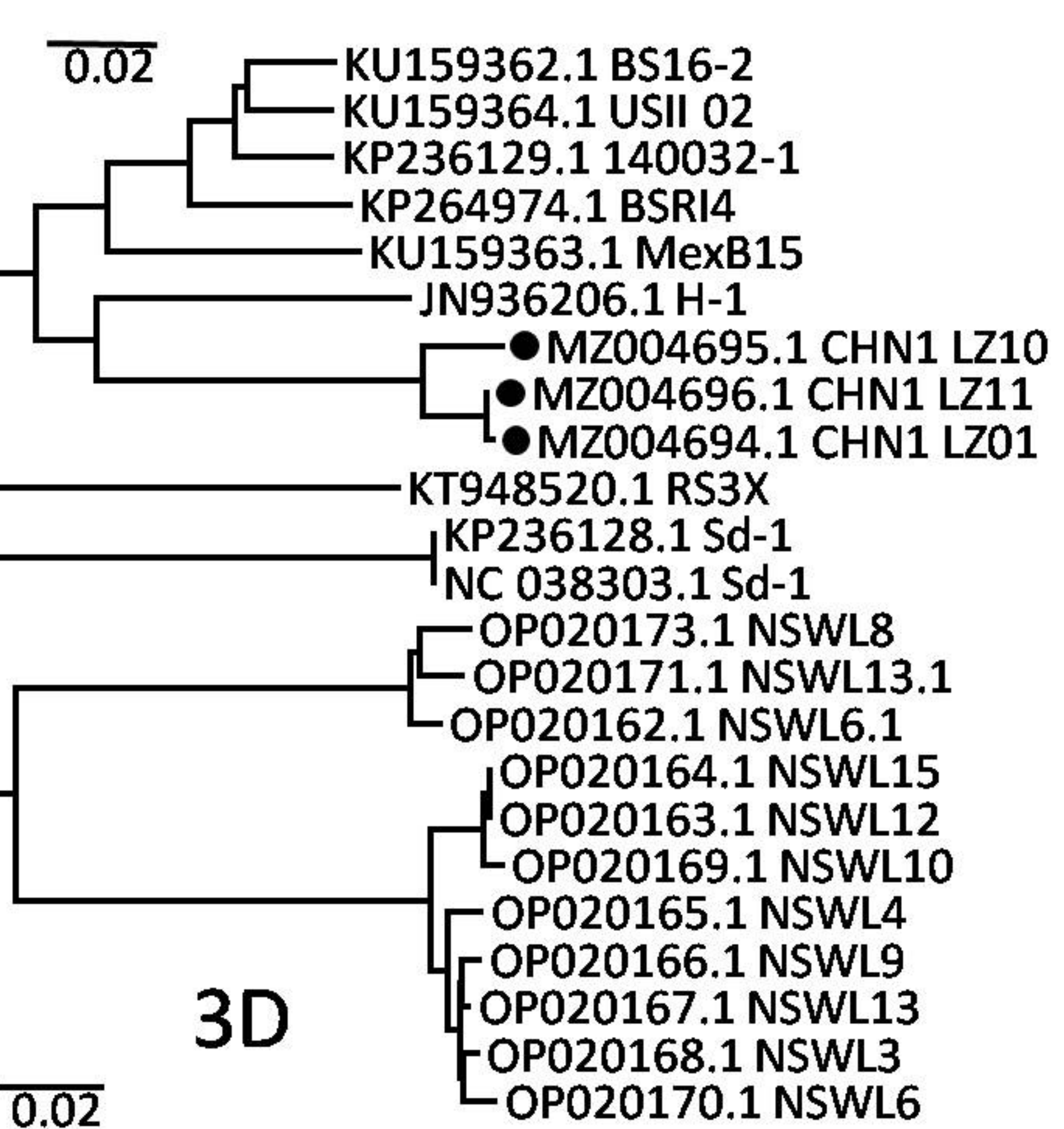
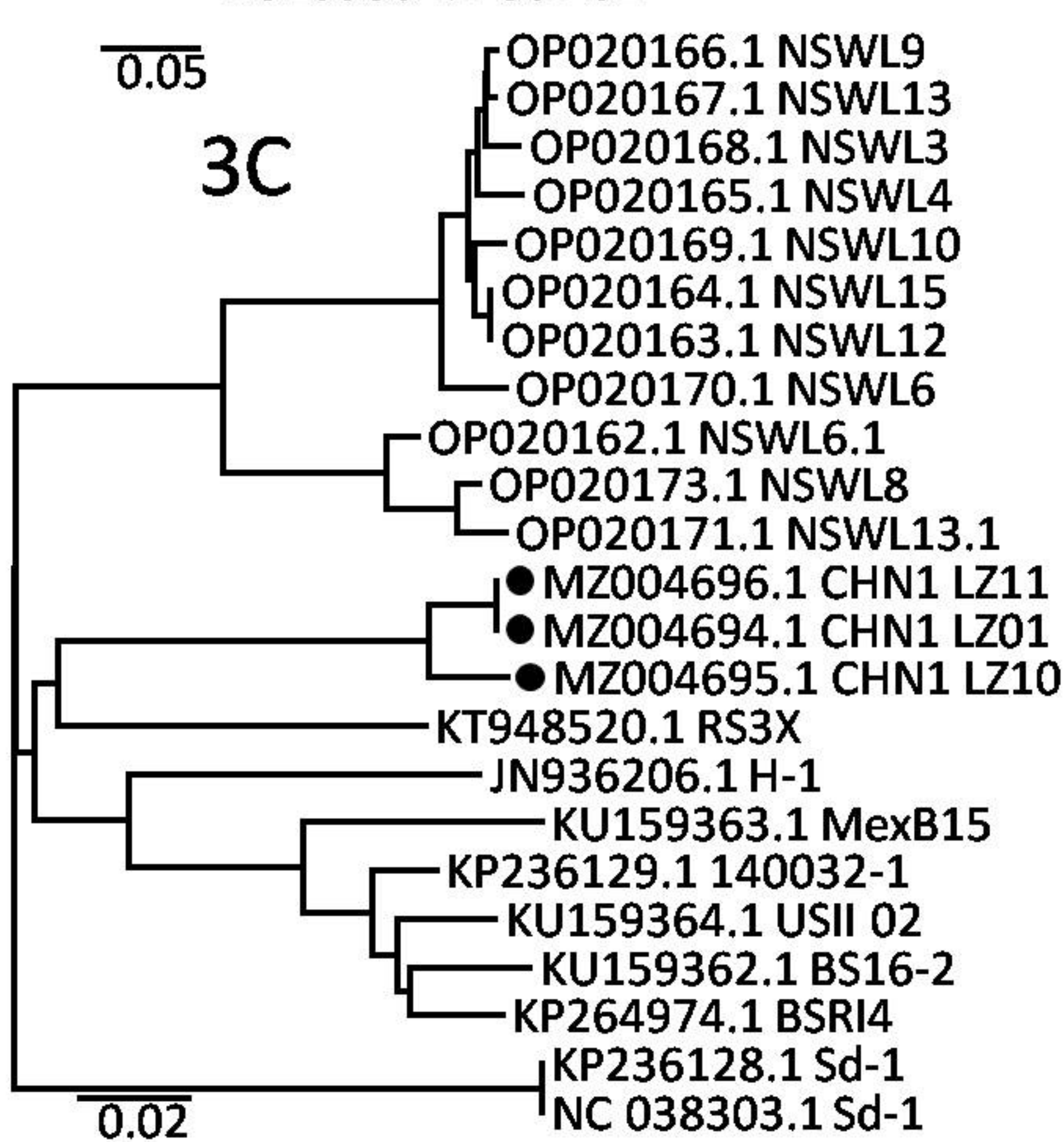
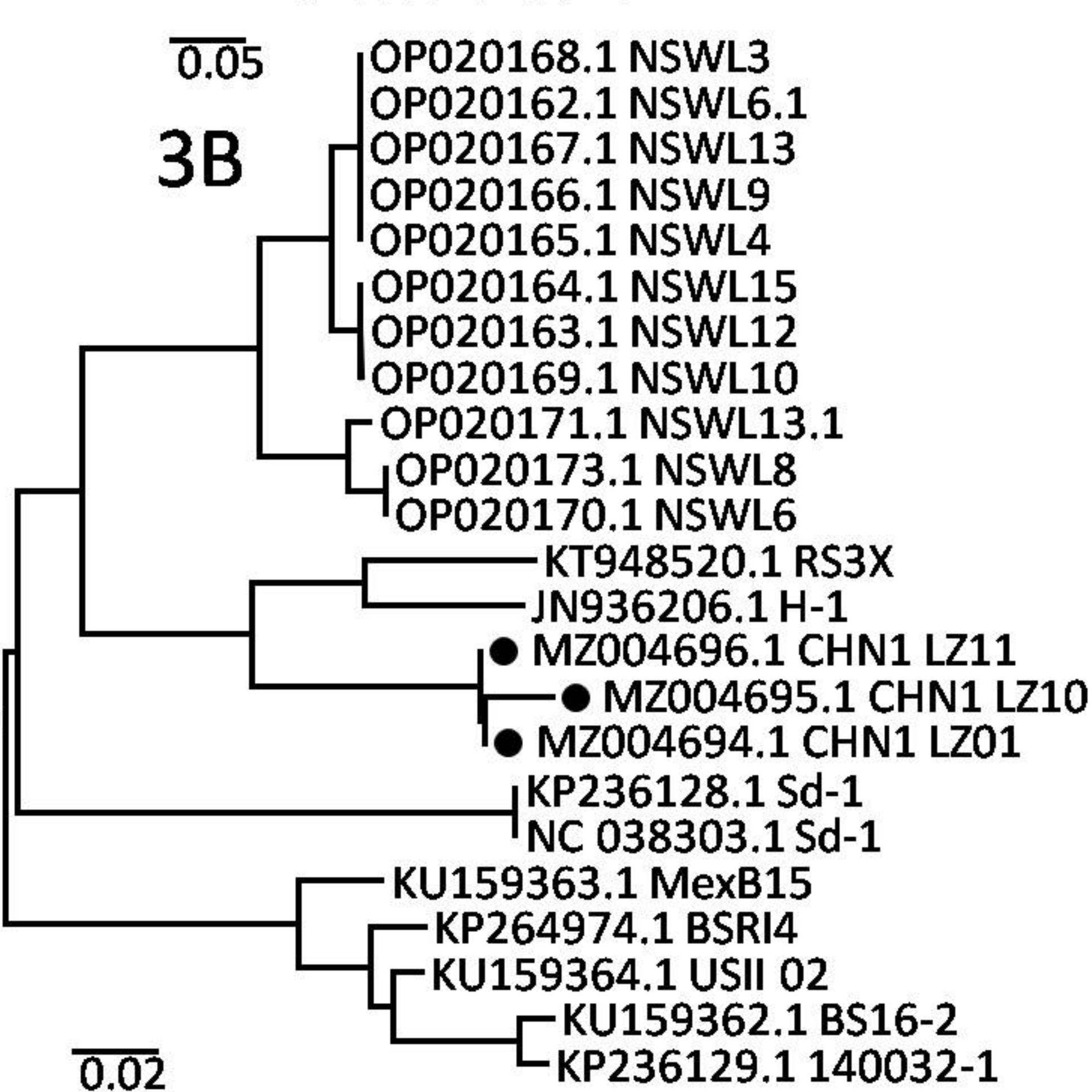
