inhibitory factor gene)	BPSGIF-5' BPSGIF-3'	5'-ACACGCCATGCAGCGTGCCTGCGC-3' 5'-GGATTATCACTGTCCGGTGGTCATC-3'	No product	Amplifies bovine papular stomatitis virus	(4)
PCPV	PCPV001, 001.3 (IL-10 ortholog)	PCPV-5' PCPV-3'	5'-GGTACACCGGCGAGAGCA-3' 5'-CATGGACCGGACGTAAGA-3'	No product	Amplifies region specific to pseudocowpox virus containing IL-10 ortholog gene	This report
ChPV	VACV-Cop A3L (major core protein)	A3LFor1 A3LRev3	5'-CNTCHACNMABRAYTGG-3' 5'-TGYTCYTCRTCNGHCAT-3'	No product	Degenerate primers, had previously amplified a product from a Spanish red squirrel poxvirus, distinct from the UK SQPV	(5)
ChPV [†]	VACV-Cop F10L (serine protein kinase)	F10LF958 F10LR1167	5'-GAYYTNAARCCNGAYAA-3' 5'-AARTGRAARTCRTARWACCA-3'	No product	Degenerate primers, had previously amplified a product from a Canadian red squirrel poxvirus, distinct from the UK SQPV	(6)
OPV, CPV ChPV [†]	VACV-Cop F10L (serine protein kinase)	F10LF296 F10LR1167	5'-GGAGGATATGGTATAGT 5'-AARTGRAARTCRTARWACCA-3'	No product	Had previously amplified a product from a Canadian red squirrel poxvirus, distinct from the UK SQPV	(6)
PPV, LPV	VACV-Cop F9L, F10L (intergenic region between serine protein kinase and lipid membrane protein gene)	CanSPVF9/10 For CanSPVF9/10 Rev	5'-TTBAGGATCTGYAMCAGGATGT-3' 5'-GGTAYTACGAYTTYCACTTCTT-3'	No product	Degenerate primers, had previously amplified a product from a Spanish red squirrel poxvirus, distinct from the UK SQPV	(5)
OPV, CPV	VACV-Cop E9L (DNA polymerase)	PanpolFor1 PanpolRev1	5'-AARTTTCCTTCYGTWTTT-3' 5'-ATAGAATCYAAYTTRTA-3'	No product	Degenerate primers	This report

[†]PPV, parapoxvirus; ChPV, *Chordopoxvirinae*; ORFV, orf virus; BPSV, bovine papular stomatitis virus; PCPV, pseudocowpox virus; OPV, orthopoxvirus; CPV, capripoxvirus; LPV, leporipoxvirus.



Technical Appendix Figure. A horse infected with a possible novel parapoxvirus in Finland, 2013, showed chronic weight loss, scrotal and ventral edema, and proliferative dermatitis.

References

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