

Supplementary Materials for

Geographic origin and evolutionary history of China's two predominant HIV-1 circulating recombinant forms, CRF07_BC and CRF08_BC

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Supplemental Table S1

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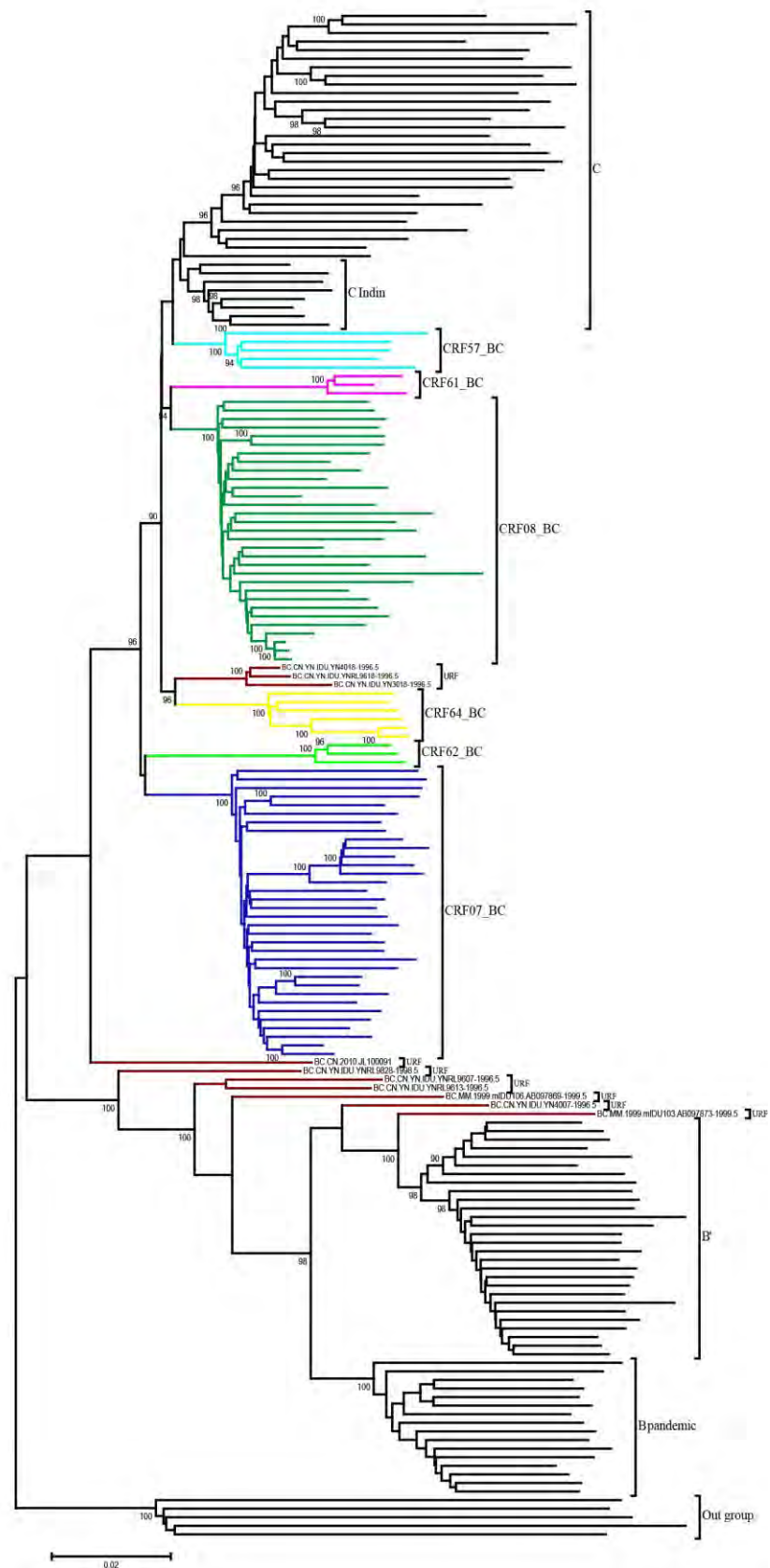
Supplemental Table S1. Estimated substitution rates and tMRCAs of subtype C and its recombinant lineages in China ^a

