

CPXV knockout-library

Consecutive number	<input type="text" value="0"/>
Corresponding mutant BAC	<input type="text" value="pBRFseR (parental)"/>
No of ORF	<input type="text" value="-"/>
Gene in Genbank	<input type="text" value="-"/>
Gene at PBR	<input type="text" value="-"/>
VACV-COP homologs	<input type="text" value="-"/>
Protein function	<input type="text" value="-"/>
Plaques upon transfection (expression)	<input type="text" value="early & late"/>
Result of passages	<input type="text" value="virus progeny"/>
Result for mutant	<input type="text"/>
Kinetic in VACV-WR	<input type="text"/>
Incorporated in VACV-WR virion	<input type="text"/>
Length of protein	<input type="text"/>

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=24155400%2021314965>

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	<input type="text" value="1"/>
Corresponding mutant BAC	<input type="text"/>
No of ORF	<input type="text" value="001"/>
Gene in Genbank	<input type="text" value="CPXV001"/>
Gene at PBR	<input type="text" value="CPXV-BR-001"/>
VACV-COP homologs	<input type="text"/>
Protein function	<input type="text" value="Unknown"/>
Plaques upon transfection (expression)	<input type="text" value="nd"/>
Result of passages	<input type="text" value="nd"/>
Result for mutant	<input type="text" value="nd"/>
Kinetic in VACV-WR	<input type="text"/>
Incorporated in VACV-WR virion	<input type="text" value="nd"/>
Length of protein	<input type="text" value="64 aa"/>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

Link in Pubmed	<input type="text"/>
Link Gene in PBR	<input type="text" value="http://www.poxvirus.org/gene_detail.asp?gene_id=0041700"/>
Link gene group in PBR	<input type="text" value="http://www.poxvirus.org/gene_group.asp?ortholog_group_id=771"/>
Genbank file	<input type="text"/>
Sequencing data	<input type="text"/>

CPXV knockout-library

Consecutive number	<input type="text" value="2"/>
Corresponding mutant BAC	<input type="text"/>
No of ORF	<input type="text" value="002"/>
Gene in Genbank	<input type="text" value="CPXV002"/>
Gene at PBR	<input type="text" value="CPXV-BR-002"/>
VACV-COP homologs	<input type="text"/>
Protein function	<input type="text" value="Unknown"/>
Plaques upon transfection (expression)	<input type="text" value="nd"/>
Result of passages	<input type="text" value="nd"/>
Result for mutant	<input type="text" value="nd"/>
Kinetic in VACV-WR	<input type="text"/>
Incorporated in VACV-WR virion	<input type="text" value="nd"/>
Length of protein	<input type="text" value="65 aa"/>

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041701

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=772

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	<input type="text" value="63%"/>
VACV-Cop	<input type="text" value="43%"/>
VACV-MVA	<input type="text"/>
HSPV	<input type="text" value="63%"/>
RPXV	<input type="text" value="63%"/>
VARV	<input type="text" value="63%"/>
CMLV	<input type="text" value="63%"/>
ECTV	<input type="text" value="95%"/>
MPXV	<input type="text" value="63%"/>
TATV	<input type="text" value="43%"/>

Chordopoxvirinae

CNPV	<input type="text" value="38%"/>
FWPV	<input type="text" value="46%"/>
LSDV	<input type="text" value="44%"/>
MYXV	<input type="text"/>
MOCV	<input type="text"/>
ORFV	<input type="text"/>
SWPV	<input type="text" value="44%"/>
TANV	<input type="text" value="43%"/>

CPXV knockout-library

Consecutive number	3
Corresponding mutant BAC	
No of ORF	003
Gene in Genbank	CPXV003
Gene at PBR	CPXV-BR-003
VACV-COP homologs	C23L; B29R; A41L
Protein function	Chemokine binding protein
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	246 aa

Homology to orthologs in

Orthopoxviruses

VACV	89%
VACV-Cop	
VACV-MVA	45%
HSPV	94%
RPXV	89%
VARV	87%
CMLV	87%
ECTV	90%
MPXV	93%
TATV	45%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	53%
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041702

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=557

Genbank file

Sequencing data

CPXV knockout-library

Consecutive number	<input type="text" value="4"/>
Corresponding mutant BAC	<input type="text"/>
No of ORF	<input type="text" value="004"/>
Gene in Genbank	<input type="text" value="CPXV004"/>
Gene at PBR	<input type="text" value="CPXV-BR-004"/>
VACV-COP homologs	<input type="text"/>
Protein function	<input type="text" value="Unknown"/>
Plaques upon transfection (expression)	<input type="text" value="nd"/>
Result of passages	<input type="text" value="nd"/>
Result for mutant	<input type="text" value="nd"/>
Kinetic in VACV-WR	<input type="text"/>
Incorporated in VACV-WR virion	<input type="text" value="nd"/>
Length of protein	<input type="text" value="71 aa"/>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

Link in Pubmed	<input type="text"/>
Link Gene in PBR	<input type="text" value="http://www.poxvirus.org/gene_detail.asp?gene_id=0041703"/>
Link gene group in PBR	<input type="text" value="http://www.poxvirus.org/gene_group.asp?ortholog_group_id=773"/>
Genbank file	<input type="text"/>
Sequencing data	<input type="text"/>

CPXV knockout-library

Consecutive number	5
Corresponding mutant BAC	
No of ORF	005
Gene in Genbank	CPXV005
Gene at PBR	CPXV-BR-005
VACV-COP homologs	C22L; B28R; A53R
Protein function	Tumor necrosis factor receptor
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	215 aa

Homology to orthologs in

Orthopoxviruses

VACV	95%
VACV-Cop	
VACV-MVA	
HSPV	91%
RPXV	
VARV	87%
CMLV	91%
ECTV	68%
MPXV	90%
TATV	

Chordopoxvirinae

CNPV	52%
FWPV	
LSDV	
MYXV	65%
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041704
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=642
Genbank file	
Sequencing data	

CPXV knockout-library

Consecutive number	6
Corresponding mutant BAC	
No of ORF	006
Gene in Genbank	CPXV006
Gene at PBR	CPXV-BR-006
VACV-COP homologs	C19L; B25R; B18R; C21L; B27R; C20L; B26R; B4R; C15L; B21R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	619 aa
Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041705
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=641
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	50%
VACV-Cop	39%
VACV-MVA	50%
HSPV	94%
RPXV	50%
VARV	93%
CMLV	93%
ECTV	94%
MPXV	94%
TATV	93%

Chordopoxvirinae

CNPV	42%
FWPV	41%
LSDV	41%
MYXV	41%
MOCV	
ORFV	40%
SWPV	44%
TANV	39%

CPXV knockout-library

Consecutive number	<input type="text" value="7"/>
Corresponding mutant BAC	<input type="text"/>
No of ORF	<input type="text" value="007"/>
Gene in Genbank	<input type="text" value="CPXV007"/>
Gene at PBR	<input type="text" value="CPXV-BR-007"/>
VACV-COP homologs	<input type="text"/>
Protein function	<input type="text" value="Unknown"/>
Plaques upon transfection (expression)	<input type="text" value="nd"/>
Result of passages	<input type="text" value="nd"/>
Result for mutant	<input type="text" value="nd"/>
Kinetic in VACV-WR	<input type="text"/>
Incorporated in VACV-WR virion	<input type="text" value="nd"/>
Length of protein	<input type="text" value="50 aa"/>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

Link in Pubmed	<input type="text"/>
Link Gene in PBR	<input type="text" value="http://www.poxvirus.org/gene_detail.asp?gene_id=0041706"/>
Link gene group in PBR	<input type="text" value="http://www.poxvirus.org/gene_group.asp?ortholog_group_id=774"/>
Genbank file	<input type="text"/>
Sequencing data	<input type="text"/>

CPXV knockout-library

Consecutive number	8
Corresponding mutant BAC	
No of ORF	008
Gene in Genbank	CPXV008
Gene at PBR	CPXV-BR-008
VACV-COP homologs	C17L; B23R; C18L; B24R; C9L
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	672 aa
Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041707
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=597
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	93%
VACV-Cop	
VACV-MVA	
HSPV	96%
RPXV	47%
VARV	50%
CMLV	96%
ECTV	
MPXV	50%
TATV	50%

Chordopoxvirinae

CNPV	45%
FWPV	41%
LSDV	40%
MYXV	41%
MOCV	
ORFV	
SWPV	42%
TANV	

CPXV knockout-library

Consecutive number	9
Corresponding mutant BAC	
No of ORF	009
Gene in Genbank	CPXV009
Gene at PBR	CPXV-BR-009
VACV-COP homologs	C16L; B22R; B15R
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	153 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041708

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=559

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 93%

VACV-Cop 49%

VACV-MVA 86%

HSPV 95%

RPXV 95%

VARV 95%

CMLV 97%

ECTV 63%

MPXV 94%

TATV 63%

Chordopoxvirinae

CNPV

FWPV

LSDV 57%

MYXV

MOCV

ORFV

SWPV 50%

TANV 49%

CPXV knockout-library

Consecutive number	10
Corresponding mutant BAC	pBRFseR d10
No of ORF	010
Gene in Genbank	CPXV010
Gene at PBR	CPXV-BR-010
VACV-COP homologs	N2L
Protein function	Alpha amanitin sensitivity protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	215 aa

Homology to orthologs in

Orthopoxviruses

VACV	47%
VACV-Cop	53%
VACV-MVA	47%
HSPV	87%
RPXV	47%
VARV	47%
CMLV	
ECTV	47%
MPXV	48%
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	53%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2024475>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041709

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=607

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d010.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d010.ab1>

CPXV knockout-library

Consecutive number	11
Corresponding mutant BAC	
No of ORF	011
Gene in Genbank	CPXV011
Gene at PBR	CPXV-BR-011
VACV-COP homologs	
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	658 aa

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041710
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=95
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	63%
VACV-Cop	43%
VACV-MVA	
HSPV	63%
RPXV	63%
VARV	63%
CMLV	63%
ECTV	95%
MPXV	63%
TATV	43%

Chordopoxvirinae

CNPV	38%
FWPV	46%
LSDV	44%
MYXV	
MOCV	
ORFV	
SWPV	44%
TANV	43%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	13
Corresponding mutant BAC	
No of ORF	013
Gene in Genbank	CPXV013
Gene at PBR	CPXV-BR-013
VACV-COP homologs	A55R; C2L
Protein function	Kelch like
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	523 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041712

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=589

Genbank file

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d013.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 44%

VACV-Cop 42%

VACV-MVA

HSPV 44%

RPXV 44%

VARV

CMLV 42%

ECTV 44%

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV 40%

MYXV 42%

MOCV

ORFV

SWPV 43%

TANV 42%

CPXV knockout-library

Consecutive number	14
Corresponding mutant BAC	pBRFseR d14
No of ORF	014 (crmb)
Gene in Genbank	CPXV014f
Gene at PBR	CPXV-BR-014
VACV-COP homologs	
Protein function	Tumor necrosis factor receptor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	202 aa

Homology to orthologs in

Orthopoxviruses

VACV	72%
VACV-Cop	
VACV-MVA	
HSPV	98%
RPXV	
VARV	63%
CMLV	64%
ECTV	98%
MPXV	65%
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	63%
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8091665>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041713

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=642

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d014.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d014.ab1>

CPXV knockout-library

Consecutive number	15
Corresponding mutant BAC	pBRFseR d15
No of ORF	015_rvCD30
Gene in Genbank	CPXV015f
Gene at PBR	CPXV-BR-015
VACV-COP homologs	
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	110 aa

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV 94%

RPXV

VARV

CMLV

ECTV 95%

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

Link in Pubmed	http://www.ncbi.nlm.nih.gov/pubmed?term=12034885
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041714
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=754
Genbank file	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d015rvCD30.gb
Sequencing data	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d015.ab1

CPXV knockout-library

Consecutive number	16
Corresponding mutant BAC	
No of ORF	016
Gene in Genbank	CPXV016
Gene at PBR	CPXV-BR-016
VACV-COP homologs	B18R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	764 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041715

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=639

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 41%

VACV-Cop 40%

VACV-MVA 41%

HSPV 41%

RPXV 42%

VARV 41%

CMLV 40%

ECTV 95%

MPXV 39%

TATV 39%

Chordopoxvirinae

CNPV 48%

FWPV 42%

LSDV 43%

MYXV 49%

MOCV

ORFV 42%

SWPV 41%

TANV 40%

CPXV knockout-library

Consecutive number	17
Corresponding mutant BAC	
No of ORF	017
Gene in Genbank	CPXV017
Gene at PBR	CPXV-BR-017
VACV-COP homologs	C9L; B4R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	435 aa
Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041716
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=740
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	57%
VACV-Cop	43%
VACV-MVA	
HSPV	95%
RPXV	56%
VARV	43%
CMLV	47%
ECTV	46%
MPXV	96%
TATV	57%

Chordopoxvirinae

CNPV	41%
FWPV	46%
LSDV	44%
MYXV	43%
MOCV	
ORFV	
SWPV	41%
TANV	43%

CPXV knockout-library

Consecutive number 18

Corresponding mutant BAC pBRFseR d18

No of ORF 018

Gene in Genbank CPXV018

Gene at PBR CPXV-BR-018

VACV-COP homologs

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 171 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041717

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=745

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d018.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d018.ab1>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV 75%

RPXV

VARV

CMLV

ECTV

MPXV 77%

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	19
Corresponding mutant BAC	
No of ORF	019
Gene in Genbank	CPXV019
Gene at PBR	CPXV-BR-019
VACV-COP homologs	B18R; B4R; B18R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	796 aa

Link in Pubmed

Link Gene in PBR

http://www.poxvirus.org/gene_detail.asp?gene_id=0041718

Link gene group in PBR

http://www.poxvirus.org/gene_group.asp?ortholog_group_id=639

Genbank file

http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d019.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	38%
VACV-Cop	44%
VACV-MVA	38%
HSPV	38%
RPXV	38%
VARV	38%
CMLV	39%
ECTV	58%
MPXV	47%
TATV	38%

Chordopoxvirinae

CNPV	44%
FWPV	50%
LSDV	40%
MYXV	48%
MOCV	
ORFV	44%
SWPV	49%
TANV	44%

CPXV knockout-library

Consecutive number	20
Corresponding mutant BAC	pBRFseR d20
No of ORF	020
Gene in Genbank	CPXV020
Gene at PBR	CPXV-BR-020
VACV-COP homologs	C7L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	170 aa

Homology to orthologs in

Orthopoxviruses

VACV	58%
VACV-Cop	48%
VACV-MVA	58%
HSPV	57%
RPXV	58%
VARV	94%
CMLV	94%
ECTV	58%
MPXV	59%
TATV	96%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	48%

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041719

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=598

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d020.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d020.ab1>

CPXV knockout-library

Consecutive number	21
Corresponding mutant BAC	pBRFseR d21
No of ORF	021_VGF
Gene in Genbank	CPXV021
Gene at PBR	CPXV-BR-021
VACV-COP homologs	C11R
Protein function	Epidermal growth factor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	139 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=22740414>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041720

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=382

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d021VGF.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d021.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA 96%

HSPV 95%

RPXV 97%

VARV 91%

CMLV 96%

ECTV 82%

MPXV 96%

TATV 95%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	22
Corresponding mutant BAC	pBRFseR d22
No of ORF	022
Gene in Genbank	CPXV022
Gene at PBR	CPXV-BR-022
VACV-COP homologs	C10L; C4L
Protein function	Interleukin 1 receptor antagonist
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	331 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=22791606>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041721

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=268

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d022.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d022.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 47%

VACV-MVA 95%

HSPV 96%

RPXV 97%

VARV 96%

CMLV 62%

ECTV 96%

MPXV 63%

TATV 62%

Chordopoxvirinae

CNPV 46%

FWPV 52%

LSDV 52%

MYXV

MOCV

ORFV

SWPV

TANV 47%

CPXV knockout-library

Consecutive number	23
Corresponding mutant BAC	pBRFseR d23
No of ORF	023
Gene in Genbank	CPXV023
Gene at PBR	CPXV-BR-023
VACV-COP homologs	
Protein function	Ubiquitin Ligase/ Host defense modulator protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	242 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041722

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=350

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d023.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d023.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 51%