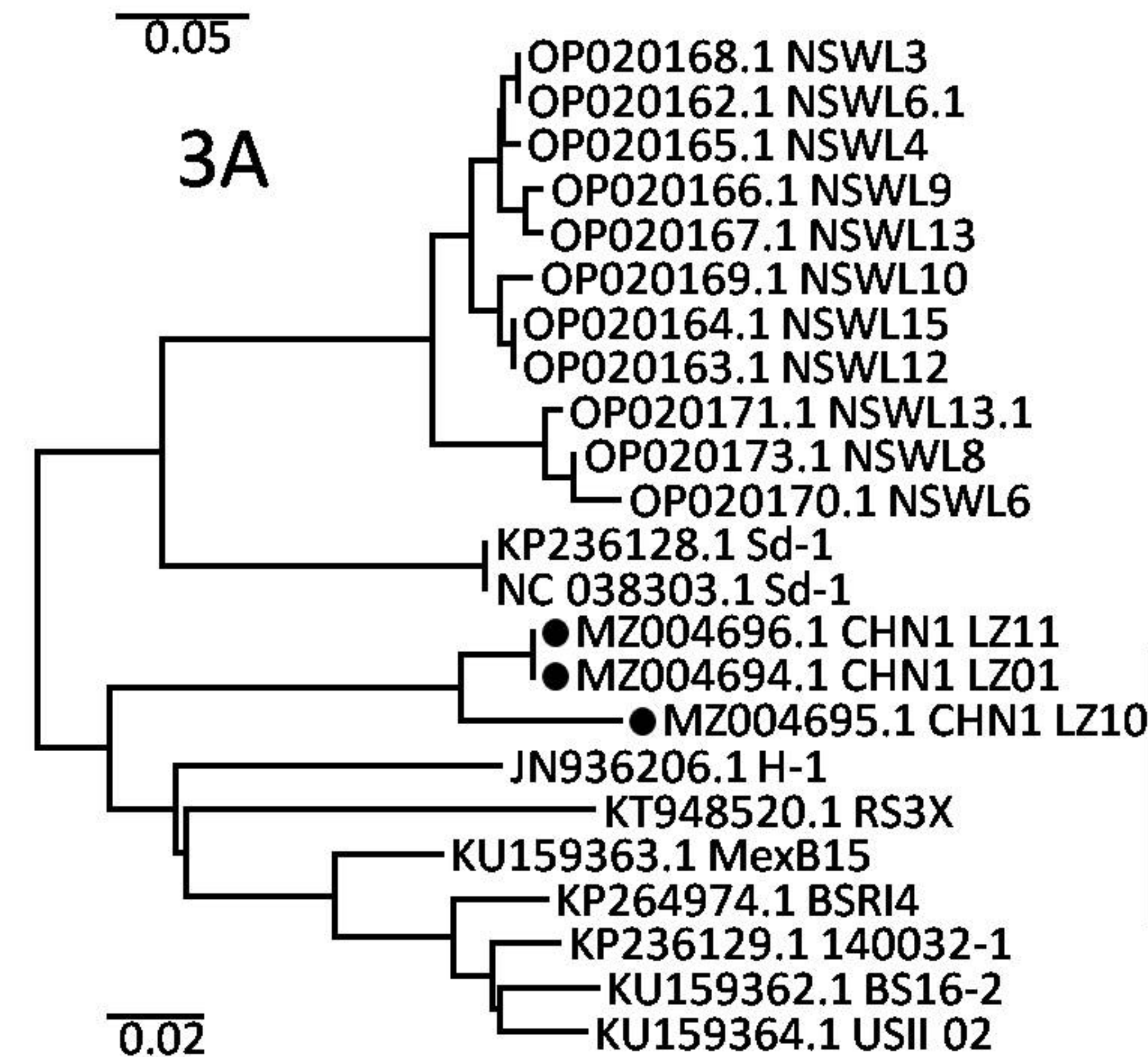
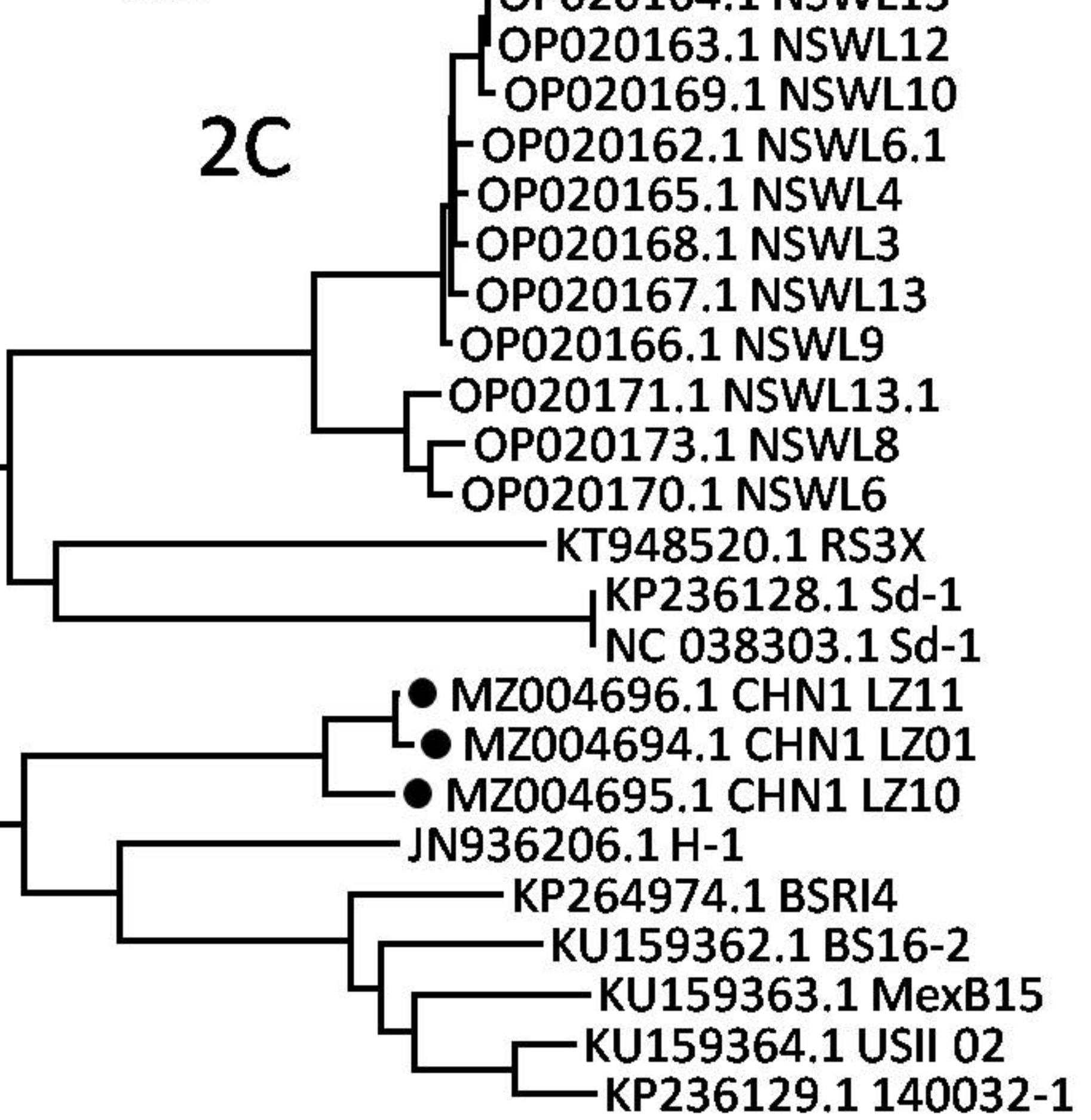