VACV-MVA

HSPV

RPXV 98%

VARV 98%

CMLV 98%

ECTV 97%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV 57%

FWPV 63%

LSDV 50%

MYXV 48%

MOCV

ORFV

SWPV 49%

TANV 51%

CPXV knockout-library

Consecutive number 24

Corresponding mutant BAC pBRFseR d24

No of ORF 024

Gene in Genbank CPXV024

Gene at PBR CPXV-BR-024

VACV-COP homologs

Protein function Interleukin 18 binding protein

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 126 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=12388820>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041723

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=599

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d024.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d024.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 96%

VACV-Cop

VACV-MVA 94%

HSPV 98%

RPXV 98%

VARV 98%

CMLV

ECTV 98%

MPXV 94%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	25
Corresponding mutant BAC	
No of ORF	025
Gene in Genbank	CPXV025
Gene at PBR	CPXV-BR-025
VACV-COP homologs	C9L; C17L; B23R; B4R; C18L; B24R; B18R
Protein function	Ankyrin host range protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	668 aa
Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041724
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=600
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	81%
VACV-Cop	43%
VACV-MVA	43%
HSPV	48%
RPXV	49%
VARV	93%
CMLV	49%
ECTV	47%
MPXV	95%
TATV	96%

Chordopoxvirinae

CNPV	46%
FWPV	47%
LSDV	42%
MYXV	39%
MOCV	
ORFV	
SWPV	41%
TANV	43%

CPXV knockout-library

Consecutive number 26

Corresponding mutant BAC pBRFseR d26

No of ORF 026

Gene in Genbank CPXV026

Gene at PBR CPXV-BR-026

VACV-COP homologs

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 63 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041725

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=718

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d026.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d026.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 84%

VACV-Cop

VACV-MVA

HSPV 91%

RPXV 83%

VARV 89%

CMLV 92%

ECTV 89%

MPXV 91%

TATV 89%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV 72%

SWPV

TANV

CPXV knockout-library

Consecutive number	27
Corresponding mutant BAC	
No of ORF	027
Gene in Genbank	CPXV027
Gene at PBR	CPXV-BR-027
VACV-COP homologs	C9L; C17L; B23R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	632 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041726

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=601

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 94%

VACV-Cop 43%

VACV-MVA

HSPV 94%

RPXV 94%

VARV 49%

CMLV 47%

ECTV

MPXV 94%

TATV 80%

Chordopoxvirinae

CNPV 46%

FWPV 43%

LSDV 41%

MYXV 40%

MOCV

ORFV

SWPV 42%

TANV 43%

CPXV knockout-library

Consecutive number 28

Corresponding mutant BAC pBRFseR d28

No of ORF 028

Gene in Genbank CPXV028

Gene at PBR CPXV-BR-028

VACV-COP homologs C8L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR L

Incorporated in VACV-WR virion nd

Length of protein 185 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041727

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=651

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d028.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d028.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 96%

VACV-Cop

VACV-MVA 92%

HSPV 93%

RPXV 92%

VARV

CMLV 93%

ECTV 47%

MPXV

TATV 46%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 29

Corresponding mutant BAC pBRFseR d29

No of ORF 029

Gene in Genbank CPXV029

Gene at PBR CPXV-BR-029

VACV-COP homologs C7L

Protein function Host range virulence factor

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 150 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8336123%2018054061>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041728

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=576

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d029.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d029.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 65%

VACV-MVA 99%

HSPV 100%

RPXV 99%

VARV 99%

CMLV 98%

ECTV 97%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV 60%

MYXV 55%

MOCV

ORFV

SWPV 65%

TANV 65%

CPXV knockout-library

Consecutive number	30
Corresponding mutant BAC	pBRFseR d30
No of ORF	030
Gene in Genbank	CPXV030
Gene at PBR	CPXV-BR-030
VACV-COP homologs	C6L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	155 aa

Homology to orthologs in

Orthopoxviruses

VACV	94%
VACV-Cop	
VACV-MVA	94%
HSPV	93%
RPXV	94%
VARV	95%
CMLV	97%
ECTV	95%
MPXV	95%
TATV	95%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	47%
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=21931555>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041729

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=602

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d030.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d030.ab1>

CPXV knockout-library

Consecutive number	31
Corresponding mutant BAC	pBRFseR d31
No of ORF	031
Gene in Genbank	CPXV031f
Gene at PBR	CPXV-BR-031
VACV-COP homologs	C5L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	69 aa

Homology to orthologs in

Orthopoxviruses

VACV	61%
VACV-Cop	
VACV-MVA	
HSPV	64%
RPXV	61%
VARV	
CMLV	61%
ECTV	
MPXV	59%
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041730

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=603

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d031.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d031.ab1>

CPXV knockout-library

Consecutive number 32

Corresponding mutant BAC pBRFseR d32

No of ORF 032

Gene in Genbank CPXV032

Gene at PBR CPXV-BR-032

VACV-COP homologs C5L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 125 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041731

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=603

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d032.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d032.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA

HSPV 96%

RPXV 96%

VARV 91%

CMLV 91%

ECTV 97%

MPXV 97%

TATV 92%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	33
Corresponding mutant BAC	pBRFseR d33
No of ORF	033
Gene in Genbank	CPXV033
Gene at PBR	CPXV-BR-033
VACV-COP homologs	C4L; C10L
Protein function	Interleukin 1 receptor antagonist
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	316 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	52%
VACV-MVA	62%
HSPV	62%
RPXV	99%
VARV	99%
CMLV	99%
ECTV	63%
MPXV	98%
TATV	99%

Chordopoxvirinae

CNPV	44%
FWPV	41%
LSDV	49%
MYXV	
MOCV	
ORFV	
SWPV	
TANV	52%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=12084512>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041732

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=268

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d033.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d033.ab1>

CPXV knockout-library

Consecutive number	34
Corresponding mutant BAC	pBRFseR d34
No of ORF	034
Gene in Genbank	CPXV034
Gene at PBR	CPXV-BR-034
VACV-COP homologs	C3L; B5R
Protein function	Complement binding protein (secreted)
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	nd
Length of protein	263 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041733

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=604

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d034.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d034.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 52%

VACV-MVA 46%

HSPV 98%

RPXV 98%

VARV 96%

CMLV 96%

ECTV 95%

MPXV 95%

TATV 90%

Chordopoxvirinae

CNPV

FWPV

LSDV 53%

MYXV 53%

MOCV

ORFV

SWPV 52%

TANV 52%

CPXV knockout-library

Consecutive number	35
Corresponding mutant BAC	
No of ORF	035
Gene in Genbank	CPXV035
Gene at PBR	CPXV-BR-035
VACV-COP homologs	C2L; A55R; F3L; A55R
Protein function	Kelch like protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	512 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041734

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=605

Genbank file

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d035.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 48%

VACV-MVA 44%

HSPV 98%

RPXV 99%

VARV

CMLV 98%

ECTV 98%

MPXV 42%

TATV 44%

Chordopoxvirinae

CNPV

FWPV

LSDV 40%

MYXV 46%

MOCV

ORFV

SWPV 46%

TANV 48%

CPXV knockout-library

Consecutive number 36

Corresponding mutant BAC pBRFseR d36

No of ORF 036

Gene in Genbank CPXV036

Gene at PBR CPXV-BR-036

VACV-COP homologs C1L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 231 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041735

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=606

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d036.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d036.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA

HSPV 98%

RPXV 97%

VARV 100%

CMLV

ECTV

MPXV 97%

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	37
Corresponding mutant BAC	pBRFseR d37
No of ORF	037
Gene in Genbank	CPXV037
Gene at PBR	CPXV-BR-037
VACV-COP homologs	N1L
Protein function	Virokine/NFkB inhibitor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	117 aa

Homology to orthologs in

Orthopoxviruses

VACV	94%
VACV-Cop	
VACV-MVA	90%
HSPV	94%
RPXV	94%
VARV	93%
CMLV	95%
ECTV	92%
MPXV	92%
TATV	95%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20441222%2022194685%2018931086%2017485524%2017123957%2015215253%20>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041736

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=592

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d037.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d037.ab1>

CPXV knockout-library

Consecutive number 38

Corresponding mutant BAC pBRFseR d38

No of ORF 038

Gene in Genbank CPXV038

Gene at PBR CPXV-BR-038

VACV-COP homologs N2L

Protein function Alpha amanitin sensitivity protein

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 177 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2024475>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041737

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=607

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d038.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d038.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 95%

VACV-Cop 56%

VACV-MVA 91%

HSPV 95%

RPXV 95%

VARV 95%

CMLV 88%

ECTV 94%

MPXV 94%

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV 56%

CPXV knockout-library

Consecutive number	39
Corresponding mutant BAC	
No of ORF	039
Gene in Genbank	CPXV039
Gene at PBR	CPXV-BR-039
VACV-COP homologs	M1L; B4R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	473 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041738

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=608

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	45%
VACV-MVA	
HSPV	42%
RPXV	97%
VARV	98%
CMLV	98%
ECTV	96%
MPXV	97%
TATV	98%

Chordopoxvirinae

CNPV	43%
FWPV	45%
LSDV	
MYXV	
MOCV	
ORFV	46%
SWPV	
TANV	45%

CPXV knockout-library

Consecutive number	40
Corresponding mutant BAC	pBRFseR d40
No of ORF	040
Gene in Genbank	CPXV040
Gene at PBR	CPXV-BR-040
VACV-COP homologs	M2L
Protein function	NFkB inhibitor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	220 aa

Homology to orthologs in

Orthopoxviruses

VACV	97%
VACV-Cop	47%
VACV-MVA	
HSPV	96%
RPXV	97%
VARV	97%
CMLV	96%
ECTV	
MPXV	96%
TATV	97%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	68%
MOCV	
ORFV	
SWPV	
TANV	47%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16912315%2018190944>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041739

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=594

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d040.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d040.ab1>

CPXV knockout-library

Consecutive number	41
Corresponding mutant BAC	
No of ORF	041
Gene in Genbank	CPXV041
Gene at PBR	CPXV-BR-041
VACV-COP homologs	K1L
Protein function	Ankyrin and NFkB inhibitor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	284 aa

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041740
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=609
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	97%
VACV-Cop	
VACV-MVA	
HSPV	97%
RPXV	97%
VARV	
CMLV	
ECTV	97%
MPXV	97%
TATV	95%

Chordopoxvirinae

CNPV	43%
FWPV	48%
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

CPXV knockout-library

Consecutive number	42
Corresponding mutant BAC	pBRFseR d42
No of ORF	042_SPI3
Gene in Genbank	CPXV042
Gene at PBR	CPXV-BR-042
VACV-COP homologs	K2L; C12L; B14R
Protein function	"Serp1n 1,2,3"
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	373 aa

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	47%
VACV-MVA	97%
HSPV	98%
RPXV	97%
VARV	98%
CMLV	97%
ECTV	98%
MPXV	98%
TATV	99%

Chordopoxvirinae

CNPV	44%
FWPV	41%
LSDV	47%
MYXV	52%
MOCV	
ORFV	
SWPV	47%
TANV	47%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1641985%209049422%207666502%208709286%207831769>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041741

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=272

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d042SPI3.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d042.ab1>

CPXV knockout-library

Consecutive number 43

Corresponding mutant BAC pBRFseR d43

No of ORF 043

Gene in Genbank CPXV043

Gene at PBR CPXV-BR-043

VACV-COP homologs K3L

Protein function Interferon resistance and eIF2 alpha-like PKR inhibitor

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 88 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1711259%207542414>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041742

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=595

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d043.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d043.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 95%

VACV-Cop 54%

VACV-MVA 95%

HSPV 94%

RPXV 94%

VARV 91%

CMLV 94%

ECTV

MPXV

TATV 95%

Chordopoxvirinae

CNPV

FWPV

LSDV 62%

MYXV

MOCV

ORFV

SWPV 58%

TANV 54%

CPXV knockout-library

Consecutive number	44
Corresponding mutant BAC	pBRFseR d44
No of ORF	044
Gene in Genbank	CPXV044
Gene at PBR	CPXV-BR-044
VACV-COP homologs	K4L; F13L
Protein function	Nicking/joining enzyme
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	424 aa

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 52%

VACV-MVA 99%

HSPV 98%

RPXV 99%

VARV 47%

CMLV 97%

ECTV 98%

MPXV 98%

TATV 97%

Chordopoxvirinae

CNPV 51%

FWPV 50%

LSDV 70%

MYXV 47%

MOCV 47%

ORFV 50%

SWPV 50%

TANV 52%

Link in Pubmed	http://www.ncbi.nlm.nih.gov/pubmed?term=16306579
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041743
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=652
Genbank file	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d044.gb
Sequencing data	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d044.ab1

CPXV knockout-library

Consecutive number	45
Corresponding mutant BAC	pBRFseR d45
No of ORF	045
Gene in Genbank	CPXV045
Gene at PBR	CPXV-BR-045
VACV-COP homologs	K5L; K6L
Protein function	Monoglyceride lipase (putative)
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	276 aa

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	62%
VACV-MVA	
HSPV	98%
RPXV	
VARV	
CMLV	
ECTV	98%
MPXV	98%
TATV	98%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	62%

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041744

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=668

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d045.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d045.ab1>

CPXV knockout-library

Consecutive number 46

Corresponding mutant BAC pBRFseR d46/47

No of ORF 046

Gene in Genbank CPXV046

Gene at PBR CPXV-BR-046

VACV-COP homologs K7R

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 149 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041745

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=610

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d046_d047.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d046.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 53%

VACV-MVA 98%

HSPV 98%

RPXV 98%

VARV 99%

CMLV 98%

ECTV

MPXV 99%

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV 56%

TANV 53%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 48

Corresponding mutant BAC pBRFseR d48

No of ORF 048

Gene in Genbank CPXV048

Gene at PBR CPXV-BR-048

VACV-COP homologs F1L

Protein function Apoptosis inhibitor (associated with mitochondria)

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 251 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20022954>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041747

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=611

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d048.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d048.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 90%

VACV-Cop

VACV-MVA 89%

HSPV 94%

RPXV 88%

VARV 92%

CMLV 93%

ECTV 89%

MPXV 83%

TATV 94%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 49

Corresponding mutant BAC pBRFseR d49

No of ORF 049

Gene in Genbank CPXV049

Gene at PBR CPXV-BR-049

VACV-COP homologs F2L

Protein function dUTPase

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 147 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8393252>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041748

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=21

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d049.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 73%

VACV-MVA 97%

HSPV 97%

RPXV 97%

VARV 97%

CMLV 97%

ECTV 97%

MPXV 98%

TATV 96%

Chordopoxvirinae

CNPV 74%

FWPV 73%

LSDV 80%

MYXV 76%

MOCV

ORFV 71%

SWPV 75%

TANV 73%

CPXV knockout-library

Consecutive number	50
Corresponding mutant BAC	
No of ORF	050
Gene in Genbank	CPXV050
Gene at PBR	CPXV-BR-050
VACV-COP homologs	F3L; A55R; C2L
Protein function	Kelch-like protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	480 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041749

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=567

Genbank file

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d050.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 49%

VACV-MVA 98%

HSPV 99%

RPXV 99%

VARV

CMLV 99%

ECTV 98%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV 44%

MYXV 44%

MOCV

ORFV

SWPV 46%

TANV 49%

CPXV knockout-library

Consecutive number 51

Corresponding mutant BAC pBRFseR d51

No of ORF 051 double deletion

Gene in Genbank CPXV051

Gene at PBR CPXV-BR-051

VACV-COP homologs F4L

Protein function Ribonucleotide reductase small subunit

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion Yes

Length of protein 333 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2219701%208824774>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041750

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=568

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d051_d051A.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d051.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 87%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 99%

CMLV 98%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 83%

FWPV

LSDV 87%

MYXV 87%

MOCV

ORFV

SWPV 90%

TANV 87%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041751

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=670

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d051_d051A.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d051.ab1>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	53
Corresponding mutant BAC	pBRFseR d52
No of ORF	052
Gene in Genbank	CPXV052
Gene at PBR	CPXV-BR-053
VACV-COP homologs	F5L
Protein function	Membrane protein (36 kDa)
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	323 aa

Homology to orthologs in

Orthopoxviruses

VACV	95%
VACV-Cop	
VACV-MVA	97%
HSPV	94%
RPXV	95%
VARV	93%
CMLV	94%
ECTV	
MPXV	94%
TATV	93%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041752

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=612

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d052.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d052.ab1>

CPXV knockout-library

Consecutive number 54

Corresponding mutant BAC pBRFseR d53

No of ORF 053

Gene in Genbank CPXV053

Gene at PBR CPXV-BR-054

VACV-COP homologs F6L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 71 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041753

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=613

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d053.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d053.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 93%

VACV-Cop

VACV-MVA 93%

HSPV 93%

RPXV 93%

VARV 89%

CMLV 89%

ECTV 93%

MPXV 90%

TATV 89%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 55

Corresponding mutant BAC pBRFseR d54

No of ORF 054

Gene in Genbank CPXV054

Gene at PBR CPXV-BR-055

VACV-COP homologs F7L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 81 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041754

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=614

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d054.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d054.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 93%

VACV-Cop

VACV-MVA 93%

HSPV 92%

RPXV 90%

VARV 88%

CMLV 89%

ECTV 91%

MPXV 88%

TATV 90%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	56
Corresponding mutant BAC	pBRFseR d55
No of ORF	055
Gene in Genbank	CPXV055
Gene at PBR	CPXV-BR-056
VACV-COP homologs	F8L
Protein function	Cytoplasmic protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	65 aa

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	
VACV-MVA	97%
HSPV	97%
RPXV	98%
VARV	100%
CMLV	98%
ECTV	97%
MPXV	95%
TATV	98%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=9349485>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041755

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=571

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d055.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d055.ab1>

CPXV knockout-library

Consecutive number	57
Corresponding mutant BAC	pBRFseR d56
No of ORF	056
Gene in Genbank	CPXV056
Gene at PBR	CPXV-BR-057
VACV-COP homologs	F9L; L1R
Protein function	Disulfide bond formation pathway protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	212 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16973551%2011983854>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041756

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=234

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d056.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d056.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 76%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 99%

Chordopoxvirinae

CNPV 58%

FWPV 62%

LSDV 70%

MYXV 70%

MOCV 67%

ORFV 57%

SWPV 70%

TANV 76%

CPXV knockout-library

Consecutive number 58

Corresponding mutant BAC pBRFseR d57/58

No of ORF 057

Gene in Genbank CPXV057

Gene at PBR CPXV-BR-058

VACV-COP homologs F10L

Protein function Serine/Threonine kinase

Plaques upon transfection (expression) negativ

Result of passages no virus progeny

Result for mutant ORF essential

Kinetic in VACV-WR L

Incorporated in VACV-WR virion Yes

Length of protein 439 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8052637%207666563%207666539>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041757

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=157

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d057_d058.gb

Sequencing data http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d057_058.ab1

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 84%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 72%

FWPV 72%

LSDV 86%

MYXV 82%

MOCV 77%

ORFV 71%

SWPV 86%

TANV 84%

CPXV knockout-library

Consecutive number 59

Corresponding mutant BAC pBRFseR d57/58

No of ORF 058

Gene in Genbank CPXV058

Gene at PBR CPXV-BR-059

VACV-COP homologs F_ORF_D

Protein function Unknown

Plaques upon transfection (expression) nd

Result of passages nd

Result for mutant nd

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 85 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041758

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=672

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d057_d058.gb

Sequencing data http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d057_058.ab1

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	60
Corresponding mutant BAC	pBRFseR d59
No of ORF	059
Gene in Genbank	CPXV059
Gene at PBR	CPXV-BR-060
VACV-COP homologs	F11L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	354 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=18485055%2018005700>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041759

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=335

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d059.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d059.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop

VACV-MVA

HSPV 100%

RPXV 99%

VARV 97%

CMLV 99%

ECTV 99%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV 46%

FWPV 44%

LSDV 49%

MYXV

MOCV 50%

ORFV 55%

SWPV 55%

TANV

CPXV knockout-library

Consecutive number	61
Corresponding mutant BAC	pBRFseR d60
No of ORF	060
Gene in Genbank	CPXV060
Gene at PBR	CPXV-BR-061
VACV-COP homologs	F12L
Protein function	IEV associated protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	634 aa

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	57%
VACV-MVA	98%
HSPV	98%
RPXV	98%
VARV	97%
CMLV	98%
ECTV	99%
MPXV	98%
TATV	98%

Chordopoxvirinae

CNPV	46%
FWPV	46%
LSDV	58%
MYXV	57%
MOCV	50%
ORFV	47%
SWPV	60%
TANV	57%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8380837%2011090164%2011752717%2019052096>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041760

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=334

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d060.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d060.ab1>

CPXV knockout-library

Consecutive number	62
Corresponding mutant BAC	pBRFseR d61
No of ORF	061
Gene in Genbank	CPXV061
Gene at PBR	CPXV-BR-062
VACV-COP homologs	F13L; K4L
Protein function	EEV phospholipase
Plaques upon transfection (expression)	negativ
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	372 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1920620%2022138484%2017475658%2012706074%2011602786%20>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041761

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=333

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d061.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d061.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 75%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 99%

CMLV 99%

ECTV 100%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 60%

FWPV 61%

LSDV 72%

MYXV 72%

MOCV 62%

ORFV 63%

SWPV 74%

TANV 75%

CPXV knockout-library

Consecutive number 63

Corresponding mutant BAC pBRFseR d62

No of ORF 062

Gene in Genbank CPXV062

Gene at PBR CPXV-BR-063

VACV-COP homologs F14L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 73 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041762

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=615

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d062.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d062.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 93%

VACV-Cop

VACV-MVA 93%

HSPV 93%

RPXV 93%

VARV 90%

CMLV 95%

ECTV 90%

MPXV 93%

TATV 85%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 64

Corresponding mutant BAC pBRFseR d63

No of ORF 063

Gene in Genbank CPXV063

Gene at PBR CPXV-BR-064

VACV-COP homologs

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 52 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041763

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=776

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d063.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d063.ab1>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	65
Corresponding mutant BAC	
No of ORF	0
Gene in Genbank	-
Gene at PBR	CPXV-BR-065
VACV-COP homologs	F14.5L
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	0
Incorporated in VACV-WR virion	Yes
Length of protein	49 aa

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041764
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=409
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	
VACV-MVA	96%
HSPV	
RPXV	98%
VARV	96%
CMLV	98%
ECTV	98%
MPXV	96%
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

CPXV knockout-library

Consecutive number	66
Corresponding mutant BAC	pBRFseR d64
No of ORF	064
Gene in Genbank	CPXV064
Gene at PBR	CPXV-BR-066
VACV-COP homologs	F15L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	158 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041765

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=331

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d064.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d064.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 74%

VACV-MVA 97%

HSPV 98%

RPXV 97%

VARV 97%

CMLV 98%

ECTV 98%

MPXV 97%

TATV 98%

Chordopoxvirinae

CNPV 71%

FWPV 67%

LSDV 80%

MYXV 70%

MOCV 76%

ORFV

SWPV 76%

TANV 74%

CPXV knockout-library

Consecutive number	67
Corresponding mutant BAC	pBRFseR d65
No of ORF	065
Gene in Genbank	CPXV065
Gene at PBR	CPXV-BR-067
VACV-COP homologs	F16L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	231 aa

Homology to orthologs in

Orthopoxviruses

VACV	97%
VACV-Cop	61%
VACV-MVA	97%
HSPV	97%
RPXV	97%
VARV	97%
CMLV	97%
ECTV	97%
MPXV	97%
TATV	97%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	61%
MYXV	56%
MOCV	56%
ORFV	
SWPV	62%
TANV	61%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=21752417>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041766

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=415

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d065.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d065.ab1>

CPXV knockout-library

Consecutive number	68
Corresponding mutant BAC	pBRFseR d66
No of ORF	066
Gene in Genbank	CPXV066
Gene at PBR	CPXV-BR-068
VACV-COP homologs	F17R
Protein function	DNA binding phosphoprotein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	101 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	75%
VACV-MVA	100%
HSPV	100%
RPXV	100%
VARV	98%
CMLV	100%
ECTV	100%
MPXV	97%
TATV	100%

Chordopoxvirinae

CNPV	61%
FWPV	61%
LSDV	79%
MYXV	83%
MOCV	73%
ORFV	65%
SWPV	81%
TANV	75%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=9202134>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041767

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=329

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d066.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d066.ab1>

CPXV knockout-library

Consecutive number	69
Corresponding mutant BAC	pBRFseR d67
No of ORF	067
Gene in Genbank	CPXV067
Gene at PBR	CPXV-BR-069
VACV-COP homologs	E1L
Protein function	Poly(A) polymerase large subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	479 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	83%
VACV-MVA	100%
HSPV	99%
RPXV	100%
VARV	99%
CMLV	99%
ECTV	99%
MPXV	100%
TATV	99%

Chordopoxvirinae

CNPV	68%
FWPV	68%
LSDV	83%
MYXV	84%
MOCV	73%
ORFV	64%
SWPV	82%
TANV	83%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1670500%201353739%207693457>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041768

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=53

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d067.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d067.ab1>

CPXV knockout-library

Consecutive number	70
Corresponding mutant BAC	pBRFseR d68
No of ORF	068
Gene in Genbank	CPXV068
Gene at PBR	CPXV-BR-070
VACV-COP homologs	E2L; O1L
Protein function	Unknown
Plaques upon transfection (expression)	weak early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	737 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=18287229%2019207726>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041769

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=328

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d068.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d068.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 63%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 48%

FWPV 48%

LSDV 61%

MYXV 62%

MOCV 55%

ORFV 50%

SWPV 64%

TANV 63%

CPXV knockout-library

Consecutive number	71
Corresponding mutant BAC	pBRFseR d69
No of ORF	069
Gene in Genbank	CPXV069
Gene at PBR	CPXV-BR-071
VACV-COP homologs	E3L
Protein function	Interferon resistance and PKR inhibitor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	190 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8879125%207527085%207542414>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041770

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=573

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d069.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d069.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 96%

VACV-Cop 56%

VACV-MVA 96%

HSPV 96%

RPXV 96%

VARV 97%

CMLV 96%

ECTV 95%

MPXV 91%

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV 52%

MYXV 64%

MOCV

ORFV 47%

SWPV 56%

TANV 56%

CPXV knockout-library

Consecutive number	72
Corresponding mutant BAC	pBRFseR d70
No of ORF	070
Gene in Genbank	CPXV070
Gene at PBR	CPXV-BR-072
VACV-COP homologs	E4L
Protein function	RNA polymerase 30 subunit
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	261 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	85%
VACV-MVA	99%
HSPV	98%
RPXV	99%
VARV	98%
CMLV	99%
ECTV	99%
MPXV	98%
TATV	98%

Chordopoxvirinae

CNPV	78%
FWPV	77%
LSDV	84%
MYXV	75%
MOCV	82%
ORFV	74%
SWPV	83%
TANV	85%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2398897>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041771

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=327

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d070.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d070.ab1>

CPXV knockout-library

Consecutive number	73
Corresponding mutant BAC	pBRFseR d71
No of ORF	071
Gene in Genbank	CPXV071
Gene at PBR	CPXV-BR-073
VACV-COP homologs	E5R
Protein function	Virosome component protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	319 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041772

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=574

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d071.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d071.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 94%

VACV-Cop 44%

VACV-MVA 94%

HSPV 93%

RPXV 94%

VARV 93%

CMLV 93%

ECTV 95%

MPXV

TATV 94%

Chordopoxvirinae

CNPV

FWPV

LSDV 49%

MYXV 44%

MOCV

ORFV

SWPV

TANV 44%

CPXV knockout-library

Consecutive number 74

Corresponding mutant BAC pBRFseR d72

No of ORF 072

Gene in Genbank CPXV072

Gene at PBR CPXV-BR-074

VACV-COP homologs E6R

Protein function required for the formation of immature virions

Plaques upon transfection (expression) negativ

Result of passages no virus progeny

Result for mutant ORF essential

Kinetic in VACV-WR I

Incorporated in VACV-WR virion Yes

Length of protein 567 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20116822;%2019217136>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041773

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=173

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d072.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d072.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 81%

VACV-MVA 100%

HSPV 99%

RPXV 100%

VARV 99%

CMLV 100%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 74%

FWPV 74%

LSDV 83%

MYXV 82%

MOCV 80%

ORFV 76%

SWPV 81%

TANV 81%

CPXV knockout-library

Consecutive number	75
Corresponding mutant BAC	pBRFseR d73
No of ORF	073
Gene in Genbank	CPXV073
Gene at PBR	CPXV-BR-075
VACV-COP homologs	E7R
Protein function	EEV myristylated soluble protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	165 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	
VACV-MVA	99%
HSPV	99%
RPXV	98%
VARV	
CMLV	95%
ECTV	98%
MPXV	95%
TATV	97%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8515749>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041774

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=581

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d073.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d073.ab1>

CPXV knockout-library

Consecutive number	76
Corresponding mutant BAC	pBRFseR d74
No of ORF	074
Gene in Genbank	CPXV074
Gene at PBR	CPXV-BR-076
VACV-COP homologs	E8R
Protein function	Endoplasmic reticulum localized membrane protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	273 aa

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 82%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 68%

FWPV 69%

LSDV 84%

MYXV 81%

MOCV 71%

ORFV 74%

SWPV 78%

TANV 82%

Link in Pubmed	http://www.ncbi.nlm.nih.gov/pubmed?term=11452001%2012208956%2017619043
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041775
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=325
Genbank file	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d074.gb
Sequencing data	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d074.ab1

CPXV knockout-library

Consecutive number	77
Corresponding mutant BAC	pBRFseR d75
No of ORF	075
Gene in Genbank	CPXV075
Gene at PBR	CPXV-BR-077
VACV-COP homologs	E9L
Protein function	DNA polymerase
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	Yes
Length of protein	1005 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=7983061%207950389>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041776

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=63

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d075.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d075.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 82%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 100%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 69%

FWPV 69%

LSDV 83%

MYXV 82%

MOCV 72%

ORFV 73%

SWPV 81%

TANV 82%

CPXV knockout-library

Consecutive number	78
Corresponding mutant BAC	pBRFseR d76
No of ORF	076
Gene in Genbank	CPXV076
Gene at PBR	CPXV-BR-078
VACV-COP homologs	E10R
Protein function	Disulfide bond formation pathway protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	95 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	79%
VACV-MVA	98%
HSPV	99%
RPXV	99%
VARV	98%
CMLV	98%
ECTV	98%
MPXV	98%
TATV	99%

Chordopoxvirinae

CNPV	68%
FWPV	72%
LSDV	81%
MYXV	86%
MOCV	81%
ORFV	78%
SWPV	80%
TANV	79%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=11112499>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041777

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=120

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d076.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d076.ab1>

CPXV knockout-library

Consecutive number	79
Corresponding mutant BAC	pBRFseR d77
No of ORF	077
Gene in Genbank	CPXV077
Gene at PBR	CPXV-BR-079
VACV-COP homologs	E11L
Protein function	Virion core protein
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	Yes
Length of protein	129 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8614998>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041778

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=324

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d077.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 71%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 99%

ECTV 98%

MPXV 99%

TATV 98%

Chordopoxvirinae

CNPV 56%

FWPV 55%

LSDV 70%

MYXV

MOCV 60%

ORFV 56%

SWPV

TANV 71%

CPXV knockout-library

Consecutive number	80
Corresponding mutant BAC	pBRFseR d78
No of ORF	078
Gene in Genbank	CPXV078
Gene at PBR	CPXV-BR-080
VACV-COP homologs	O1L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	666 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=22171261>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041779

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=323

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d078_d078A.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 61%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 99%

CMLV

ECTV 99%

MPXV 99%

TATV

Chordopoxvirinae

CNPV 44%

FWPV 42%

LSDV 60%

MYXV 60%

MOCV 51%

ORFV 47%

SWPV 61%

TANV 61%

CPXV knockout-library

Consecutive number	81
Corresponding mutant BAC	
No of ORF	078A
Gene in Genbank	CPXV078A
Gene at PBR	CPXV-BR-081
VACV-COP homologs	
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	62 aa

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041780
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=777
Genbank file	
Sequencing data	

CPXV knockout-library

Consecutive number	82
Corresponding mutant BAC	pBRFseR d79
No of ORF	079
Gene in Genbank	CPXV079
Gene at PBR	CPXV-BR-082
VACV-COP homologs	O2L
Protein function	Glutaredoxin 1
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	108 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=7499196>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041781