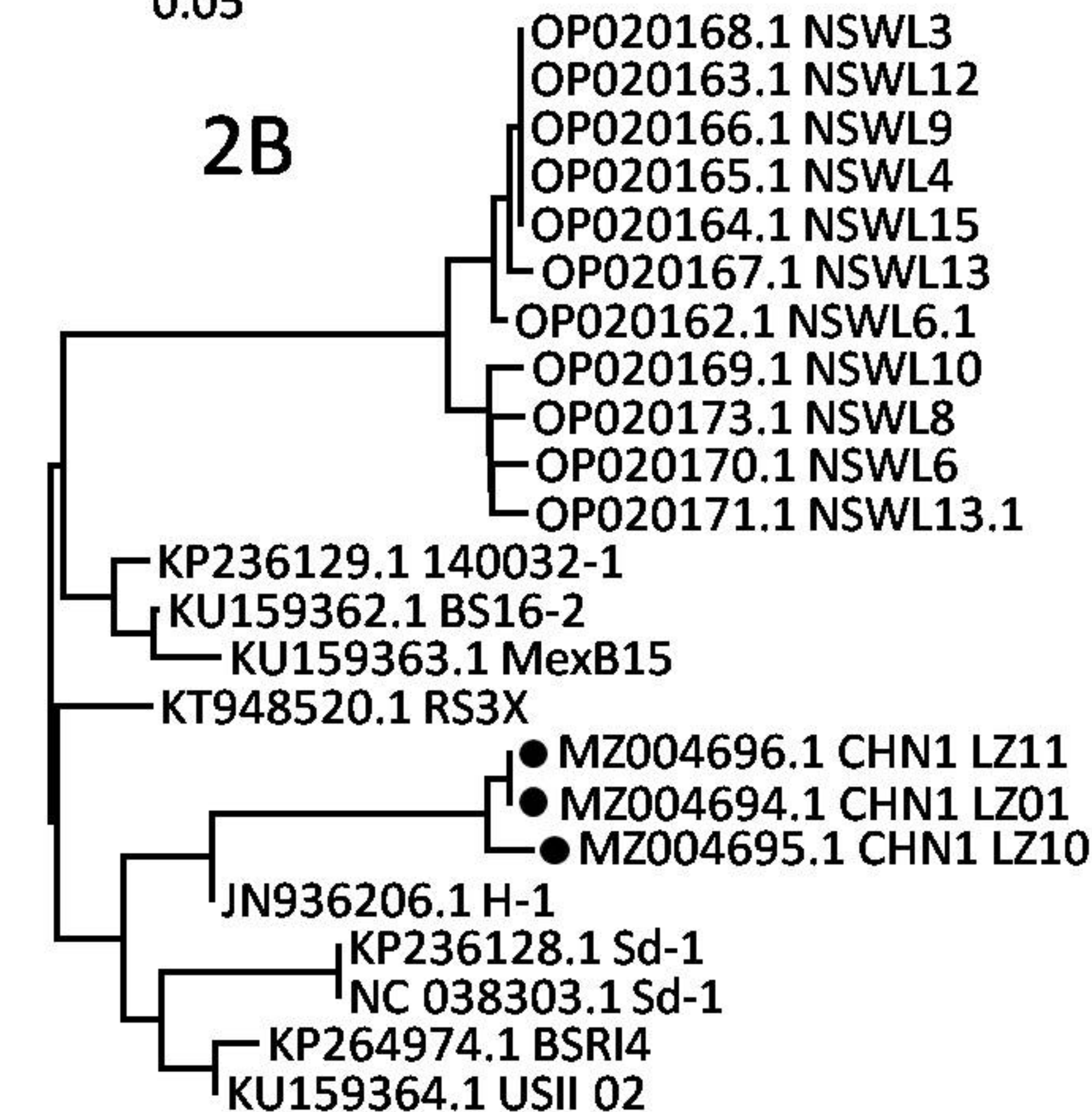
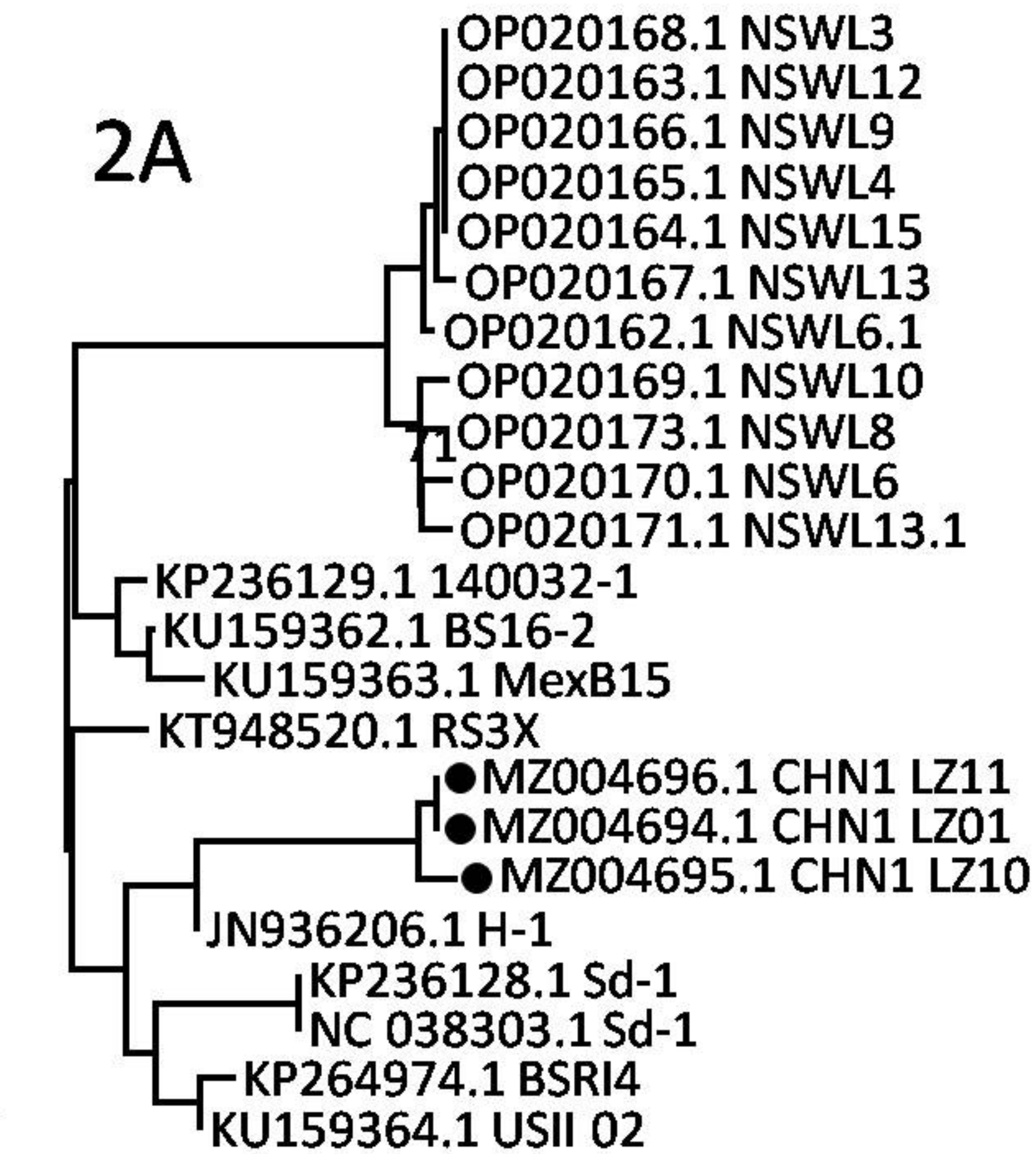
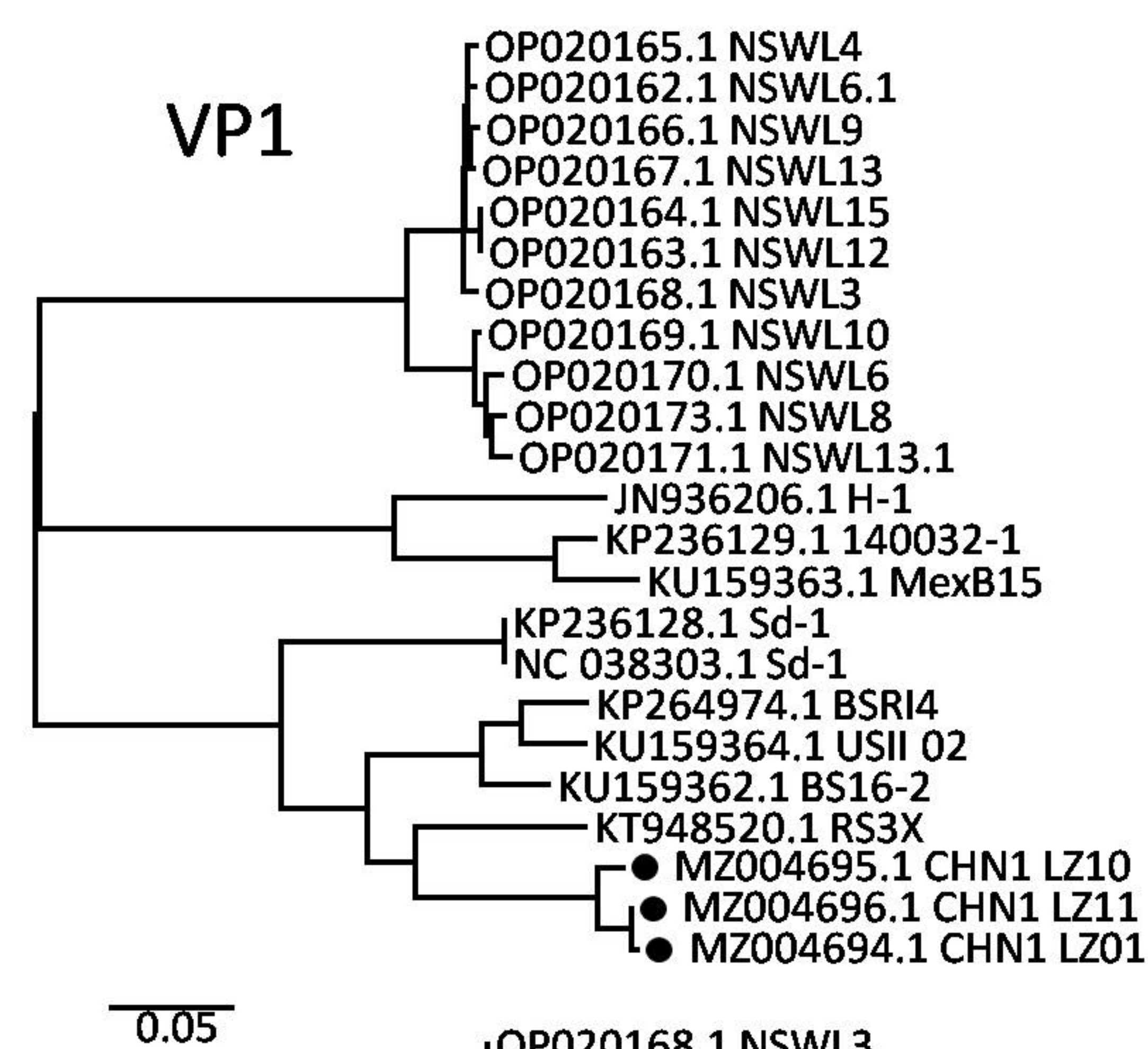