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=617

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d079.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 98%

CMLV 100%

ECTV 100%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	83
Corresponding mutant BAC	pBRFseR d80
No of ORF	080
Gene in Genbank	CPXV080
Gene at PBR	CPXV-BR-083
VACV-COP homologs	I1L
Protein function	DNA binding protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	312 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=9371587%2011581377>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041782

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=322

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d080.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 84%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 99%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 78%

FWPV 76%

LSDV 85%

MYXV 83%

MOCV 75%

ORFV 69%

SWPV 84%

TANV 84%

CPXV knockout-library

Consecutive number	84
Corresponding mutant BAC	pBRFseR d81
No of ORF	081
Gene in Genbank	CPXV081
Gene at PBR	CPXV-BR-084
VACV-COP homologs	I2L
Protein function	Unknown
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	73 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1496000%2018701587>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041783

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=321

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d081.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 64%

VACV-MVA 99%

HSPV 93%

RPXV 99%

VARV 99%

CMLV 97%

ECTV 99%

MPXV 97%

TATV 99%

Chordopoxvirinae

CNPV

FWPV 56%

LSDV 67%

MYXV 68%

MOCV 61%

ORFV

SWPV 74%

TANV 64%

CPXV knockout-library

Consecutive number	85
Corresponding mutant BAC	pBRFseR d82
No of ORF	082
Gene in Genbank	CPXV082
Gene at PBR	CPXV-BR-085
VACV-COP homologs	I3L
Protein function	DNA binding phosphoprotein
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	268 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=9525612%2010419472%2022438556>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041784

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=320

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d082.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 73%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 98%

ECTV 99%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV 54%

FWPV 58%

LSDV 70%

MYXV 71%

MOCV 65%

ORFV 63%

SWPV 73%

TANV 73%

CPXV knockout-library

Consecutive number	86
Corresponding mutant BAC	pBRFseR d83
No of ORF	083
Gene in Genbank	CPXV083
Gene at PBR	CPXV-BR-086
VACV-COP homologs	I4L
Protein function	Ribonucleotide reductase large subunit
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	771 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041785

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=618

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d083.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA 99%

HSPV 96%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV 83%

TANV

CPXV knockout-library

Consecutive number	87
Corresponding mutant BAC	pBRFseR d84
No of ORF	084
Gene in Genbank	CPXV084
Gene at PBR	CPXV-BR-087
VACV-COP homologs	I5L
Protein function	IMV protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	79 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=19077320%20%2018701595>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041786

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=319

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d084.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 76%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 97%

CMLV 97%

ECTV 97%

MPXV 96%

TATV 99%

Chordopoxvirinae

CNPV

FWPV 67%

LSDV 69%

MYXV 68%

MOCV 67%

ORFV

SWPV 65%

TANV 76%

CPXV knockout-library

Consecutive number	88
Corresponding mutant BAC	pBRFseR d85
No of ORF	085
Gene in Genbank	CPXV085
Gene at PBR	CPXV-BR-088
VACV-COP homologs	I6L
Protein function	Telomere binding protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	382 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=11581377%2014512543>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041787

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=318

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d085.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 74%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 58%

FWPV 57%

LSDV 71%

MYXV 71%

MOCV 59%

ORFV 56%

SWPV 75%

TANV 74%

CPXV knockout-library

Consecutive number	89
Corresponding mutant BAC	pBRFseR d86
No of ORF	086
Gene in Genbank	CPXV086
Gene at PBR	CPXV-BR-089
VACV-COP homologs	I7L
Protein function	Virion core protease
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	423 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=15163727%2014512576%2012163618%2015701171>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041788

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=180

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d086.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 86%

VACV-MVA 100%

HSPV 99%

RPXV 100%

VARV 99%

CMLV 100%

ECTV 99%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 74%

FWPV 75%

LSDV 84%

MYXV 82%

MOCV 81%

ORFV 74%

SWPV 85%

TANV 86%

CPXV knockout-library

Consecutive number	90
Corresponding mutant BAC	pBRFseR d87
No of ORF	087
Gene in Genbank	CPXV087
Gene at PBR	CPXV-BR-090
VACV-COP homologs	I8R
Protein function	RNA helicase/ NPH-II
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	676 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=9573237%204364422%20133206>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041789

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=91

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d087.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 76%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 98%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 62%

FWPV 61%

LSDV 75%

MYXV 74%

MOCV 65%

ORFV 66%

SWPV 76%

TANV 76%

CPXV knockout-library

Consecutive number	91
Corresponding mutant BAC	pBRFseR d88
No of ORF	088
Gene in Genbank	CPXV088
Gene at PBR	CPXV-BR-091
VACV-COP homologs	G1L
Protein function	Metalloprotease (predicted)
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	591 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=15194761%2015331728>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041790

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=244

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d088.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 75%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 65%

FWPV 63%

LSDV 73%

MYXV 72%

MOCV 71%

ORFV 64%

SWPV 75%

TANV 75%

CPXV knockout-library

Consecutive number	92
Corresponding mutant BAC	pBRFseR d89
No of ORF	089
Gene in Genbank	CPXV089
Gene at PBR	CPXV-BR-092
VACV-COP homologs	G3L
Protein function	virus fusion complex
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	111 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16912291>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041791

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=316

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d089.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 65%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 98%

CMLV 100%

ECTV 99%

MPXV 100%

TATV 99%

Chordopoxvirinae

CNPV

FWPV 52%

LSDV 68%

MYXV 69%

MOCV 47%

ORFV 52%

SWPV 68%

TANV 65%

CPXV knockout-library

Consecutive number	93
Corresponding mutant BAC	pBRFseR d90
No of ORF	090
Gene in Genbank	CPXV090
Gene at PBR	CPXV-BR-093
VACV-COP homologs	G2R
Protein function	Viral late transcription factor
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	220 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8523560>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041792

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=315

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d090.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 72%

VACV-MVA 99%

HSPV 100%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 100%

TATV 98%

Chordopoxvirinae

CNPV 55%

FWPV 52%

LSDV 73%

MYXV 72%

MOCV 52%

ORFV 53%

SWPV 69%

TANV 72%

CPXV knockout-library

Consecutive number	94
Corresponding mutant BAC	pBRFseR d91
No of ORF	091
Gene in Genbank	CPXV091
Gene at PBR	CPXV-BR-094
VACV-COP homologs	G4L
Protein function	Glutaredoxin 2
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	124 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=10982364%2011752136>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041793

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=314

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d091.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 65%

VACV-MVA 98%

HSPV 98%

RPXV 99%

VARV 98%

CMLV 98%

ECTV 99%

MPXV 99%

TATV 98%

Chordopoxvirinae

CNPV 52%

FWPV 55%

LSDV 67%

MYXV 68%

MOCV 51%

ORFV 55%

SWPV 68%

TANV 65%

CPXV knockout-library

Consecutive number	95
Corresponding mutant BAC	pBRFseR d92
No of ORF	092
Gene in Genbank	CPXV092
Gene at PBR	CPXV-BR-095
VACV-COP homologs	G5R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	434 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041794

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=178

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d092.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 62%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 98%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 54%

FWPV 52%

LSDV 66%

MYXV 61%

MOCV 51%

ORFV 53%

SWPV 62%

TANV 62%

CPXV knockout-library

Consecutive number	96
Corresponding mutant BAC	pBRFseR d93
No of ORF	093
Gene in Genbank	CPXV093
Gene at PBR	CPXV-BR-096
VACV-COP homologs	G5.5R
Protein function	RNA polymerase 7 subunit
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	63 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1560534>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041795

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=339

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d093.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 89%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 79%

FWPV 81%

LSDV 89%

MYXV 87%

MOCV 84%

ORFV 87%

SWPV 86%

TANV 89%

CPXV knockout-library

Consecutive number	97
Corresponding mutant BAC	pBRFseR d94
No of ORF	094
Gene in Genbank	CPXV094
Gene at PBR	CPXV-BR-097
VACV-COP homologs	G6R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	167 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041796

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=55

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d094.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 71%

VACV-MVA 98%

HSPV 98%

RPXV 98%

VARV 98%

CMLV 98%

ECTV 99%

MPXV 97%

TATV 98%

Chordopoxvirinae

CNPV 52%

FWPV 50%

LSDV 62%

MYXV 60%

MOCV 49%

ORFV 54%

SWPV 63%

TANV 71%

CPXV knockout-library

Consecutive number	98
Corresponding mutant BAC	pBRFseR d95
No of ORF	095
Gene in Genbank	CPXV095
Gene at PBR	CPXV-BR-098
VACV-COP homologs	G7L
Protein function	Virion assembly protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	371 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041797

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=340

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d095.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 69%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 59%

FWPV 59%

LSDV 73%

MYXV 66%

MOCV 62%

ORFV 55%

SWPV 71%

TANV 69%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	100
Corresponding mutant BAC	pBRFseR d96/97
No of ORF	097
Gene in Genbank	CPXV097
Gene at PBR	CPXV-BR-100
VACV-COP homologs	G8R
Protein function	Viral late transcription factor 1
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	260 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2344616>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041799

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=341

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d097_d096.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 94%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 82%

FWPV 82%

LSDV 94%

MYXV 92%

MOCV 85%

ORFV 85%

SWPV 93%

TANV 94%

CPXV knockout-library

Consecutive number	101
Corresponding mutant BAC	pBRFseR d98
No of ORF	098
Gene in Genbank	CPXV098
Gene at PBR	CPXV-BR-101
VACV-COP homologs	G9R
Protein function	Entry fusion complex protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	340 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16973586>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041800

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=50

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d098.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 72%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 98%

ECTV 99%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV 55%

FWPV 57%

LSDV 66%

MYXV 65%

MOCV 55%

ORFV 54%

SWPV 62%

TANV 72%

CPXV knockout-library

Consecutive number	102
Corresponding mutant BAC	pBRFseR d99
No of ORF	099
Gene in Genbank	CPXV099
Gene at PBR	CPXV-BR-102
VACV-COP homologs	L1R; F9L
Protein function	IMV myristylated membrane protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	250 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8083978>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041801

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=211

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d099.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 84%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 76%

FWPV 76%

LSDV 82%

MYXV 87%

MOCV 79%

ORFV 78%

SWPV 84%

TANV 84%

CPXV knockout-library

Consecutive number	103
Corresponding mutant BAC	pBRFseR d100
No of ORF	100
Gene in Genbank	CPXV100
Gene at PBR	CPXV-BR-103
VACV-COP homologs	L2R
Protein function	Crescent formation
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	88 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=21228235>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041802

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=342

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d100.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 94%

VACV-Cop 56%

VACV-MVA 94%

HSPV 95%

RPXV 94%

VARV 95%

CMLV 95%

ECTV 93%

MPXV 95%

TATV 93%

Chordopoxvirinae

CNPV

FWPV

LSDV 66%

MYXV 65%

MOCV

ORFV

SWPV 61%

TANV 56%

CPXV knockout-library

Consecutive number	104
Corresponding mutant BAC	pBRFseR d101
No of ORF	101
Gene in Genbank	CPXV101
Gene at PBR	CPXV-BR-104
VACV-COP homologs	L3L
Protein function	Internal virion protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	350 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16282472>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041803

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=80

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d101.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 75%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 98%

ECTV 96%

MPXV 98%

TATV 96%

Chordopoxvirinae

CNPV 63%

FWPV 62%

LSDV 72%

MYXV 70%

MOCV 65%

ORFV 63%

SWPV 73%

TANV 75%

CPXV knockout-library

Consecutive number	105
Corresponding mutant BAC	pBRFseR d102
No of ORF	102
Gene in Genbank	CPXV102
Gene at PBR	CPXV-BR-105
VACV-COP homologs	L4R
Protein function	Core package and transcription protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	251 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8009841%208922477;%209321647>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041804

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=72

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d102.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 83%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 62%

FWPV 63%

LSDV 84%

MYXV 82%

MOCV 71%

ORFV 74%

SWPV 81%

TANV 83%

CPXV knockout-library

Consecutive number	106
Corresponding mutant BAC	pBRFseR d103
No of ORF	103
Gene in Genbank	CPXV103
Gene at PBR	CPXV-BR-106
VACV-COP homologs	L5R
Protein function	IMV entry and fusion protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	128 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16103150>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041805

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=93

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d103.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 68%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 100%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 57%

FWPV 57%

LSDV 71%

MYXV 68%

MOCV 52%

ORFV 56%

SWPV 71%

TANV 68%

CPXV knockout-library

Consecutive number	107
Corresponding mutant BAC	pBRFseR d104
No of ORF	104
Gene in Genbank	CPXV104
Gene at PBR	CPXV-BR-107
VACV-COP homologs	J1R
Protein function	Virion morphogenesis protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	152 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=12208937%2015956550>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041806

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=343

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d104.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 69%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 63%

FWPV 62%

LSDV 76%

MYXV 71%

MOCV 68%

ORFV 57%

SWPV 77%

TANV 69%

CPXV knockout-library

Consecutive number	108
Corresponding mutant BAC	pBRF
No of ORF	105 TK
Gene in Genbank	CPXV105
Gene at PBR	CPXV-BR-108
VACV-COP homologs	J2R
Protein function	Thymidine kinase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	177 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041807

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=32

Genbank file <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR.gb>

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 78%

VACV-MVA 98%

HSPV 97%

RPXV 98%

VARV 98%

CMLV 98%

ECTV 98%

MPXV 99%

TATV 98%

Chordopoxvirinae

CNPV 69%

FWPV 68%

LSDV 80%

MYXV 81%

MOCV

ORFV

SWPV 78%

TANV 78%

CPXV knockout-library

Consecutive number	109
Corresponding mutant BAC	pBRFseR d106
No of ORF	106
Gene in Genbank	CPXV106
Gene at PBR	CPXV-BR-109
VACV-COP homologs	J3R
Protein function	Poly(A) polymerase small subunit
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	333 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	87%
VACV-MVA	100%
HSPV	99%
RPXV	99%
VARV	99%
CMLV	99%
ECTV	100%
MPXV	100%
TATV	99%

Chordopoxvirinae

CNPV	76%
FWPV	74%
LSDV	88%
MYXV	89%
MOCV	73%
ORFV	73%
SWPV	89%
TANV	87%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8051170>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041808

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=71

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d106.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d106.ab1>

CPXV knockout-library

Consecutive number	110
Corresponding mutant BAC	pBRFseR d107
No of ORF	107
Gene in Genbank	CPXV107
Gene at PBR	CPXV-BR-110
VACV-COP homologs	J4R
Protein function	RNA polymerase 22 subunit
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	185 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	88%
VACV-MVA	100%
HSPV	100%
RPXV	100%
VARV	100%
CMLV	100%
ECTV	100%
MPXV	100%
TATV	

Chordopoxvirinae

CNPV	78%
FWPV	80%
LSDV	86%
MYXV	82%
MOCV	78%
ORFV	77%
SWPV	84%
TANV	88%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=10366585%203517852%202911120>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041809

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=344

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d107.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d107.ab1>

CPXV knockout-library

Consecutive number	111
Corresponding mutant BAC	pBRFseR d108
No of ORF	108
Gene in Genbank	CPXV108
Gene at PBR	CPXV-BR-111
VACV-COP homologs	J5L
Protein function	Unknown membrane protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	133 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=7483829>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041810

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=226

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d108.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d108.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 81%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 69%

FWPV 67%

LSDV 75%

MYXV 79%

MOCV 72%

ORFV 71%

SWPV 78%

TANV 81%

CPXV knockout-library

Consecutive number	112
Corresponding mutant BAC	pBRFseR d109
No of ORF	109
Gene in Genbank	CPXV109
Gene at PBR	CPXV-BR-112
VACV-COP homologs	J6R
Protein function	RNA polymerase 147 subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	1286 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	92%
VACV-MVA	100%
HSPV	100%
RPXV	100%
VARV	100%
CMLV	100%
ECTV	100%
MPXV	100%
TATV	100%

Chordopoxvirinae

CNPV	86%
FWPV	87%
LSDV	92%
MYXV	92%
MOCV	87%
ORFV	85%
SWPV	93%
TANV	92%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=3517852%202911120>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041811

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=215

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d109.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d109.ab1>