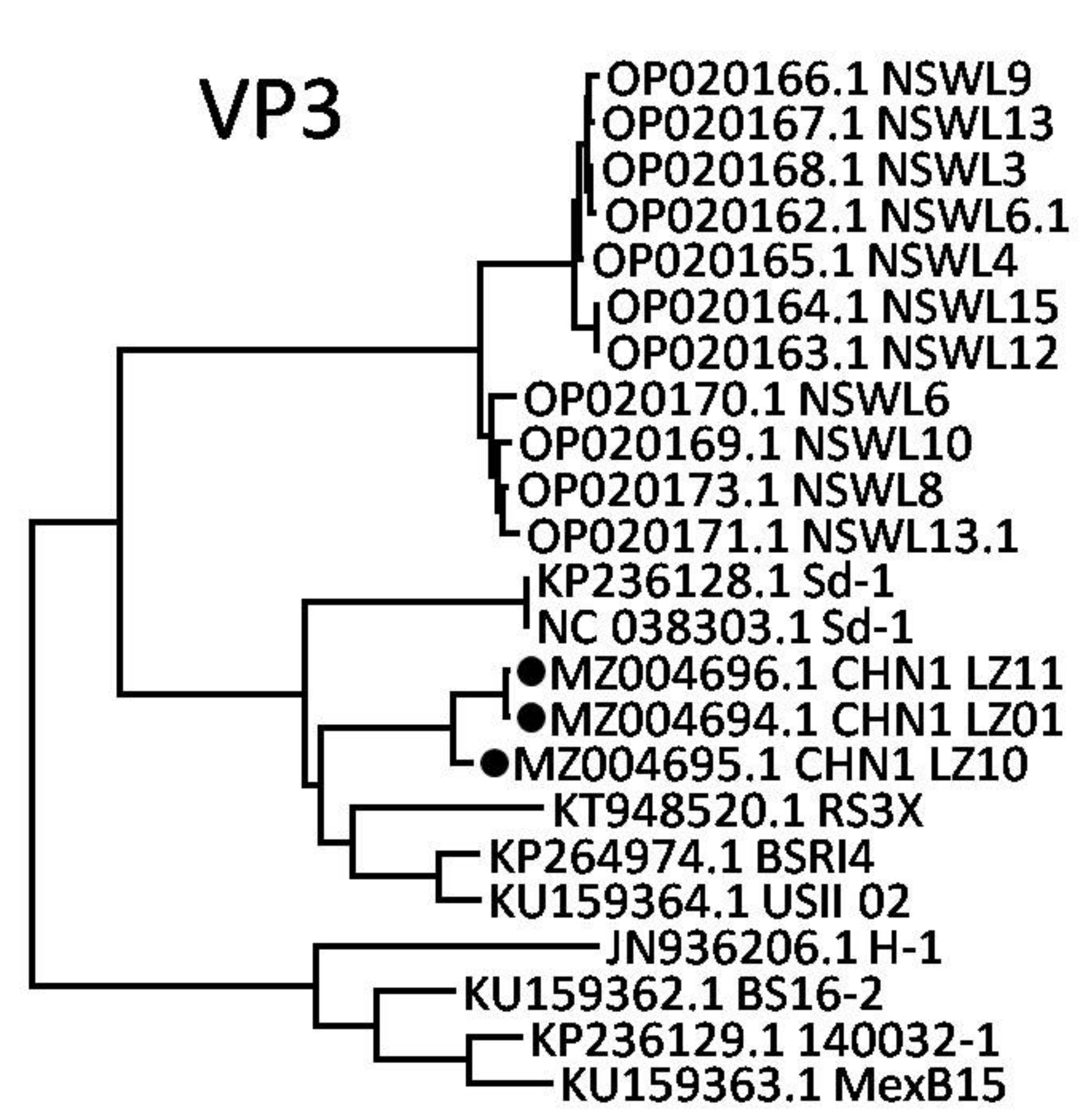
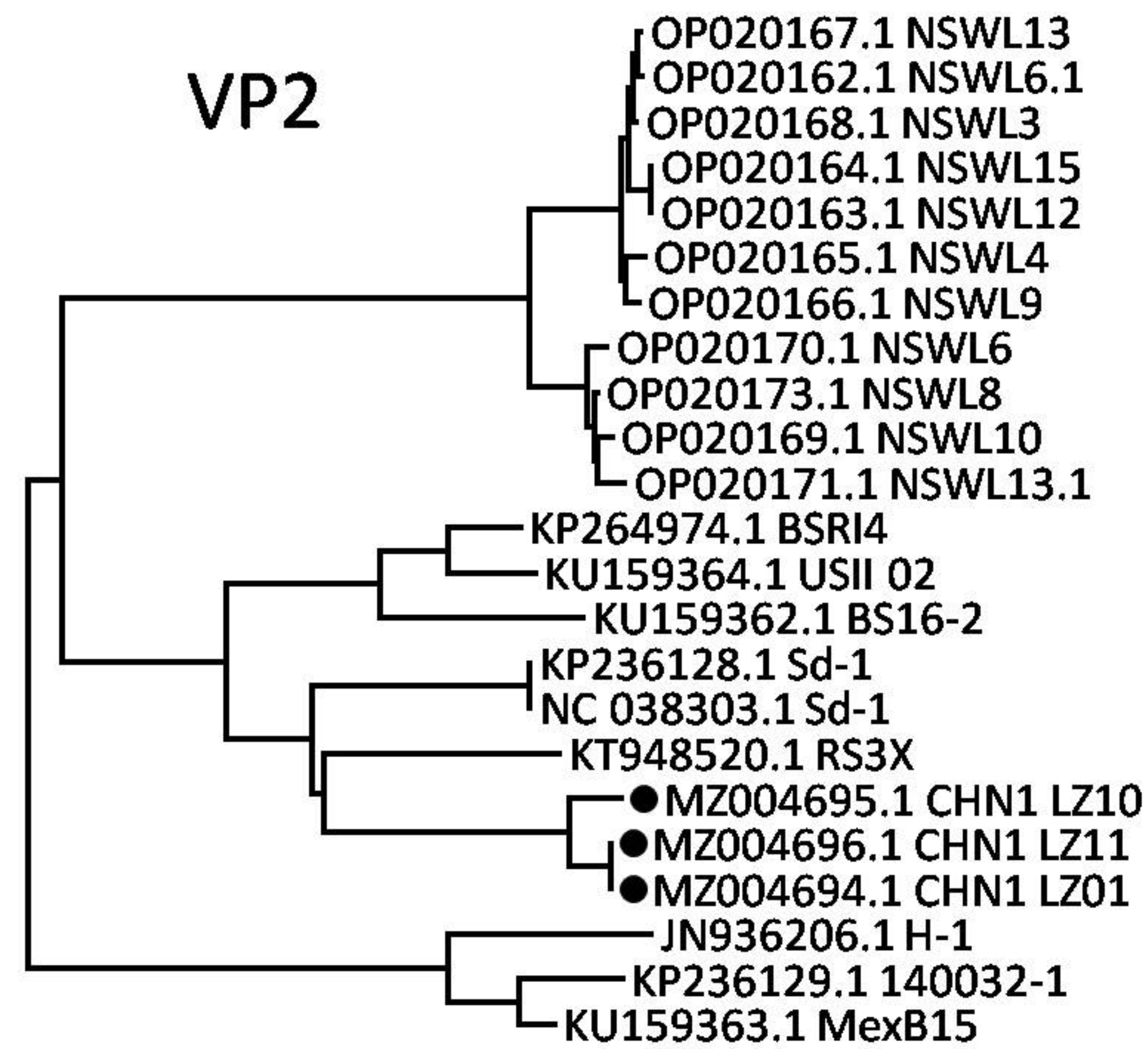