CPXV knockout-library

Consecutive number	113
Corresponding mutant BAC	pBRFseR d110
No of ORF	110
Gene in Genbank	CPXV110
Gene at PBR	CPXV-BR-113
VACV-COP homologs	H1L
Protein function	Serine/Tyrosine phosphatase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	171 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=7494294%2011238845%201848923%2018323605>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041812

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=88

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d110.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d110.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 83%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 67%

FWPV 70%

LSDV 83%

MYXV 82%

MOCV 75%

ORFV 59%

SWPV 80%

TANV 83%

CPXV knockout-library

Consecutive number	114
Corresponding mutant BAC	pBRFseR d111
No of ORF	111
Gene in Genbank	CPXV111
Gene at PBR	CPXV-BR-114
VACV-COP homologs	H2R
Protein function	Entry and cell to cell fusion protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	189 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=15795260>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041813

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=132

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d111.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d111.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 80%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 100%

CMLV 99%

ECTV 99%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 70%

FWPV 69%

LSDV 81%

MYXV 81%

MOCV 72%

ORFV 73%

SWPV 80%

TANV 80%

CPXV knockout-library

Consecutive number	115
Corresponding mutant BAC	pBRFseR d112
No of ORF	112
Gene in Genbank	CPXV112
Gene at PBR	CPXV-BR-115
VACV-COP homologs	H3L
Protein function	IMV heparin binding surface protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I, E!
Incorporated in VACV-WR virion	Yes
Length of protein	325 aa

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 62%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 99%

ECTV 99%

MPXV 97%

TATV 99%

Chordopoxvirinae

CNPV 52%

FWPV 50%

LSDV 63%

MYXV 61%

MOCV 53%

ORFV 54%

SWPV 63%

TANV 62%

Link in Pubmed	http://www.ncbi.nlm.nih.gov/pubmed?term=10708453%2010906204%2010906205
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041814
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=238
Genbank file	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d112.gb
Sequencing data	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d112.ab1

CPXV knockout-library

Consecutive number	116
Corresponding mutant BAC	pBRFseR d113
No of ORF	113
Gene in Genbank	CPXV113
Gene at PBR	CPXV-BR-116
VACV-COP homologs	H4L
Protein function	RNA polymerase associated protein RAP94
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	795 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	85%
VACV-MVA	99%
HSPV	100%
RPXV	100%
VARV	99%
CMLV	100%
ECTV	99%
MPXV	100%
TATV	100%

Chordopoxvirinae

CNPV	73%
FWPV	72%
LSDV	86%
MYXV	83%
MOCV	79%
ORFV	73%
SWPV	85%
TANV	85%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8125977%201565650%208188718%208107201>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041815

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=67

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d113.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d113.ab1>

CPXV knockout-library

Consecutive number	117
Corresponding mutant BAC	pBRFseR d114
No of ORF	114
Gene in Genbank	CPXV114
Gene at PBR	CPXV-BR-117
VACV-COP homologs	H5R
Protein function	Viral late transcription factor 4
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	206 aa

Homology to orthologs in

Orthopoxviruses

VACV	95%
VACV-Cop	54%
VACV-MVA	95%
HSPV	95%
RPXV	95%
VARV	92%
CMLV	93%
ECTV	93%
MPXV	94%
TATV	95%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	55%
MYXV	52%
MOCV	40%
ORFV	47%
SWPV	49%
TANV	54%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20206959%2017376501%2011001589%209636370%208794318>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041816

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=345

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d114.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d114.ab1>

CPXV knockout-library

Consecutive number	118
Corresponding mutant BAC	pBRFseR d115
No of ORF	115
Gene in Genbank	CPXV115
Gene at PBR	CPXV-BR-118
VACV-COP homologs	H6R
Protein function	Topoisomerase type I
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	314 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2823264%20%2012972642>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041817

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=65

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d115.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d115.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 82%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 99%

MPXV 100%

TATV 99%

Chordopoxvirinae

CNPV 78%

FWPV 76%

LSDV 84%

MYXV 80%

MOCV 75%

ORFV 75%

SWPV 81%

TANV 82%

CPXV knockout-library

Consecutive number 119

Corresponding mutant BAC pBRFseR d117/116

No of ORF 116

Gene in Genbank CPXV116

Gene at PBR CPXV-BR-119

VACV-COP homologs

Protein function Unknown

Plaques upon transfection (expression) nd

Result of passages nd

Result for mutant nd

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 60 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041818

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=778

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d117_d116.gb

Sequencing data http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d116_117.ab1

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	120
Corresponding mutant BAC	pBRFseR d117/116
No of ORF	117
Gene in Genbank	CPXV117
Gene at PBR	CPXV-BR-120
VACV-COP homologs	H7R
Protein function	Crescent formation
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	146 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=19553304>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041819

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=346

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d117_d116.gb

Sequencing data http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d116_117.ab1

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 69%

VACV-MVA 99%

HSPV 98%

RPXV 98%

VARV 97%

CMLV 98%

ECTV 97%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 53%

FWPV 54%

LSDV 70%

MYXV 64%

MOCV 57%

ORFV

SWPV 68%

TANV 69%

CPXV knockout-library

Consecutive number	121
Corresponding mutant BAC	pBRFseR d118
No of ORF	118
Gene in Genbank	CPXV118
Gene at PBR	CPXV-BR-121
VACV-COP homologs	D1R
Protein function	Large capping enzyme
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	844 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	85%
VACV-MVA	100%
HSPV	100%
RPXV	100%
VARV	100%
CMLV	100%
ECTV	99%
MPXV	99%
TATV	100%

Chordopoxvirinae

CNPV	75%
FWPV	76%
LSDV	83%
MYXV	82%
MOCV	80%
ORFV	77%
SWPV	83%
TANV	85%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1194287%206090698%208662636%206264433>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041820

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=139

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d118.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d118.ab1>

CPXV knockout-library

Consecutive number	122
Corresponding mutant BAC	pBRFseR d119
No of ORF	119
Gene in Genbank	CPXV119
Gene at PBR	CPXV-BR-122
VACV-COP homologs	D2L
Protein function	Virion core
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	146 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041821

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=348

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d119_d119A.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d119.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 69%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 98%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 46%

FWPV 48%

LSDV 60%

MYXV 62%

MOCV 55%

ORFV 51%

SWPV 69%

TANV 69%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	124
Corresponding mutant BAC	pBRFseR d120
No of ORF	120
Gene in Genbank	CPXV120
Gene at PBR	CPXV-BR-124
VACV-COP homologs	D3R
Protein function	Virion core protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	237 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041823

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=308

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d120.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d120.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 58%

VACV-MVA 98%

HSPV 98%

RPXV 100%

VARV 97%

CMLV 97%

ECTV 99%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV 53%

MYXV 49%

MOCV 45%

ORFV

SWPV 56%

TANV 58%

CPXV knockout-library

Consecutive number	125
Corresponding mutant BAC	pBRFseR d121 (Dav)
No of ORF	121
Gene in Genbank	CPXV121
Gene at PBR	CPXV-BR-125
VACV-COP homologs	D4R
Protein function	Uracil DNA glycosylase
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	218 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8474156>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041824

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=225

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d121.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d121.ab1>

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	88%
VACV-MVA	100%
HSPV	99%
RPXV	99%
VARV	99%
CMLV	99%
ECTV	99%
MPXV	99%
TATV	99%

Chordopoxvirinae

CNPV	71%
FWPV	73%
LSDV	85%
MYXV	85%
MOCV	73%
ORFV	83%
SWPV	88%
TANV	88%

CPXV knockout-library

Consecutive number	126
Corresponding mutant BAC	pBRFseR d122
No of ORF	122
Gene in Genbank	CPXV122
Gene at PBR	CPXV-BR-126
VACV-COP homologs	D5R
Protein function	NTPase and DNA replication protein
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	785 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041825

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=97

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d122.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d122.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 85%

VACV-MVA 100%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 74%

FWPV 75%

LSDV 84%

MYXV 83%

MOCV 76%

ORFV 75%

SWPV 84%

TANV 85%

CPXV knockout-library

Consecutive number	127
Corresponding mutant BAC	pBRFseR d123
No of ORF	123
Gene in Genbank	CPXV123
Gene at PBR	CPXV-BR-127
VACV-COP homologs	D6R
Protein function	Viral early transcription factor small subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	637 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2138681%208350421%202190222%208139039>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041826

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=177

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d123.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 91%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 86%

FWPV 86%

LSDV 93%

MYXV 92%

MOCV 89%

ORFV 84%

SWPV 92%

TANV 91%

CPXV knockout-library

Consecutive number	128
Corresponding mutant BAC	pBRFseR d124
No of ORF	124
Gene in Genbank	CPXV124
Gene at PBR	CPXV-BR-128
VACV-COP homologs	D7R
Protein function	RNA polymerase 18 subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	161 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2335825%202219712%20>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041827

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=224

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d124.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d124.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 84%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 99%

ECTV 99%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV 74%

FWPV 73%

LSDV 83%

MYXV 81%

MOCV 78%

ORFV 75%

SWPV 80%

TANV 84%

CPXV knockout-library

Consecutive number	129
Corresponding mutant BAC	pBRFseR d125
No of ORF	125
Gene in Genbank	CPXV125
Gene at PBR	CPXV-BR-129
VACV-COP homologs	D8L
Protein function	Carbonic anhydrase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	304 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8515749>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041828

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=577

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d125.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop

VACV-MVA 97%

HSPV 97%

RPXV 99%

VARV 98%

CMLV 97%

ECTV 98%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV 49%

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	130
Corresponding mutant BAC	pBRFseR d126
No of ORF	126
Gene in Genbank	CPXV126
Gene at PBR	CPXV-BR-130
VACV-COP homologs	D9R
Protein function	NTP-PPH containing mutT motif
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	213 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16378957>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041829

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=297

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d126.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 78%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 69%

FWPV 66%

LSDV 74%

MYXV 72%

MOCV 67%

ORFV

SWPV 75%

TANV 78%

CPXV knockout-library

Consecutive number	131
Corresponding mutant BAC	pBRFseR d127
No of ORF	127
Gene in Genbank	CPXV127
Gene at PBR	CPXV-BR-131
VACV-COP homologs	D10R
Protein function	NPH-PPH RNA levels regulator containing mutT motif
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	248 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20639534%2017283339%2019210265%20%20%20%2016378957>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041830

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=69

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d127.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 70%

VACV-MVA 100%

HSPV 100%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 98%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 56%

FWPV 58%

LSDV 72%

MYXV 66%

MOCV 61%

ORFV 57%

SWPV 65%

TANV 70%

CPXV knockout-library

Consecutive number	132
Corresponding mutant BAC	pBRFseR d128
No of ORF	128
Gene in Genbank	CPXV128
Gene at PBR	CPXV-BR-132
VACV-COP homologs	D11L
Protein function	Helicase NPH-I
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	631 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2437324%209636376%209472022%204364422%203025846>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041831

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=191

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d128.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 87%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 77%

FWPV 78%

LSDV 86%

MYXV 84%

MOCV 80%

ORFV 76%

SWPV 84%

TANV 87%

CPXV knockout-library

Consecutive number	133
Corresponding mutant BAC	pBRFseR d129/130
No of ORF	129
Gene in Genbank	CPXV129
Gene at PBR	CPXV-BR-133
VACV-COP homologs	D12L
Protein function	Small capping enzyme
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	287 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8195132%201194287%202552660>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041832

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=103

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d129_d130.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 90%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 76%

FWPV 76%

LSDV 90%

MYXV 88%

MOCV 82%

ORFV 78%

SWPV 91%

TANV 90%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	135
Corresponding mutant BAC	pBRFseR d131
No of ORF	131
Gene in Genbank	CPXV131
Gene at PBR	CPXV-BR-135
VACV-COP homologs	D13L
Protein function	Virion coat protein rifampicin resistance
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	551 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1546459>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041834

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=127

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d131.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d131.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 87%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 75%

FWPV 74%

LSDV 84%

MYXV 85%

MOCV 81%

ORFV 78%

SWPV 85%

TANV 87%

CPXV knockout-library

Consecutive number	136
Corresponding mutant BAC	pBRFseR d132
No of ORF	132
Gene in Genbank	CPXV132
Gene at PBR	CPXV-BR-136
VACV-COP homologs	A1L
Protein function	Viral late transcription factor 2
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	150 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2344616%201566576>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041835

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=61

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d132.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 85%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 99%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 70%

FWPV 69%

LSDV 79%

MYXV 82%

MOCV 74%

ORFV 61%

SWPV 77%

TANV 85%

CPXV knockout-library

Consecutive number	137
Corresponding mutant BAC	pBRFseR d133
No of ORF	133
Gene in Genbank	CPXV133
Gene at PBR	CPXV-BR-137
VACV-COP homologs	A2L
Protein function	Viral late transcription factor 3
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	224 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2344616>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041836

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=201

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d133.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 95%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 89%

FWPV 87%

LSDV 95%

MYXV 95%

MOCV 89%

ORFV 87%

SWPV 94%

TANV 95%

CPXV knockout-library

Consecutive number	138
Corresponding mutant BAC	pBRFseR d134
No of ORF	134
Gene in Genbank	CPXV134
Gene at PBR	CPXV-BR-138
VACV-COP homologs	A2.5L
Protein function	Thioredoxin like protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	76 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=12350360>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041837

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=355

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d134.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 76%

VACV-MVA 100%

HSPV 99%

RPXV 100%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 95%

TATV 99%

Chordopoxvirinae

CNPV 57%

FWPV 62%

LSDV 69%

MYXV 76%

MOCV 59%

ORFV 60%

SWPV 67%

TANV 76%

CPXV knockout-library

Consecutive number	139
Corresponding mutant BAC	pBRFseR d135
No of ORF	135
Gene in Genbank	CPXV135
Gene at PBR	CPXV-BR-139
VACV-COP homologs	A3L
Protein function	P4b precursor
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	644 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2999438>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041838

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=151

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d135.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 81%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 99%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 99%

Chordopoxvirinae

CNPV 71%

FWPV 72%

LSDV 80%

MYXV 81%

MOCV 75%

ORFV 64%

SWPV 82%

TANV 81%

CPXV knockout-library

Consecutive number	140
Corresponding mutant BAC	pBRFseR d136
No of ORF	136
Gene in Genbank	CPXV136
Gene at PBR	CPXV-BR-140
VACV-COP homologs	A4L
Protein function	Core protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	295 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=8794334>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041839

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=429

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d136.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	91%
VACV-Cop	
VACV-MVA	89%
HSPV	89%
RPXV	92%
VARV	88%
CMLV	90%
ECTV	91%
MPXV	89%
TATV	92%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	39%
ORFV	56%
SWPV	
TANV	

CPXV knockout-library

Consecutive number	141
Corresponding mutant BAC	pBRFseR d137
No of ORF	137
Gene in Genbank	CPXV137
Gene at PBR	CPXV-BR-141
VACV-COP homologs	A5R
Protein function	RNA polymerase 19 subunit
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	164 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1731116>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041840

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=169

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d137.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 79%

VACV-MVA 100%

HSPV 99%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 98%

TATV 100%

Chordopoxvirinae

CNPV 62%

FWPV 68%

LSDV 76%

MYXV 73%

MOCV 70%

ORFV 67%

SWPV 78%

TANV 79%

CPXV knockout-library

Consecutive number	142
Corresponding mutant BAC	pBRFseR d138
No of ORF	138
Gene in Genbank	CPXV138
Gene at PBR	CPXV-BR-142
VACV-COP homologs	A6L
Protein function	Virion morphogenesis protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	372 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=17108027%2022398288>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041841

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=357

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d138.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 79%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 66%

FWPV 66%

LSDV 81%

MYXV 78%

MOCV 73%

ORFV 71%

SWPV 81%

TANV 79%

CPXV knockout-library

Consecutive number	143
Corresponding mutant BAC	pBRFseR d139
No of ORF	139
Gene in Genbank	CPXV139
Gene at PBR	CPXV-BR-143
VACV-COP homologs	A7L
Protein function	Viral early transcription factor large subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	710 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2190222>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041842

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=114

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d139.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d139.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 86%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 78%

FWPV 78%

LSDV 86%

MYXV 86%

MOCV 79%

ORFV 77%

SWPV 85%

TANV 86%

CPXV knockout-library

Consecutive number	144
Corresponding mutant BAC	pBRFseR d140
No of ORF	140
Gene in Genbank	CPXV140
Gene at PBR	CPXV-BR-144
VACV-COP homologs	A8R
Protein function	Viral intermediate transcription factor 3
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	288 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=10077573>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041843

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=358

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d140.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 81%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 69%

FWPV 68%

LSDV 79%

MYXV 82%

MOCV 68%

ORFV 68%

SWPV 80%

TANV 81%

CPXV knockout-library

Consecutive number	145
Corresponding mutant BAC	pBRFseR d141
No of ORF	141
Gene in Genbank	CPXV141
Gene at PBR	CPXV-BR-145
VACV-COP homologs	A9L
Protein function	Membrane protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	121 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=11000242>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041844

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=164

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d141.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	87%
VACV-Cop	81%
VACV-MVA	76%
HSPV	80%
RPXV	80%
VARV	79%
CMLV	92%
ECTV	90%
MPXV	87%
TATV	87%

Chordopoxvirinae

CNPV	68%
FWPV	71%
LSDV	83%
MYXV	82%
MOCV	74%
ORFV	85%
SWPV	81%
TANV	81%

CPXV knockout-library

Consecutive number	146
Corresponding mutant BAC	pBRFseR d142
No of ORF	142
Gene in Genbank	CPXV142
Gene at PBR	CPXV-BR-146
VACV-COP homologs	A10L
Protein function	P4a precursor
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	894 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16469055%2011390580>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041845

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=143

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d142.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 72%

VACV-MVA 98%

HSPV 98%

RPXV 98%

VARV 98%

CMLV 98%

ECTV 98%

MPXV 97%

TATV 98%

Chordopoxvirinae

CNPV 63%

FWPV 62%

LSDV 71%

MYXV 69%

MOCV 67%

ORFV 62%

SWPV 71%

TANV 72%

CPXV knockout-library

Consecutive number	147
Corresponding mutant BAC	pBRFseR d143
No of ORF	143
Gene in Genbank	CPXV143
Gene at PBR	CPXV-BR-147
VACV-COP homologs	A11R
Protein function	Membrane formation protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	318 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=15890898>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041846

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=142

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d143.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 75%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 59%

FWPV 60%

LSDV 75%

MYXV 76%

MOCV 66%

ORFV 66%

SWPV 75%

TANV 75%

CPXV knockout-library

Consecutive number	148
Corresponding mutant BAC	pBRFseR d144
No of ORF	144
Gene in Genbank	CPXV144
Gene at PBR	CPXV-BR-148
VACV-COP homologs	A12L
Protein function	Structural protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	190 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=17625005%2017678539>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041847

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=359

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d144.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d144.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 64%

VACV-MVA 95%

HSPV 98%

RPXV 97%

VARV 97%

CMLV 98%

ECTV 97%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV 56%

FWPV 55%

LSDV 61%

MYXV 59%

MOCV 60%

ORFV 56%

SWPV 62%

TANV 64%

CPXV knockout-library

Consecutive number	149
Corresponding mutant BAC	pBRFseR d145
No of ORF	145
Gene in Genbank	CPXV145
Gene at PBR	CPXV-BR-149
VACV-COP homologs	A13L
Protein function	Virion maturation protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	70 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=15280497%2022398288>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041848

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=361

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d145.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA 97%

HSPV 97%

RPXV 99%

VARV 96%

CMLV 99%

ECTV 91%

MPXV 97%

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	150
Corresponding mutant BAC	pBRFseR d146
No of ORF	146
Gene in Genbank	CPXV146
Gene at PBR	CPXV-BR-150
VACV-COP homologs	A14L
Protein function	IMV membrane protein (phosphorylated)
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	90 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=12885904%2010729144>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041849

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=362

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d146.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 71%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 57%

FWPV 68%

LSDV 78%

MYXV 69%

MOCV 67%

ORFV 73%

SWPV 73%

TANV 71%

CPXV knockout-library

Consecutive number	151
Corresponding mutant BAC	pBRFseR d147
No of ORF	147
Gene in Genbank	CPXV147
Gene at PBR	CPXV-BR-151
VACV-COP homologs	A14.5L
Protein function	IMV virulence factor (membrane protein)
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	nd
Length of protein	53 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=10756020>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041850

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=363

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d147.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 80%

VACV-MVA 100%

HSPV 98%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 62%

FWPV 72%

LSDV 76%

MYXV 84%

MOCV 70%

ORFV 72%

SWPV 75%

TANV 80%

CPXV knockout-library

Consecutive number	152
Corresponding mutant BAC	pBRFseR d148
No of ORF	148
Gene in Genbank	CPXV148
Gene at PBR	CPXV-BR-152
VACV-COP homologs	A15L
Protein function	Unknown
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	94 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041851

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=364

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d148.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 68%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV

FWPV

LSDV 67%

MYXV 66%

MOCV 57%

ORFV

SWPV 63%

TANV 68%

CPXV knockout-library

Consecutive number	153
Corresponding mutant BAC	pBRFseR d149
No of ORF	149
Gene in Genbank	CPXV149
Gene at PBR	CPXV-BR-153
VACV-COP homologs	A16L
Protein function	Entry and cell to cell fusion protein (myristilated)
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	377 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=22278246>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041852

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=123

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d149.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 71%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 98%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV 60%

FWPV 60%

LSDV 73%

MYXV 66%

MOCV 59%

ORFV 58%

SWPV 68%

TANV 71%

CPXV knockout-library

Consecutive number	154
Corresponding mutant BAC	pBRFseR d150
No of ORF	150
Gene in Genbank	CPXV150
Gene at PBR	CPXV-BR-154
VACV-COP homologs	A17L
Protein function	IMV membrane protein phosphorylated
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	202 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=21590268>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041853

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=365

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d150.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 64%

VACV-MVA 98%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV 61%

FWPV 59%

LSDV 59%

MYXV 61%

MOCV 64%

ORFV 53%

SWPV 61%

TANV 64%

CPXV knockout-library

Consecutive number	155
Corresponding mutant BAC	pBRFseR d151
No of ORF	151
Gene in Genbank	CPXV151
Gene at PBR	CPXV-BR-155
VACV-COP homologs	A18R
Protein function	DNA helicase
Plaques upon transfection (expression)	early
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	492 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1994577>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041854

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=70

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d151.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 77%

VACV-MVA 98%

HSPV 98%

RPXV 99%

VARV 98%

CMLV 97%

ECTV 98%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV 70%

FWPV 69%

LSDV 76%

MYXV 74%

MOCV 68%

ORFV 71%

SWPV 74%

TANV 77%

CPXV knockout-library

Consecutive number	156
Corresponding mutant BAC	pBRFseR d152/152A
No of ORF	152
Gene in Genbank	CPXV152
Gene at PBR	CPXV-BR-156
VACV-COP homologs	A19L
Protein function	Unknown
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	77 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041855

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=366

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d152_d152A.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 77%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 95%

CMLV 99%

ECTV 97%

MPXV 100%

TATV 97%

Chordopoxvirinae

CNPV 55%

FWPV 61%

LSDV 76%

MYXV 78%

MOCV 65%

ORFV 65%

SWPV 78%

TANV 77%

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	158
Corresponding mutant BAC	pBRFseR d153
No of ORF	153
Gene in Genbank	CPXV153
Gene at PBR	CPXV-BR-158
VACV-COP homologs	A21L
Protein function	Entry and cell to cell fusion protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	117 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=16014909>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041857

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=239

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d153.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 70%

VACV-MVA 100%

HSPV 99%

RPXV 100%

VARV 99%

CMLV 99%

ECTV 98%

MPXV 98%

TATV 100%

Chordopoxvirinae

CNPV 63%

FWPV 62%

LSDV 73%

MYXV 77%

MOCV 61%

ORFV 57%

SWPV 72%

TANV 70%

CPXV knockout-library

Consecutive number	159
Corresponding mutant BAC	pBRFseR d154
No of ORF	154
Gene in Genbank	CPXV154
Gene at PBR	CPXV-BR-159
VACV-COP homologs	A20R
Protein function	DNA processivity factor
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	426 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=21572084%2016326701>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041858

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=367

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d154.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 66%

VACV-MVA 100%

HSPV 99%

RPXV 100%

VARV 99%

CMLV 98%

ECTV 99%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV 49%

FWPV 50%

LSDV 66%

MYXV 64%

MOCV 59%

ORFV 51%

SWPV 66%

TANV 66%

CPXV knockout-library

Consecutive number	160
Corresponding mutant BAC	pBRFseR d155
No of ORF	155
Gene in Genbank	CPXV155
Gene at PBR	CPXV-BR-160
VACV-COP homologs	A22R
Protein function	Holliday junction resolvase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	187 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	87%
VACV-MVA	98%
HSPV	99%
RPXV	99%
VARV	97%
CMLV	98%
ECTV	99%
MPXV	99%
TATV	99%

Chordopoxvirinae

CNPV	63%
FWPV	65%
LSDV	81%
MYXV	80%
MOCV	64%
ORFV	77%
SWPV	88%
TANV	87%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=17890227>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041859

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=165

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d155.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d155.ab1>

CPXV knockout-library

Consecutive number	161
Corresponding mutant BAC	pBRFseR d156
No of ORF	156
Gene in Genbank	CPXV156
Gene at PBR	CPXV-BR-161
VACV-COP homologs	A23R
Protein function	Viral intermediate transcription factor 3 (45kDa subunit)
Plaques upon transfection (expression)	early & late
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	382 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=10077573>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041860

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=101

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d156.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 77%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 71%

FWPV 72%

LSDV 77%

MYXV 75%

MOCV 69%

ORFV 70%

SWPV 76%

TANV 77%

CPXV knockout-library

Consecutive number	162
Corresponding mutant BAC	pBRFseR d157
No of ORF	157 rpo132
Gene in Genbank	CPXV157
Gene at PBR	CPXV-BR-162
VACV-COP homologs	A24R
Protein function	RNA polymerase 132 subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	1164 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=2915377>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041861

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=77

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d157rpo132.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d157.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 92%

VACV-MVA 100%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 89%

FWPV 88%

LSDV 93%

MYXV 92%

MOCV 90%

ORFV 86%

SWPV 93%

TANV 92%

CPXV knockout-library

Consecutive number	163
Corresponding mutant BAC	pBRFseR d158
No of ORF	158 ati
Gene in Genbank	CPXV158
Gene at PBR	CPXV-BR-163
VACV-COP homologs	A26L; A25L
Protein function	A-type inclusion protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	1284 aa

Homology to orthologs in

Orthopoxviruses

VACV	88%
VACV-Cop	
VACV-MVA	
HSPV	95%
RPXV	
VARV	92%
CMLV	95%
ECTV	70%
MPXV	95%
TATV	95%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20538855>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041862

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=368

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d158ati.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d158.ab1>

CPXV knockout-library

Consecutive number	164
Corresponding mutant BAC	pBRFseR d159
No of ORF	159 P160
Gene in Genbank	CPXV159
Gene at PBR	CPXV-BR-164
VACV-COP homologs	
Protein function	P4c precursor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	192 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20538855>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041863

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=369

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d159.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	88%
VACV-Cop	
VACV-MVA	
HSPV	87%
RPXV	86%
VARV	84%
CMLV	82%
ECTV	88%
MPXV	94%
TATV	89%

Chordopoxvirinae

CNPV	47%
FWPV	42%
LSDV	70%
MYXV	
MOCV	52%
ORFV	63%
SWPV	
TANV	

CPXV knockout-library

Consecutive number	165
Corresponding mutant BAC	
No of ORF	160
Gene in Genbank	CPXV160
Gene at PBR	CPXV-BR-165
VACV-COP homologs	
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	68 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	
VACV-MVA	
HSPV	
RPXV	
VARV	
CMLV	96%
ECTV	
MPXV	
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041864
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=723
Genbank file	
Sequencing data	

CPXV knockout-library

Consecutive number	166
Corresponding mutant BAC	pBRFseR d161
No of ORF	161
Gene in Genbank	CPXV161
Gene at PBR	CPXV-BR-166
VACV-COP homologs	A26L
Protein function	P4c precursor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	260 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20538855>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041865

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=369

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d161.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d161.ab1>

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	
VACV-MVA	97%
HSPV	97%
RPXV	98%
VARV	98%
CMLV	99%
ECTV	98%
MPXV	98%
TATV	99%

Chordopoxvirinae

CNPV	45%
FWPV	47%
LSDV	
MYXV	
MOCV	48%
ORFV	47%
SWPV	
TANV	

CPXV knockout-library

Consecutive number	167
Corresponding mutant BAC	pBRFseR d162
No of ORF	162
Gene in Genbank	CPXV162
Gene at PBR	CPXV-BR-167
VACV-COP homologs	A27L
Protein function	Fusion protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	110 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=19858217%2018842719>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041866

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=578

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d162.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d162.ab1>

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	
VACV-MVA	98%
HSPV	99%
RPXV	100%
VARV	100%
CMLV	100%
ECTV	97%
MPXV	96%
TATV	97%

Chordopoxvirinae

CNPV	63%
FWPV	66%
LSDV	
MYXV	
MOCV	60%
ORFV	55%
SWPV	
TANV	

CPXV knockout-library

Consecutive number	168
Corresponding mutant BAC	pBRFseR d163
No of ORF	163
Gene in Genbank	CPXV163
Gene at PBR	CPXV-BR-168
VACV-COP homologs	A28L
Protein function	IMV virus entry (membrane protein)
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	146 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=14963132%2017499330>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041867

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=185

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d163.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 72%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 97%

ECTV 98%

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV 59%

FWPV 60%

LSDV 71%

MYXV 68%

MOCV 67%

ORFV 64%

SWPV 69%

TANV 72%

CPXV knockout-library

Consecutive number	169
Corresponding mutant BAC	pBRFseR d164
No of ORF	164
Gene in Genbank	CPXV164
Gene at PBR	CPXV-BR-169
VACV-COP homologs	A29L
Protein function	RNA polymerase 35 subunit
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	305 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041868

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=64

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d164.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 76%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV 64%

FWPV 67%

LSDV 77%

MYXV 76%

MOCV 69%

ORFV 62%

SWPV 77%

TANV 76%

CPXV knockout-library

Consecutive number	170
Corresponding mutant BAC	pBRFseR d165
No of ORF	165
Gene in Genbank	CPXV165
Gene at PBR	CPXV-BR-170
VACV-COP homologs	A30L
Protein function	Virion morphogenesis protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	76 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=11390577%2011602762>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041869

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=370

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d165.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 85%

VACV-MVA 97%

HSPV 97%

RPXV 97%

VARV 97%

CMLV 97%

ECTV 97%

MPXV 97%

TATV 97%

Chordopoxvirinae

CNPV

FWPV 74%

LSDV 63%

MYXV 73%

MOCV 68%

ORFV

SWPV 66%

TANV 85%

CPXV knockout-library

Consecutive number	171
Corresponding mutant BAC	
No of ORF	0
Gene in Genbank	-
Gene at PBR	CPXV-BR-171
VACV-COP homologs	A30.5L
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	0
Incorporated in VACV-WR virion	Yes
Length of protein	42 aa

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041870
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=371
Genbank file	
Sequencing data	

Homology to orthologs in

Orthopoxviruses

VACV	95%
VACV-Cop	
VACV-MVA	95%
HSPV	
RPXV	95%
VARV	95%
CMLV	95%
ECTV	98%
MPXV	95%
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

CPXV knockout-library

Consecutive number	172
Corresponding mutant BAC	pBRFseR d166
No of ORF	166
Gene in Genbank	CPXV166
Gene at PBR	CPXV-BR-172
VACV-COP homologs	A31R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	140 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041871

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=372

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d166.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 89%

VACV-Cop

VACV-MVA 89%

HSPV 93%

RPXV 89%

VARV 91%

CMLV 92%

ECTV 87%

MPXV 95%

TATV 90%

Chordopoxvirinae

CNPV 58%

FWPV 60%

LSDV

MYXV

MOCV 65%

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	173
Corresponding mutant BAC	pBRFseR d167
No of ORF	167
Gene in Genbank	CPXV167
Gene at PBR	CPXV-BR-173
VACV-COP homologs	A32L
Protein function	DNA packaging and ATPase protein
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	311 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=9621036%208470370>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041872

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=154

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d167.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d167.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 76%