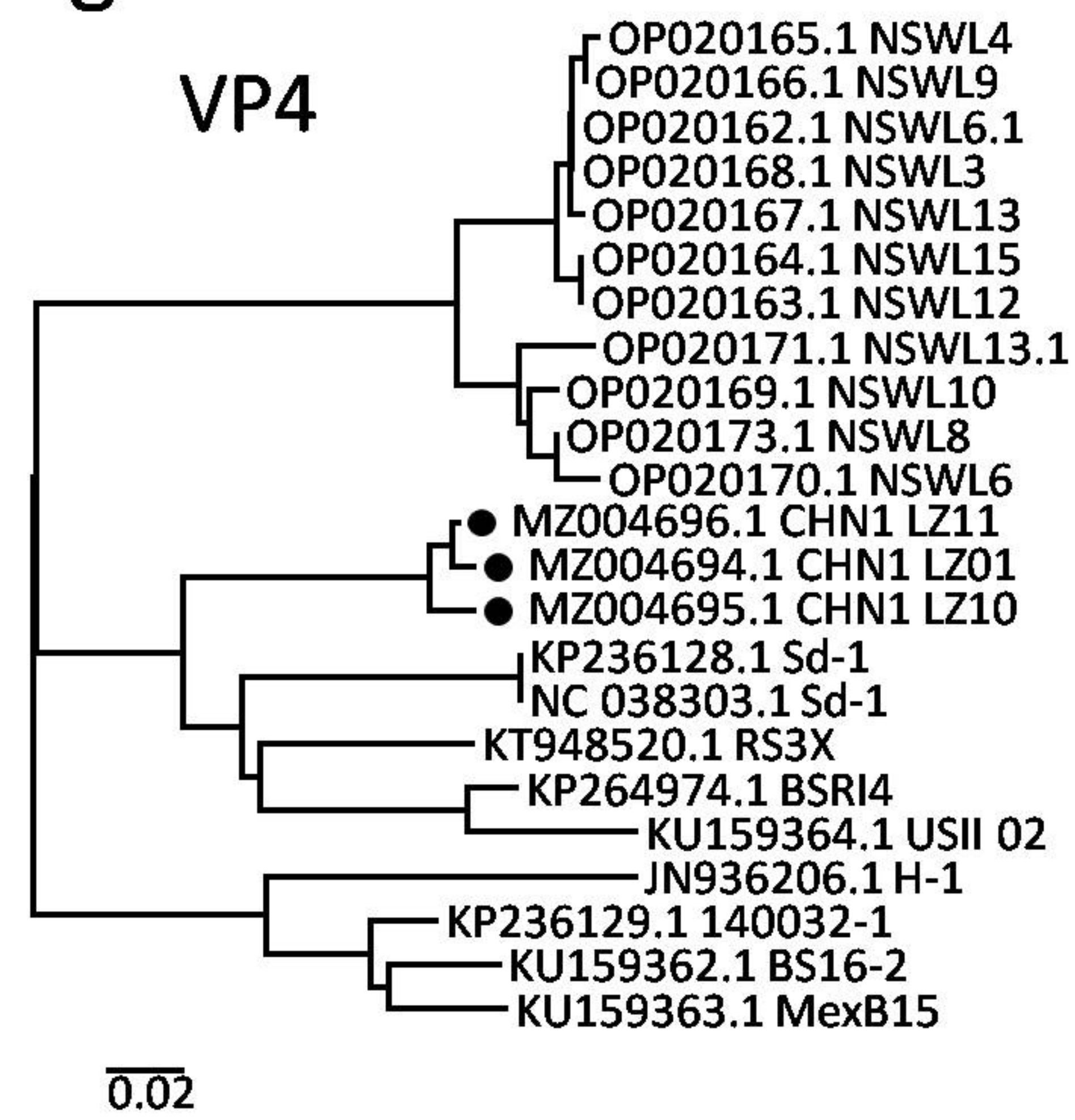
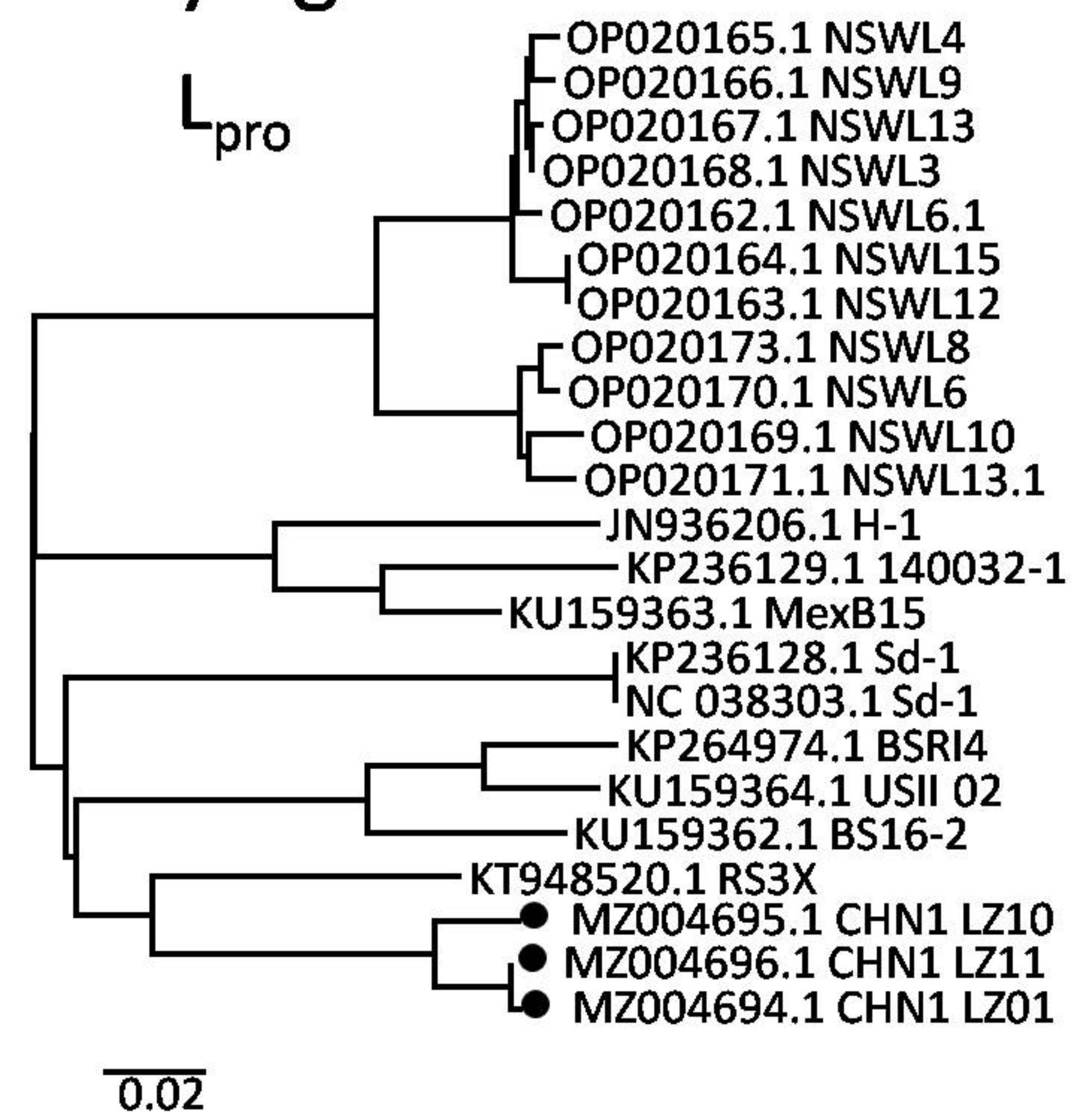
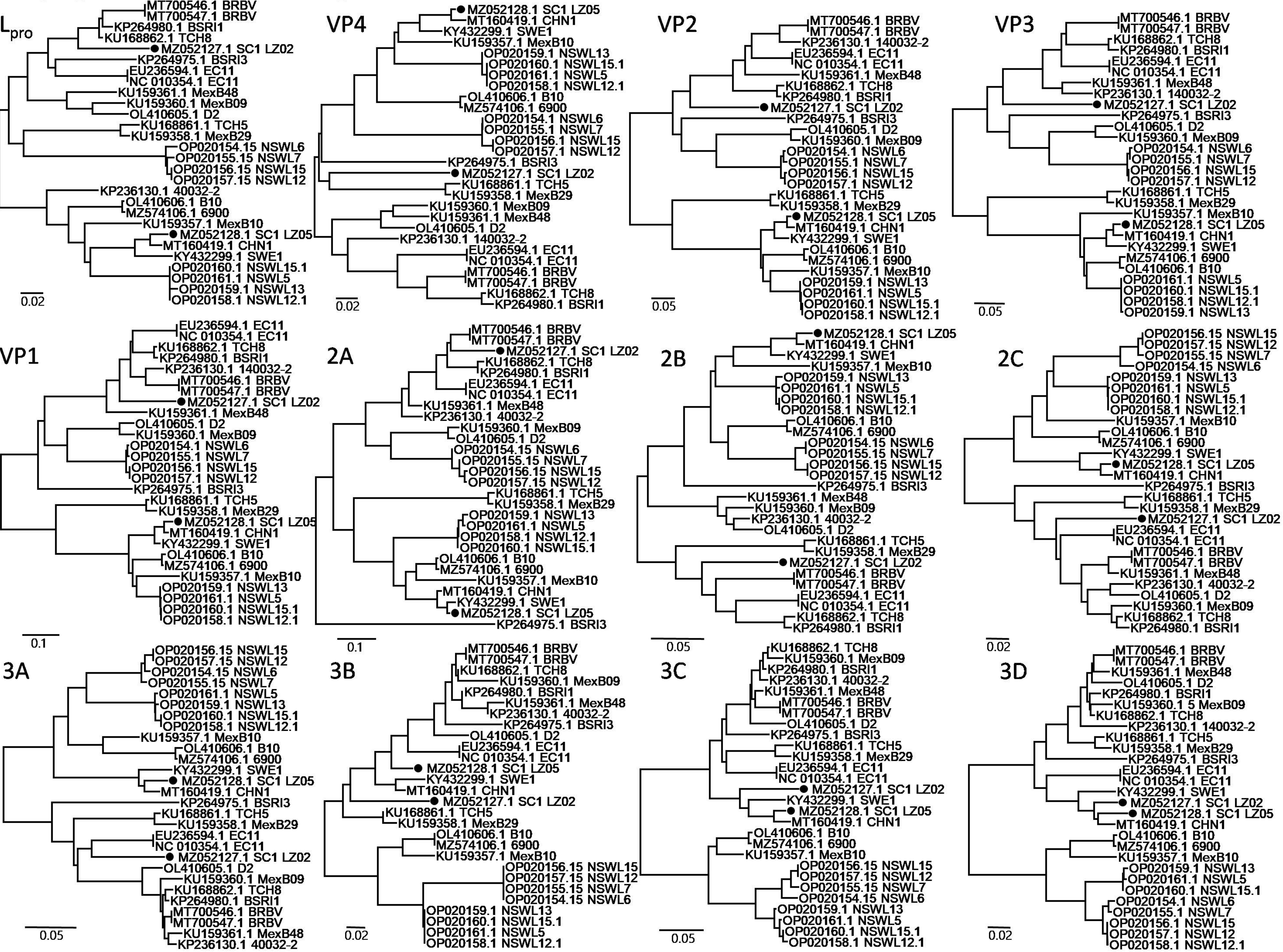