VACV-MVA 100%

HSPV 100%

RPXV 99%

VARV 99%

CMLV 99%

ECTV 100%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 65%

FWPV 68%

LSDV 75%

MYXV 75%

MOCV 71%

ORFV 71%

SWPV 75%

TANV 76%

CPXV knockout-library

Consecutive number	174
Corresponding mutant BAC	pBRFseR d168
No of ORF	168
Gene in Genbank	CPXV168
Gene at PBR	CPXV-BR-174
VACV-COP homologs	A33R
Protein function	EEV glycoprotein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	187 aa

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	59%
VACV-MVA	97%
HSPV	97%
RPXV	97%
VARV	94%
CMLV	95%
ECTV	93%
MPXV	97%
TATV	95%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	56%
MYXV	58%
MOCV	
ORFV	45%
SWPV	53%
TANV	59%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=20032175%2020302896%2020378144%2020947114%2022623782%203255618>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041873

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=434

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d168.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d168.ab1>

CPXV knockout-library

Consecutive number	175
Corresponding mutant BAC	pBRFseR d169
No of ORF	169
Gene in Genbank	CPXV169
Gene at PBR	CPXV-BR-175
VACV-COP homologs	A34R
Protein function	EEV C-type lectin-like protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	168 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=18094186%203255618>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041874

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=374

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d169.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d169.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 100%

VACV-Cop 69%

VACV-MVA 99%

HSPV 100%

RPXV 100%

VARV 100%

CMLV 100%

ECTV 99%

MPXV 100%

TATV 100%

Chordopoxvirinae

CNPV 43%

FWPV

LSDV 64%

MYXV 67%

MOCV

ORFV 45%

SWPV 69%

TANV 69%

CPXV knockout-library

Consecutive number	176
Corresponding mutant BAC	pBRFseR d170-171
No of ORF	170
Gene in Genbank	CPXV170
Gene at PBR	CPXV-BR-176
VACV-COP homologs	A_ORF_M
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	61 aa

Homology to orthologs in

Orthopoxviruses

VACV	93%
VACV-Cop	
VACV-MVA	
HSPV	
RPXV	
VARV	
CMLV	
ECTV	
MPXV	
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041875

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=704

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d170_171.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d170.ab1>

CPXV knockout-library

Consecutive number 177

Corresponding mutant BAC pBRFseR d170-171

No of ORF 171

Gene in Genbank CPXV171

Gene at PBR CPXV-BR-177

VACV-COP homologs A35R

Protein function Unknown

Plaques upon transfection (expression) nd

Result of passages nd

Result for mutant nd

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 176 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041876

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=435

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d170_171.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d170.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 56%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV

CMLV 99%

ECTV 99%

MPXV 99%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV 53%

MYXV 51%

MOCV 46%

ORFV 45%

SWPV 58%

TANV 56%

CPXV knockout-library

Consecutive number 178

Corresponding mutant BAC pBRFseR d172

No of ORF 172

Gene in Genbank CPXV172

Gene at PBR CPXV-BR-178

VACV-COP homologs A36R

Protein function IEV specific

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.1

Incorporated in VACV-WR virion nd

Length of protein 224 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041877

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=619

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d172.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d172.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA 93%

HSPV 97%

RPXV 97%

VARV 94%

CMLV 94%

ECTV 94%

MPXV 95%

TATV 96%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	179
Corresponding mutant BAC	pBRFseR d173
No of ORF	173
Gene in Genbank	CPXV173
Gene at PBR	CPXV-BR-179
VACV-COP homologs	A37R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	263 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041878

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=439

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d173.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d173.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 51%

VACV-MVA 98%

HSPV 98%

RPXV 97%

VARV

CMLV 99%

ECTV

MPXV 98%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV 52%

MYXV 49%

MOCV

ORFV

SWPV 52%

TANV 51%

CPXV knockout-library

Consecutive number 180

Corresponding mutant BAC pBRFseR d174

No of ORF 174

Gene in Genbank CPXV174

Gene at PBR CPXV-BR-180

VACV-COP homologs

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 63 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041879

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=645

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d174.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d174.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop

VACV-MVA

HSPV 98%

RPXV

VARV 98%

CMLV 93%

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 181

Corresponding mutant BAC pBRFseR d175

No of ORF 175

Gene in Genbank CPXV175

Gene at PBR CPXV-BR-181

VACV-COP homologs A38L

Protein function CD47-like protein

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR I

Incorporated in VACV-WR virion nd

Length of protein 277 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041880

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=580

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d175.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d175.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 43%

VACV-MVA 99%

HSPV 98%

RPXV 99%

VARV 98%

CMLV 97%

ECTV 98%

MPXV 97%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV 44%

MYXV

MOCV

ORFV

SWPV

TANV 43%

CPXV knockout-library

Consecutive number 182

Corresponding mutant BAC pBRFseR d176

No of ORF 176

Gene in Genbank CPXV176

Gene at PBR CPXV-BR-182

VACV-COP homologs A39R

Protein function Semaphorin

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR L

Incorporated in VACV-WR virion nd

Length of protein 409 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041881

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=295

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d176.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d176.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA

HSPV 97%

RPXV 99%

VARV 84%

CMLV

ECTV 96%

MPXV

TATV

Chordopoxvirinae

CNPV 49%

FWPV 49%

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	183
Corresponding mutant BAC	pBRFseR d177
No of ORF	177
Gene in Genbank	CPXV177
Gene at PBR	CPXV-BR-183
VACV-COP homologs	A40R
Protein function	Lectin homolog
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	160 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=10466813>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041882

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=646

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d177.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d177.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 96%

VACV-Cop

VACV-MVA 94%

HSPV 92%

RPXV 96%

VARV 93%

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV 47%

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 184

Corresponding mutant BAC pBRFseR d178

No of ORF 178

Gene in Genbank CPXV178

Gene at PBR CPXV-BR-184

VACV-COP homologs A41L

Protein function Secreted virulence factor

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 218 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041883

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=621

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d178.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d178.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 95%

VACV-Cop

VACV-MVA 95%

HSPV 95%

RPXV 95%

VARV 94%

CMLV 94%

ECTV 95%

MPXV 96%

TATV 95%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	185
Corresponding mutant BAC	pBRFseR d179
No of ORF	179
Gene in Genbank	CPXV179
Gene at PBR	CPXV-BR-185
VACV-COP homologs	A42R
Protein function	Profilin homolog
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	Yes
Length of protein	133 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041884

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=622

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d179.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d179.ab1>

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	
VACV-MVA	96%
HSPV	99%
RPXV	100%
VARV	99%
CMLV	99%
ECTV	95%
MPXV	99%
TATV	99%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

CPXV knockout-library

Consecutive number 186

Corresponding mutant BAC pBRFseR d180

No of ORF 180

Gene in Genbank CPXV180

Gene at PBR CPXV-BR-186

VACV-COP homologs A43R

Protein function Membrane glycoprotein class I

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR I

Incorporated in VACV-WR virion nd

Length of protein 194 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041885

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=623

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d180.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d180.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop

VACV-MVA 96%

HSPV 95%

RPXV 98%

VARV 95%

CMLV 96%

ECTV 78%

MPXV 94%

TATV 95%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number

Corresponding mutant BAC

No of ORF

Gene in Genbank

Gene at PBR

VACV-COP homologs

Protein function

Plaques upon transfection (expression)

Result of passages

Result for mutant

Kinetic in VACV-WR

Incorporated in VACV-WR virion

Length of protein

Link in Pubmed

Link Gene in PBR

Link gene group in PBR

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	188
Corresponding mutant BAC	pBRFseR d182
No of ORF	182
Gene in Genbank	CPXV182
Gene at PBR	CPXV-BR-188
VACV-COP homologs	A44L
Protein function	Hydroxysteroid dehydrogenase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	345 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	63%
VACV-MVA	99%
HSPV	99%
RPXV	99%
VARV	96%
CMLV	99%
ECTV	97%
MPXV	99%
TATV	

Chordopoxvirinae

CNPV	60%
FWPV	58%
LSDV	
MYXV	
MOCV	64%
ORFV	
SWPV	64%
TANV	63%

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041887

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=293

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d182.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d182.ab1>

CPXV knockout-library

Consecutive number	189
Corresponding mutant BAC	pBRFseR d183
No of ORF	183
Gene in Genbank	CPXV183
Gene at PBR	CPXV-BR-189
VACV-COP homologs	A45R
Protein function	Superoxide dismutase-like protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	L
Incorporated in VACV-WR virion	Yes
Length of protein	125 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041888

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=243

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d183.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d183.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA 96%

HSPV 98%

RPXV 99%

VARV 98%

CMLV 99%

ECTV 98%

MPXV 98%

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV 55%

MYXV 53%

MOCV

ORFV

SWPV 49%

TANV

CPXV knockout-library

Consecutive number	190
Corresponding mutant BAC	pBRFseR d184
No of ORF	184
Gene in Genbank	CPXV184
Gene at PBR	CPXV-BR-190
VACV-COP homologs	A46R
Protein function	IL-1 signaling inhibitor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	242 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041889

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=624

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d184.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d184.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 97%

ECTV 98%

MPXV 97%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number 191

Corresponding mutant BAC pBRFseR d185

No of ORF 185

Gene in Genbank CPXV185

Gene at PBR CPXV-BR-191

VACV-COP homologs A47L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 244 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041890

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=625

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d185.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d185.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA 93%

HSPV 99%

RPXV 99%

VARV 98%

CMLV

ECTV 97%

MPXV

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	192
Corresponding mutant BAC	pBRFseR d186
No of ORF	186
Gene in Genbank	CPXV186
Gene at PBR	CPXV-BR-192
VACV-COP homologs	A48R
Protein function	Thymidylate kinase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	227 aa

Homology to orthologs in

Orthopoxviruses

VACV	100%
VACV-Cop	
VACV-MVA	100%
HSPV	100%
RPXV	100%
VARV	99%
CMLV	98%
ECTV	99%
MPXV	99%
TATV	

Chordopoxvirinae

CNPV	62%
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041891

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=626

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d186.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d186.ab1>

CPXV knockout-library

Consecutive number 193

Corresponding mutant BAC **pBRFseR d187**

No of ORF 187

Gene in Genbank **CPXV187**

Gene at PBR CPXV-BR-193

VACV-COP homologs A49R

Protein function Phosphotransferase anion transport protein (putative)

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 162 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041892

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=627

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d187.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d187.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA 98%

HSPV 98%

RPXV 98%

VARV 98%

CMLV

ECTV 94%

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	194
Corresponding mutant BAC	pBRFseR d188
No of ORF	188
Gene in Genbank	CPXV188
Gene at PBR	CPXV-BR-194
VACV-COP homologs	A50R
Protein function	DNA ligase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	554 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041893

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=292

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d188.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d188.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop

VACV-MVA 99%

HSPV 98%

RPXV 99%

VARV 99%

CMLV 98%

ECTV 99%

MPXV 99%

TATV 98%

Chordopoxvirinae

CNPV 68%

FWPV 69%

LSDV 73%

MYXV 71%

MOCV

ORFV

SWPV 72%

TANV

CPXV knockout-library

Consecutive number	195
Corresponding mutant BAC	pBRFseR d189
No of ORF	189
Gene in Genbank	CPXV189
Gene at PBR	CPXV-BR-195
VACV-COP homologs	A51R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	334 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041894

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=586

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d189.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d189.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 57%

VACV-MVA 97%

HSPV 99%

RPXV

VARV 99%

CMLV 99%

ECTV 99%

MPXV 99%

TATV 100%

Chordopoxvirinae

CNPV

FWPV

LSDV 53%

MYXV 54%

MOCV

ORFV

SWPV 53%

TANV 57%

CPXV knockout-library

Consecutive number	196
Corresponding mutant BAC	pBRFseR d190
No of ORF	190
Gene in Genbank	CPXV190
Gene at PBR	CPXV-BR-196
VACV-COP homologs	A52R; K7R
Protein function	Intracellular TLR and IL-1 signaling inhibitor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	190 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041895

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=588

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d190.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d190.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 51%

VACV-MVA 50%

HSPV 97%

RPXV 99%

VARV 94%

CMLV

ECTV 87%

MPXV

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV 50%

MYXV 56%

MOCV

ORFV

SWPV 56%

TANV 51%

CPXV knockout-library

Consecutive number	197
Corresponding mutant BAC	pBRFseR d191
No of ORF	191 CrmC
Gene in Genbank	CPXV191
Gene at PBR	CPXV-BR-197
VACV-COP homologs	A53R; C22L; B28R
Protein function	Tumor necrosis factor receptor (CrmC)
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	186 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041896

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=712

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d191CrmC.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d191.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 96%

VACV-Cop

VACV-MVA

HSPV 89%

RPXV 90%

VARV 47%

CMLV 49%

ECTV 57%

MPXV 46%

TATV 50%

Chordopoxvirinae

CNPV 41%

FWPV

LSDV

MYXV 43%

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	198
Corresponding mutant BAC	
No of ORF	192
Gene in Genbank	CPXV192
Gene at PBR	CPXV-BR-198
VACV-COP homologs	
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	50 aa

Homology to orthologs in

Orthopoxviruses

VACV	91%
VACV-Cop	
VACV-MVA	
HSPV	
RPXV	
VARV	
CMLV	
ECTV	
MPXV	
TATV	

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041897
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=780
Genbank file	
Sequencing data	

CPXV knockout-library

Consecutive number	199
Corresponding mutant BAC	pBRFseR d193
No of ORF	193
Gene in Genbank	CPXV193
Gene at PBR	CPXV-BR-199
VACV-COP homologs	A55R; C2L; F3L
Protein function	Kelch like
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	563 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041898

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=589

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d193.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d193.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 54%

VACV-MVA 41%

HSPV 97%

RPXV 98%

VARV

CMLV 97%

ECTV 96%

MPXV 41%

TATV 43%

Chordopoxvirinae

CNPV

FWPV

LSDV 47%

MYXV 52%

MOCV

ORFV

SWPV 52%

TANV 54%

CPXV knockout-library

Consecutive number	200
Corresponding mutant BAC	pBRFseR d194
No of ORF	194
Gene in Genbank	CPXV194
Gene at PBR	CPXV-BR-200
VACV-COP homologs	A56R
Protein function	Hemagglutinin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	297 aa

Homology to orthologs in

Orthopoxviruses

VACV	87%
VACV-Cop	
VACV-MVA	87%
HSPV	87%
RPXV	83%
VARV	87%
CMLV	86%
ECTV	85%
MPXV	86%
TATV	87%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041899

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=590

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d194.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d194.ab1>

CPXV knockout-library

Consecutive number	201
Corresponding mutant BAC	pBRFseR d195
No of ORF	195
Gene in Genbank	CPXV195
Gene at PBR	CPXV-BR-201
VACV-COP homologs	A57R; 271
Protein function	Guanylate kinase
Plaques upon transfection (expression)	negativ
Result of passages	no virus progeny
Result for mutant	ORF essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	197 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	
VACV-MVA	
HSPV	
RPXV	99%
VARV	98%
CMLV	
ECTV	
MPXV	
TATV	98%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=19631609>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041900

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=628

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d195.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d195.ab1>

CPXV knockout-library

Consecutive number	202
Corresponding mutant BAC	pBRFseR d196
No of ORF	196
Gene in Genbank	CPXV196
Gene at PBR	CPXV-BR-202
VACV-COP homologs	B1R; B12R
Protein function	Serine/Threonine kinase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	299 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=6577746%2010773740>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041901

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=94

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d196.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d196.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 99%

VACV-Cop 64%

VACV-MVA 99%

HSPV 99%

RPXV 99%

VARV 98%

CMLV 98%

ECTV 99%

MPXV 98%

TATV 99%

Chordopoxvirinae

CNPV 59%

FWPV 60%

LSDV 69%

MYXV 65%

MOCV

ORFV

SWPV 64%

TANV 64%

CPXV knockout-library

Consecutive number 203

Corresponding mutant BAC pBRFseR d197

No of ORF 197

Gene in Genbank CPXV197

Gene at PBR CPXV-BR-203

VACV-COP homologs B2R; B3R

Protein function Schlafen

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 505 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041902

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=544

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d197.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d197.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 93%