Phylogenetic trees for each gene of BRAV



Phylogenetic trees for each gene of BRBV



		10	20	30	40	50	60	70	80	90	100	110	120	130		
MZ004695.1_CHN1_L210	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
MZ004696.1_CHN1_L211	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
MZ004694.1_CHN1_L201	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
KP236128.1_Sd-1	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
NC_038303.1_Sd-1	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
KT948520.1_RS3X	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
JN936206.1_H-1	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
KUI159362.1_BS16-2	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
KP264974.1_BSRI4	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
KUI159364.1_USI1_02	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
KP236129.1_140032-1	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
KUI159363.1_MexB15	M	T	T	---	---	---	---	---	---	---	---	---	---	---	---	
OP020164.1_BRAV3_NSWL15	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020165.1_BRAV3_NSWL4	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020166.1_BRAV3_NSWL9	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020167.1_BRAV3_NSWL13	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020168.1_BRAV3_NSWL3	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020173.1_BRAV3_NSWL8	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020163.1_BRAV3_NSWL12	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020169.1_BRAV3_NSWL10	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020170.1_BRAV3_NSWL6	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020162.1_BRAV3_NSWL6.1	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
OP020171.1_BRAV3_NSWL13.1	M	K	T	T	---	---	---	---	---	---	---	---	---	---	---	
MZ004695.1_CHN1_L210	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
MZ004696.1_CHN1_L211	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
MZ004694.1_CHN1_L201	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KP236128.1_Sd-1	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
NC_038303.1_Sd-1	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KT948520.1_RS3X	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
JN936206.1_H-1	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KUI159362.1_BS16-2	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KP264974.1_BSRI4	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KUI159364.1_USI1_02	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KP236129.1_140032-1	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
KUI159363.1_MexB15	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020164.1_BRAV3_NSWL15	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020165.1_BRAV3_NSWL4	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020166.1_BRAV3_NSWL9	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020167.1_BRAV3_NSWL13	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020168.1_BRAV3_NSWL3	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020173.1_BRAV3_NSWL8	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020163.1_BRAV3_NSWL12	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020169.1_BRAV3_NSWL10	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020170.1_BRAV3_NSWL6	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020162.1_BRAV3_NSWL6.1	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
OP020171.1_BRAV3_NSWL13.1	E	H	A	V	F	F	R	S	E	D	G	T	V	C	V	D
MZ004695.1_CHN1_L210	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
MZ004696.1_CHN1_L211	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
MZ004694.1_CHN1_L201	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KP236128.1_Sd-1	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
NC_038303.1_Sd-1	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KT948520.1_RS3X	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
JN936206.1_H-1	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KUI159362.1_BS16-2	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KP264974.1_BSRI4	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KUI159364.1_USI1_02	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KP236129.1_140032-1	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
KUI159363.1_MexB15	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020164.1_BRAV3_NSWL15	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020165.1_BRAV3_NSWL4	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020166.1_BRAV3_NSWL9	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020167.1_BRAV3_NSWL13	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020168.1_BRAV3_NSWL3	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020173.1_BRAV3_NSWL8	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020163.1_BRAV3_NSWL12	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020169.1_BRAV3_NSWL10	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020170.1_BRAV3_NSWL6	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020162.1_BRAV3_NSWL6.1	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
OP020171.1_BRAV3_NSWL13.1	L	T	N	L	A	S	N	V	L	P	A	A	I	G	L	L
MZ004695.1_CHN1_L210	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
MZ004696.1_CHN1_L211	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
MZ004694.1_CHN1_L201	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KP236128.1_Sd-1	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
NC_038303.1_Sd-1	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KT948520.1_RS3X	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
JN936206.1_H-1	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KUI159362.1_BS16-2	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KP264974.1_BSRI4	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KUI159364.1_USI1_02	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KP236129.1_140032-1	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
KUI159363.1_MexB15	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
OP020164.1_BRAV3_NSWL15	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
OP020165.1_BRAV3_NSWL4	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
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OP020169.1_BRAV3_NSWL10	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
OP020170.1_BRAV3_NSWL6	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
OP020162.1_BRAV3_NSWL6.1	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
OP020171.1_BRAV3_NSWL13.1	A	Q	G	T	L	S	H	G	G	M	L	V	A	M	V	P
MZ004695.1_CHN1_L210	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
MZ004696.1_CHN1_L211	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
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KP236128.1_Sd-1	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
NC_038303.1_Sd-1	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
KT948520.1_RS3X	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
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KUI159362.1_BS16-2	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
KP264974.1_BSRI4	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
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KP236129.1_140032-1	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
KUI159363.1_MexB15	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020164.1_BRAV3_NSWL15	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020165.1_BRAV3_NSWL4	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020166.1_BRAV3_NSWL9	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020167.1_BRAV3_NSWL13	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020168.1_BRAV3_NSWL3	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020173.1_BRAV3_NSWL8	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020163.1_BRAV3_NSWL12	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020169.1_BRAV3_NSWL10	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020170.1_BRAV3_NSWL6	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020162.1_BRAV3_NSWL6.1	A	P	I	T	A	D	P	V	C	G	G	V	N	P	R	Q
OP020171.1_BRAV3_NSWL13.1	A	P	I	T	A	D	P	V	C	G						

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 OP020170.1.BRAV3_NSWL6
 OP020162.1.BRAV3_NSWL6.1
 OP020171.1.BRAV3_NSWL13.1

Multiple Sequence Alignment of BRBV

Sequence alignment visualization showing 100 sequences (Accession numbers on the left) aligned across 130 positions (columns). The alignment is color-coded by amino acid type: A (green), C (blue), D (cyan), E (light blue), F (yellow), G (light green), H (orange), I (dark green), K (red), L (dark blue), M (brown), N (purple), P (pink), Q (light purple), R (dark red), S (light blue), T (light green), V (dark green), W (dark blue), Y (yellow).

Key features of the alignment:

- Conserved Regions:** High conservation is observed in the N-terminal region (positions 1-100) and the C-terminal region (positions 110-130).
- Variable Regions:** Significant sequence variation is present in the middle region (positions 100-110), particularly around position 105.
- Accession Numbers:** The sequences are identified by accession numbers such as M2052127, M2052128, OL410606, KY432299, MT160419, M2574106, KUI59357, KUI59358, EU236594, NC_010354, MT700546, KUI68862, KP264980, OL410605, KUI59360, KUI59361, KP236130, OP020154, OP020155, OP020156, OP020157, OP020158, and others.

[illegible]

	1340	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440	1450	1460																																																																																																																		
MZ052127.1_BREV_SC1_LZ02	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
MZ052128.1_BREV_SC1_LZ05	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
OL410606.1_BREV_B10	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KY432299.1_BREV_2_SWE1	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
MT160419.1_BREV_CHN1	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
MZ574106.1_BREV_6900	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KUI59357.1_BREV_MexB10	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KUI68861.1_BREV_4_TCH5	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KUI59358.1_BREV_MexB29	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
EU236594.1_BREV_1_BC11	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
NC_010354.1_BREV_1_BC11	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
MT700546.1_BREV	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
MT700547.1_BREV	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KUI68862.1_BREV_TCH8	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KP264980.1_BREV_BSR1	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
OL410605.1_BREV_D2	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KUI59360.1_BREV_5_MexB09	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KP264975.1_BREV_3_BSR13	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L	A	A	S	G	H	E	C	P	C	G	L	F	E	F	D	C	P	L	L	N	G	E	A	I	D	L	T	P	V	R	E	T	P	A	V	E	S	V	Y	E	L	I	E	L	V	Y	N	E	V	M	D	R	R	A	V	S	D	L	K	I	L	K	Q	M	G	K	Y	T	L	D	I	K	K	H
KUI59361.1_BREV_MexB48	F	N	S	P	V	I	A	T	T	M	H	E	F	T	P	K	T	M	A	C	P	G	A	L	V	R	R	F	T	D	Y	V	L	A	A	K	K	P	Y	I	R	E	K	T	E	T	L	N	V	R	K	A	L																																																																										

	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590																																																																																																															
MZ052127.1_BRBV_SC1_LZ02	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V
MZ052128.1_BRBV_SC1_LZ05	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
OL410606.1_BRBV_B10	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KY432299.1_BRBV_2_SWE1	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
MT160419.1_BRBV_CHN1	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
MZ574106.1_BRBV_6900	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KUI59357.1_BRBV_MexB10	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KUI68861.1_BRBV_4_TCH5	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KUI59358.1_BRBV_MexB29	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
EU236594.1_BRBV_1_EC11	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
NC_010354.1_BRBV_1_EC11	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
MT109564.1_BRBV	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
MT700547.1_BRBV	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KUI68862.1_BRBV_TCH8	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KP264594.1_BRBV_BSRI1	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
OL410605.1_BRBV_D2	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KUI59360.1_BRBV_5_MexB09	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KP264975.1_BRBV_3_BSRI3	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P	V	K	V	
KUI59361.1_BRBV_MexB48	K	P	T	V	P	F	P	S	G	G	Y	Q	P	G	R	D	I	N	A	S	P	E	M	Q	E	K	L	L	K	Y	L	V	K	N	E	H	L	D	A	A	L	N	F	Y	N	E	E	C	D	E	D	V	R	K	T	G	P	S	I	G	E	L	K	V	K	T	L	M	K	V	K	K	Y	S	H	L	F	T	G	L	M	L	I	G	H	M	L	L	L	L	N	H	R	T	P	E	E	K	K	K	K	N	K	T	E	E	D	N	T	K	E	G	P	Y	G	G	A	K	P	P</				

	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720																																																																																																																						
MZ052127.1_BRBV_SC1_L202	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
MZ052128.1_BRBV_SC1_L205	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
OL410606.1_BRBV_B10	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KY432299.1_BRBV_2_SWE1	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
MT160419.1_BRBV_CHN1	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
MZ574106.1_BRBV_6900	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KU159357.1_BRBV_MexB10	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KU168861.1_BRBV_4_TCH5	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KU159358.1_BRBV_MexB29	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
EU236594.1_BRBV_1_EC11	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
NC_010054.1_BRBV_1_EC11	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
MT700546.1_BRBV	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
MT700547.1_BRBV	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KU168862.1_BRBV_TCH8	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KP264980.1_BRBV_BSR11	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
OL410605.1_BRBV_D2	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KU159360.1_BRBV_5_MexB09	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V	T	K	N	S	P	V	V	G	C	V	K	N	T	T	V
KP264975.1_BRBV_3_BSR13	V	D	K	L	K	V	N	P	L	I	T	T	E	S	G	N	P	P	T	D	M	Q	M	V	V	L	K	N	T	Q	P	I	S	L	R	D	G	Q	I	V	A	T	C	C	A	L	G	V	F	G	T	T	T	L	V	P	Y	H	L	F	E	E	S	F	D	T	L	V	I	G	D	R	H	L	K	E	Q	D	Y	K	L	D	T	F	E	L	D	G	K	S	D	V	A	A	L	T	L	N	K	G	A	R	V	R	D	I	T	S	H	F	R	D	E	V	K	V															

	1730	1740	1750	1760	1770	1780	1790	1800	1810	1820	1830	1840	1850	1860																																																																																																													
MZ052127.1_BRBV_SC1_L202	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
MZ052128.1_BRBV_SC1_L205	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
OL410606.1_BRBV_B10	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KY432299.1_BRBV_2_SWE1	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
MT160419.1_BRBV_CHN1	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
MZ574106.1_BRBV_6900	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KUI59357.1_BRBV_MexB10	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KUI68861.1_BRBV_4_TCH5	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KUI59358.1_BRBV_MexB29	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
EU236594.1_BRBV_1_EC11	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
NC_010354.1_BRBV_1_EC11	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
MT700546.1_BRBV	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
MT700547.1_BRBV	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KUI68862.1_BRBV_TCH8	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KP264980.1_BRBV_BSRI1	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
OL410605.1_BRBV_D2	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KUI59360.1_BRBV_5_MexB09	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KP264975.1_BRBV_3_BSRI3	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S	D	T	R	L
KUI59361.1_BRBV_MexB48	V	G	Q	L	V	F	N	G	T	A	A	G	F	K	D	H	I	C	S	D	G	T	L	P	N	M	F	V	I	T	A	N	T	Q	Y	G	C	G	S	I	L	V	K	D	G	S	H	T	V	I	I	G	I	H	S	A	G	G	N	G	K	G	Y	A	S	C	T	R	S	A	L	A	L	R	G	R	E	P	E	L	E	G	L	M	L	G	Q	P	G	E	K	V	H	S	R	K	T	L	A	P	T	V	A	Y	G	V	F	R	P	N	Y	G	P	A	A	L	S	N	S				