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV 94%

ECTV 95%

MPXV 96%

TATV 94%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	204
Corresponding mutant BAC	pBRFseR d198 (ARP)
No of ORF	198
Gene in Genbank	CPXV198
Gene at PBR	CPXV-BR-204
VACV-COP homologs	B4R; B18R; M1L; C9L
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	558 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041903

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=632

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 45%

VACV-MVA 38%

HSPV 96%

RPXV 96%

VARV 96%

CMLV 97%

ECTV 96%

MPXV 96%

TATV 97%

Chordopoxvirinae

CNPV 43%

FWPV 43%

LSDV 40%

MYXV 41%

MOCV

ORFV 40%

SWPV 45%

TANV 45%

CPXV knockout-library

Consecutive number	205
Corresponding mutant BAC	pBRFseR d199
No of ORF	199
Gene in Genbank	CPXV199
Gene at PBR	CPXV-BR-205
VACV-COP homologs	B5R; C3L
Protein function	EEV complement control protein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	Yes
Length of protein	317 aa

Homology to orthologs in

Orthopoxviruses

VACV	98%
VACV-Cop	47%
VACV-MVA	97%
HSPV	97%
RPXV	97%
VARV	97%
CMLV	97%
ECTV	97%
MPXV	98%
TATV	97%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	44%
MYXV	42%
MOCV	
ORFV	
SWPV	45%
TANV	47%

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1585649%201433514%208503178%208331727;%2022622330>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041904

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=591

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d199.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d199.ab1>

CPXV knockout-library

Consecutive number	206
Corresponding mutant BAC	pBRFseR d200
No of ORF	200
Gene in Genbank	CPXV200
Gene at PBR	CPXV-BR-206
VACV-COP homologs	B6R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	179 aa

Homology to orthologs in

Orthopoxviruses

VACV	92%
VACV-Cop	
VACV-MVA	92%
HSPV	90%
RPXV	93%
VARV	
CMLV	94%
ECTV	94%
MPXV	93%
TATV	96%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041905

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=633

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d200.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d200.ab1>

CPXV knockout-library

Consecutive number 207

Corresponding mutant BAC pBRFseR d201

No of ORF 201

Gene in Genbank CPXV201

Gene at PBR CPXV-BR-207

VACV-COP homologs B7R

Protein function Virulence factor (endoplasmic reticulum associated)

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR L

Incorporated in VACV-WR virion nd

Length of protein 181 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041906

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=654

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d201.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d201.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 96%

VACV-Cop

VACV-MVA 94%

HSPV 96%

RPXV 96%

VARV

CMLV 91%

ECTV 97%

MPXV 96%

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	208
Corresponding mutant BAC	pBRFseR d202
No of ORF	202
Gene in Genbank	CPXV202
Gene at PBR	CPXV-BR-208
VACV-COP homologs	B8R
Protein function	Interferon gamma receptor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	266 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041907

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=564

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d202.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d202.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA

HSPV 95%

RPXV 96%

VARV 98%

CMLV 97%

ECTV 96%

MPXV 96%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV 49%

MYXV 40%

MOCV

ORFV

SWPV 45%

TANV

CPXV knockout-library

Consecutive number 209

Corresponding mutant BAC pBRFseR d203

No of ORF 203

Gene in Genbank CPXV203

Gene at PBR CPXV-BR-209

VACV-COP homologs B9R

Protein function Virulence factor

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 225 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041908

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=561

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d203.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d203.ab1>

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV 98%

ECTV

MPXV 78%

TATV 98%

Chordopoxvirinae

CNPV

FWPV

LSDV 52%

MYXV 45%

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	210
Corresponding mutant BAC	pBRFseR d204 (kelch)
No of ORF	204
Gene in Genbank	CPXV204
Gene at PBR	CPXV-BR-210
VACV-COP homologs	B10R; A55R; C2L; F3L
Protein function	Kelch like
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	I
Incorporated in VACV-WR virion	nd
Length of protein	501 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041909

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=655

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 43%

VACV-Cop 42%

VACV-MVA 41%

HSPV 42%

RPXV 43%

VARV

CMLV 97%

ECTV 42%

MPXV 41%

TATV 41%

Chordopoxvirinae

CNPV

FWPV

LSDV 44%

MYXV 44%

MOCV

ORFV

SWPV 46%

TANV 42%

CPXV knockout-library

Consecutive number 211

Corresponding mutant BAC pBRFseR d205

No of ORF 205

Gene in Genbank CPXV205

Gene at PBR CPXV-BR-211

VACV-COP homologs B11R

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR E1.2

Incorporated in VACV-WR virion nd

Length of protein 90 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041910

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=656

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d205.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d205.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 92%

VACV-Cop

VACV-MVA 95%

HSPV 94%

RPXV 93%

VARV

CMLV

ECTV 92%

MPXV 93%

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	212
Corresponding mutant BAC	pBRFseR d206
No of ORF	206
Gene in Genbank	CPXV206
Gene at PBR	CPXV-BR-212
VACV-COP homologs	B12R; B1R
Protein function	Serine/Threonine kinase
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	285 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041911

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=636

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d206.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d206.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 51%

VACV-MVA 98%

HSPV 97%

RPXV 98%

VARV 51%

CMLV 97%

ECTV 96%

MPXV 97%

TATV 51%

Chordopoxvirinae

CNPV 53%

FWPV 54%

LSDV 51%

MYXV 48%

MOCV

ORFV

SWPV 51%

TANV 51%

CPXV knockout-library

Consecutive number	213
Corresponding mutant BAC	Roth et al.
No of ORF	207 CrmA
Gene in Genbank	CPXV207
Gene at PBR	CPXV-BR-213
VACV-COP homologs	B14R; C12L; B13R; K2L
Protein function	"Serpin 1,2,3"
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	Yes
Length of protein	341 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=22016035>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041912

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=272

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d207CrmA.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV	96%
VACV-Cop	58%
VACV-MVA	41%
HSPV	96%
RPXV	95%
VARV	95%
CMLV	95%
ECTV	95%
MPXV	95%
TATV	94%

Chordopoxvirinae

CNPV	46%
FWPV	45%
LSDV	58%
MYXV	52%
MOCV	
ORFV	
SWPV	51%
TANV	58%

CPXV knockout-library

Consecutive number	214
Corresponding mutant BAC	pBRFseR d208
No of ORF	208
Gene in Genbank	CPXV208
Gene at PBR	CPXV-BR-214
VACV-COP homologs	B15R; C16L; B22R
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	IE1.2
Incorporated in VACV-WR virion	nd
Length of protein	149 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=1394428>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041913

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=559

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d208.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d208.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 64%

VACV-MVA 95%

HSPV 99%

RPXV 99%

VARV 99%

CMLV 98%

ECTV 99%

MPXV 97%

TATV 99%

Chordopoxvirinae

CNPV

FWPV

LSDV 61%

MYXV 54%

MOCV

ORFV

SWPV 59%

TANV 64%

CPXV knockout-library

Consecutive number 215

Corresponding mutant BAC pBRFseR d209

No of ORF 209

Gene in Genbank CPXV209

Gene at PBR CPXV-BR-215

VACV-COP homologs B16R

Protein function IL-1 beta receptor

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 326 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041914

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=648

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d209.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d209.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop

VACV-MVA 97%

HSPV 96%

RPXV

VARV

CMLV

ECTV 88%

MPXV 95%

TATV 97%

Chordopoxvirinae

CNPV

FWPV

LSDV 41%

MYXV

MOCV

ORFV

SWPV 36%

TANV

CPXV knockout-library

Consecutive number	216
Corresponding mutant BAC	pBRFseR d210
No of ORF	210
Gene in Genbank	CPXV210
Gene at PBR	CPXV-BR-216
VACV-COP homologs	B17L
Protein function	Unknown
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	340 aa

Homology to orthologs in

Orthopoxviruses

VACV	99%
VACV-Cop	
VACV-MVA	99%
HSPV	99%
RPXV	99%
VARV	98%
CMLV	
ECTV	96%
MPXV	
TATV	97%

Chordopoxvirinae

CNPV	
FWPV	
LSDV	
MYXV	
MOCV	
ORFV	
SWPV	
TANV	

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041915

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=638

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d210.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d210.ab1>

CPXV knockout-library

Consecutive number 217

Corresponding mutant BAC pBRFseR d211 (ARP)

No of ORF 211

Gene in Genbank CPXV211

Gene at PBR CPXV-BR-217

VACV-COP homologs B18R; C19L; B25R; B4R

Protein function Ankyrin

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 574 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041916

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=639

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 98%

VACV-Cop 38%

VACV-MVA 98%

HSPV 97%

RPXV 97%

VARV 96%

CMLV 53%

ECTV 96%

MPXV 53%

TATV 53%

Chordopoxvirinae

CNPV 38%

FWPV 44%

LSDV 39%

MYXV 38%

MOCV

ORFV

SWPV 40%

TANV 38%

CPXV knockout-library

Consecutive number	218
Corresponding mutant BAC	pBRFseR d212
No of ORF	212
Gene in Genbank	CPXV212
Gene at PBR	CPXV-BR-218
VACV-COP homologs	B19R
Protein function	IFN alpha/beta receptor
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.1
Incorporated in VACV-WR virion	nd
Length of protein	366 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=22419805>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041917

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=584

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d212.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d212.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 46%

VACV-MVA

HSPV 97%

RPXV 97%

VARV 92%

CMLV 91%

ECTV 91%

MPXV 96%

TATV 93%

Chordopoxvirinae

CNPV

FWPV

LSDV 46%

MYXV

MOCV

ORFV

SWPV 47%

TANV 46%

CPXV knockout-library

Consecutive number	219
Corresponding mutant BAC	pBRFseR d213 (ARP)
No of ORF	213
Gene in Genbank	CPXV213
Gene at PBR	CPXV-BR-219
VACV-COP homologs	B20R; B18R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	800 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041918

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=95

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 94%

VACV-Cop 41%

VACV-MVA 43%

HSPV 94%

RPXV 94%

VARV 91%

CMLV 91%

ECTV 65%

MPXV 93%

TATV 41%

Chordopoxvirinae

CNPV 41%

FWPV 38%

LSDV 38%

MYXV 41%

MOCV

ORFV

SWPV 41%

TANV 41%

CPXV knockout-library

Consecutive number	220
Corresponding mutant BAC	
No of ORF	214
Gene in Genbank	CPXV214
Gene at PBR	CPXV-BR-220
VACV-COP homologs	
Protein function	Unknown
Plaques upon transfection (expression)	nd
Result of passages	nd
Result for mutant	nd
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	50 aa

Homology to orthologs in

Orthopoxviruses

VACV

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

Link in Pubmed	
Link Gene in PBR	http://www.poxvirus.org/gene_detail.asp?gene_id=0041919
Link gene group in PBR	http://www.poxvirus.org/gene_group.asp?ortholog_group_id=781
Genbank file	
Sequencing data	

CPXV knockout-library

Consecutive number 221

Corresponding mutant BAC pBRFseR d215/214 (kelch)

No of ORF 215-214

Gene in Genbank CPXV215

Gene at PBR CPXV-BR-221

VACV-COP homologs A55R; F3L; C2L

Protein function Kelch like

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 557 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041920

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=640

Genbank file

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 45%

VACV-MVA

HSPV 96%

RPXV 40%

VARV

CMLV 41%

ECTV 88%

MPXV 37%

TATV 96%

Chordopoxvirinae

CNPV

FWPV

LSDV 42%

MYXV 45%

MOCV

ORFV

SWPV 42%

TANV 45%

CPXV knockout-library

Consecutive number 222

Corresponding mutant BAC pBRFseR d216 (ATG)

No of ORF 216

Gene in Genbank CPXV216

Gene at PBR CPXV-BR-222

VACV-COP homologs 268

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 51 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041921

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=782

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d216M.gb

Sequencing data

Homology to orthologs in

Orthopoxviruses

VACV 91%

VACV-Cop

VACV-MVA

HSPV

RPXV

VARV

CMLV

ECTV

MPXV

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	223
Corresponding mutant BAC	pBRFseR d217
No of ORF	217
Gene in Genbank	CPXV217
Gene at PBR	CPXV-BR-223
VACV-COP homologs	C12L; B14R; B13R; K2L
Protein function	"Serp1n 1,2,3"
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	E1.2
Incorporated in VACV-WR virion	nd
Length of protein	372 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=12388820>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041922

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=272

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d217.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d217.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 97%

VACV-Cop 57%

VACV-MVA 44%

HSPV 97%

RPXV 97%

VARV 97%

CMLV 96%

ECTV 96%

MPXV 94%

TATV 98%

Chordopoxvirinae

CNPV 44%

FWPV 45%

LSDV 56%

MYXV 54%

MOCV

ORFV

SWPV 50%

TANV 57%

CPXV knockout-library

Consecutive number 224

Corresponding mutant BAC pBRFseR d218

No of ORF 218

Gene in Genbank CPXV218

Gene at PBR CPXV-BR-224

VACV-COP homologs C14L; C13L

Protein function Unknown

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR I

Incorporated in VACV-WR virion nd

Length of protein 193 aa

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041923

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=661

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d218.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d218.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 93%

VACV-Cop

VACV-MVA

HSPV 94%

RPXV 95%

VARV

CMLV 93%

ECTV

MPXV 92%

TATV 94%

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV

MOCV

ORFV

SWPV

TANV

CPXV knockout-library

Consecutive number	225
Corresponding mutant BAC	pBRFseR d219
No of ORF	219
Gene in Genbank	CPXV219
Gene at PBR	CPXV-BR-225
VACV-COP homologs	273
Protein function	Surface glycoprotein
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	1919 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=7831769%2015705716>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041924

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=326

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d219.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d219.ab1>

Homology to orthologs in

Orthopoxviruses

VACV	
VACV-Cop	52%
VACV-MVA	
HSPV	92%
RPXV	
VARV	96%
CMLV	95%
ECTV	97%
MPXV	91%
TATV	98%

Chordopoxvirinae

CNPV	63%
FWPV	64%
LSDV	52%
MYXV	44%
MOCV	46%
ORFV	
SWPV	55%
TANV	52%

CPXV knockout-library

Consecutive number	226
Corresponding mutant BAC	pBRFseR d220 (ARP)
No of ORF	220
Gene in Genbank	CPXV220
Gene at PBR	CPXV-BR-226
VACV-COP homologs	B18R; C15L; B21R; C19L; B25R; C20L; B26R; C21L; B27R
Protein function	Ankyrin
Plaques upon transfection (expression)	early & late
Result of passages	virus progeny
Result for mutant	ORF not essential
Kinetic in VACV-WR	
Incorporated in VACV-WR virion	nd
Length of protein	579 aa

Homology to orthologs in

Orthopoxviruses

VACV	52%
VACV-Cop	40%
VACV-MVA	52%
HSPV	69%
RPXV	52%
VARV	70%
CMLV	68%
ECTV	68%
MPXV	68%
TATV	67%

Chordopoxvirinae

CNPV	43%
FWPV	44%
LSDV	42%
MYXV	41%
MOCV	
ORFV	40%
SWPV	42%
TANV	40%

Link in Pubmed

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041925

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=641

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d220.gb

Sequencing data

CPXV knockout-library

Consecutive number 227

Corresponding mutant BAC pBRFseR d221

No of ORF 221

Gene in Genbank CPXV221

Gene at PBR CPXV-BR-227

VACV-COP homologs C22L; B28R; A53R

Protein function Tumor necrosis factor receptor (CrmD)

Plaques upon transfection (expression) early & late

Result of passages virus progeny

Result for mutant ORF not essential

Kinetic in VACV-WR

Incorporated in VACV-WR virion nd

Length of protein 320 aa

Link in Pubmed <http://www.ncbi.nlm.nih.gov/pubmed?term=21153324>

Link Gene in PBR http://www.poxvirus.org/gene_detail.asp?gene_id=0041926

Link gene group in PBR http://www.poxvirus.org/gene_group.asp?ortholog_group_id=752

Genbank file http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/gb/pBRFseR_d221CrmD.gb

Sequencing data <http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/cowpox/library/seq/d221.ab1>

Homology to orthologs in

Orthopoxviruses

VACV 59%

VACV-Cop

VACV-MVA

HSPV 66%

RPXV

VARV 66%

CMLV 67%

ECTV 97%

MPXV 66%

TATV

Chordopoxvirinae

CNPV

FWPV

LSDV

MYXV 59%

MOCV

ORFV

SWPV

TANV