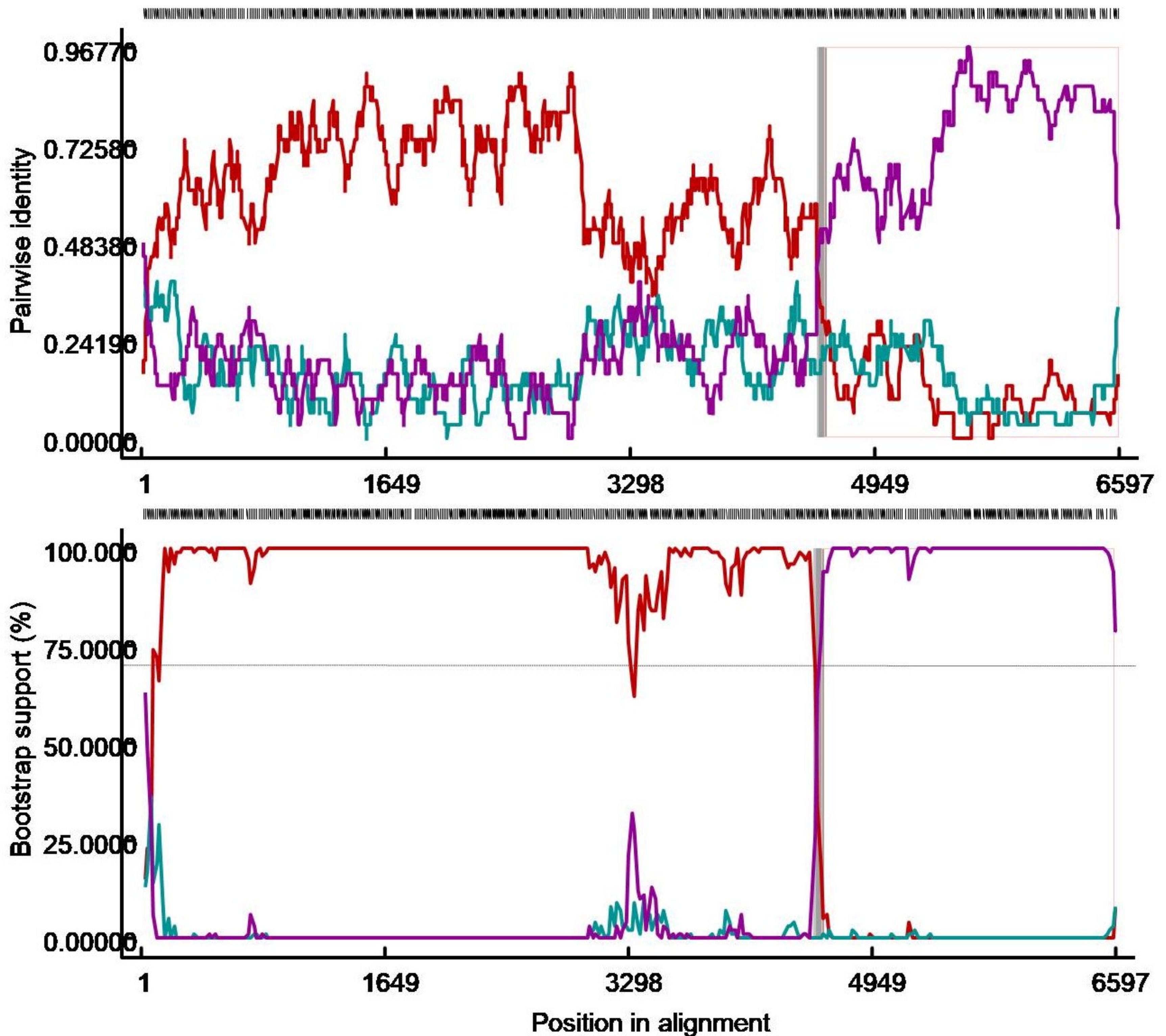
Multiple Sequence Alignment of BRBV

	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120																																																																																																																									
MZ052127.1_BRBV_SC1_LZ02	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
MZ052128.1_BRBV_SC1_LZ05	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N	
OL410606.1_BRBV_B10	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	T	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KY432299.1_BRBV_2_SWE1	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
MT160419.1_BRBV_CHN1	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
MZ574106.1_BRBV_6900	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	T	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KU159357.1_BRBV_MexB10	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	T	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KU168861.1_BRBV_4_TCH5	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	R	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KU159358.1_BRBV_MexB29	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	R	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	H	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
EU236594.1_BRBV_1_EC11	T	R	I	V	D	V	L	P	L	E	H	I	T	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	R	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
NC_010354.1_BRBV_1_EC11	T	R	I	V	D	V	L	P	L	E	H	I	T	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	R	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
MT700546.1_BRBV	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
MT700547.1_BRBV	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KU168862.1_BRBV_TCH8	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KP264980.1_BRBV_BSRI1	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	R	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
OL410605.1_BRBV_D2	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	V	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KU159360.1_BRBV_5_MexB09	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V	A	T	Q	E	F	G	T	H	F	S	Q	Y	K	N	V	T	A	I	D	Y	T	A	F	D	S	C	H	S	T	Q	L	M	S	V	M	A	D	E	L	F	S	D	A	Y	G	F	D	E	R	A	R	Y	A	V	K	S	L	C	K	T	V	H	A	Y	E	D	K	R	I	T	I	D	G	G	L	P	S	G	C	S	A	T	S	I	L	N	T	V	L	N
KP264975.1_BRBV_3_BSRI3	T	R	I	V	D	V	L	P	L	E	H	I	V	F	S	R	K	Y	L	G	R	F	C	A	A	M	H	R	N	Y	G	P	N	I	G	S	A	V	G	C	D	P	D	V																																																																																										

MZ004695.1_CHN1_LZ10
 KU159364.1_USII_02
 MZ004696.1_CHN1_LZ11
 KU159364.1_USII_02
 MZ004694.1_CHN1_LZ01
 KU159364.1_USII_02
 KT948520.1_RS3X
 KP236128.1_Sd-1
 KU159362.1_BS16-2
 KP236129.1_140032-1
 KU159364.1_USII_02
 KP236129.1_140032-1
 KU159364.1_USII_02
 KP236129.1_140032-1
 KU159364.1_USII_02
 KP264974.1_BSRI4
 KP236128.1_Sd-1
 KU159364.1_USII_02
 KP236128.1_Sd-1
 KP236129.1_140032-1
 KU159364.1_USII_02
 KU159363.1_MexB15
 KU159364.1_USII_02
 OP020169.1_NSWL10
 OP020166.1_NSWL9
 JN936206.1_H-1
 OP020164.1_NSWL15
 OP020170.1_NSWL6
 OP020173.1_NSWL8
 OP020162.1_NSWL6.1
 OP020168.1_NSWL3

KU168861.1 BRBV 4 isolate TCH5
 KP264980.1_BRBV_isolate_BSRI1
 KU159358.1 BRBV strain MexB29
 KP264980.1_BRBV_isolate_BSRI1
 KP264975.1 BRBV 3 isolate BSRI3
 MZ052127.1 BRBV strain SC1 LZ02
 KP264980.1_BRBV_isolate_BSRI1
 MT160419.1_BRBV_isolate_BRBV_CHN1
 KU159360.1 BRBV 5 strain MexB09
 KU168862.1_BRBV_isolate_TCH8
 KU159357.1_BRBV_strain_MexB10
 MT700546.1 Bovine rhinitis B virus
 KU168862.1_BRBV_isolate_TCH8
 MT700547.1 Bovine rhinitis B virus
 KU168862.1_BRBV_isolate_TCH8
 KU168862.1 BRBV isolate TCH8
 KP236130.1_BRBV_strain_140032-2
 KP264980.1 BRBV isolate BSRI1
 KP236130.1_BRBV_strain_140032-2
 KU159361.1_BRBV_strain_MexB48
 KU168862.1_BRBV_isolate_TCH8
 MT700546.1 Bovine rhinitis B virus
 NC_010354.1_BRBV_1
 KU159357.1_BRBV_strain_MexB10
 KU168862.1_BRBV_isolate_TCH8
 NC_010354.1_BRBV_1
 KP236130.1_BRBV_strain_140032-2
 MZ574106.1_BRBV_strain_6900
 KU159357.1_BRBV_strain_MexB10
 MT700546.1 Bovine rhinitis B virus
 KP264980.1_BRBV_isolate_BSRI1
 KU159360.1 BRBV 5 strain MexB09

Recombination analysis of BRBV SC1_LZ02



- 95% Breakpoint confidence interval
- 99% Breakpoint confidence interval
- Tract of sequence with a recombinant origin
- MZ574106.1_BRBV_strain_6900 - MT160419.1_BRBV_isolate_BRBV_CHN1
- MZ574106.1_BRBV_strain_6900 - MZ052127.1_BRBV_strain_SC1_LZ02
- MT160419.1_BRBV_isolate_BRBV_CHN1 - MZ052127.1_BRBV_strain_SC1_LZ02
- (Major Parent - Minor Parent)
- (Major Parent - Recombinant)
- (Minor Parent - Recombinant)
- ... Bonferroni corrected P-Value = 0.05