HIV-1 subtype C and its recombinant lineage	tMRCAs estimation [Median (95% HPD)]		
	Region I (Ia +Ib)	Region II	Region III
	<i>gag</i> (HXB2:790-1191nt;1642-2010nt)	<i>pol</i> (HXB2:3331-5593nt)	<i>env 1</i> (HXB2: 6541nt-8695nt)
C _{AF}	1966.4 (1959.7, 1971.8)	1968.6 (1964.5, 1972.4)	1965.9 (1960.8, 1969.9)
C _{IN}	1978.0 (1972.9, 1982.9)	1976.2 (1972.6, 1979.4)	1971.8 (1968.4, 1974.9)
Yunnan URFs_BC	1987.0 (1981.6, 1991.5)	1988.6 (1986.4, 1990.6)	1986.1 (1983.8, 1988.2)
CRF07_BC	1994.0 (1991.9, 1995.6)	1994.1 (1992.8, 1995.4)	1991.6 (1989.6, 1993.3)
CRF08_BC	1992.7 (1989.9, 1994.9)	1992.7 (1990.5, 1994.4)	1990.7 (1988.7, 1992.5)
CRF57_BC			1993.2 (1990.7, 1995.3)
CRF61_BC	2003.6 (2000.5, 2006.0)	2002.6 (2000.1, 2004.6)	2001.5 (1999.3, 2003.6)
CRF62_BC	2003.7 (1998.8, 2007.2)	2003.0 (2000.0, 2005.7)	2002.3 (1999.4, 2004.9)
CRF64_BC			1995.4 (1993.3, 1998.0)

^a Based on BEAST analysis under a relaxed molecular clock with GTR + γ_4 substitution model and skyline model. Estimated substitution rates are 3.76×10^{-3} , 2.23×10^{-3} , and 6.36×10^{-3} substitutions/site/year for *gag* (Region (Ia +Ib)), *pol* (II), and *env* (III) regions, respectively. ESS values are >200 for all data sets.

Supplementary Figure S1

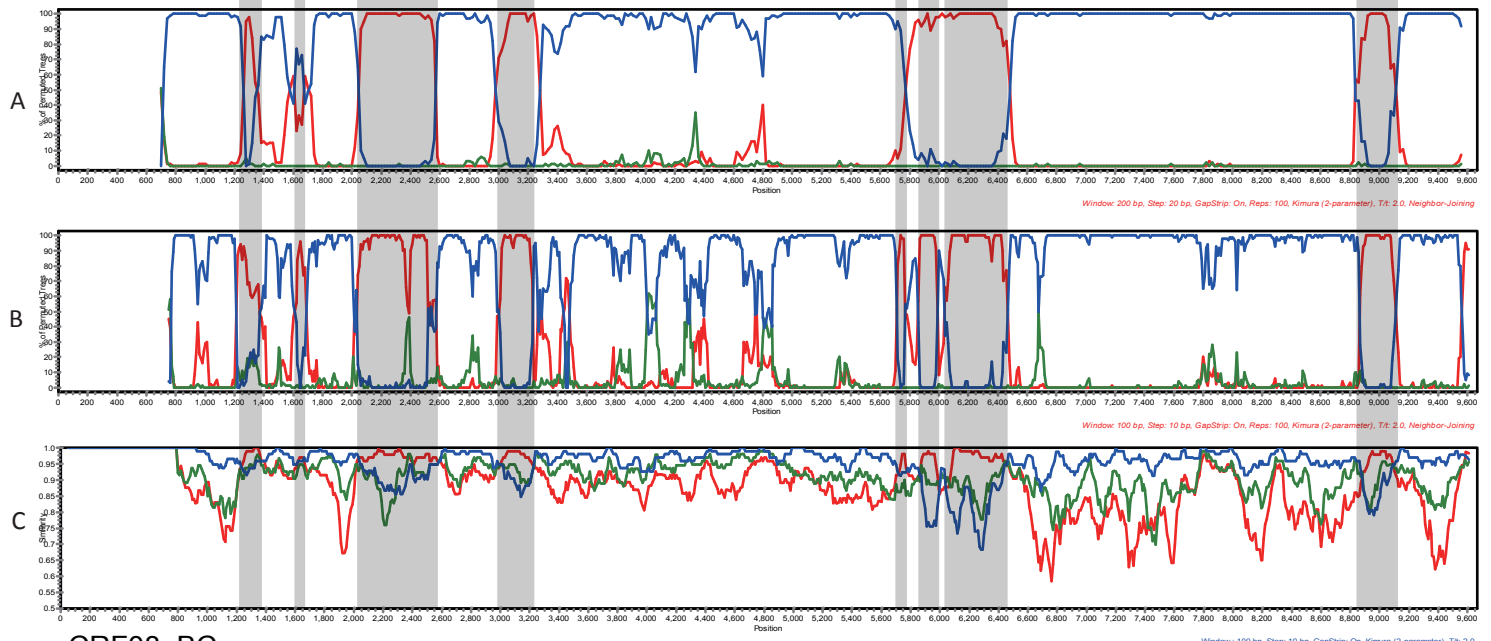
Neighbor-joining tree constructed with MEGA 6 using the NFLG sequences



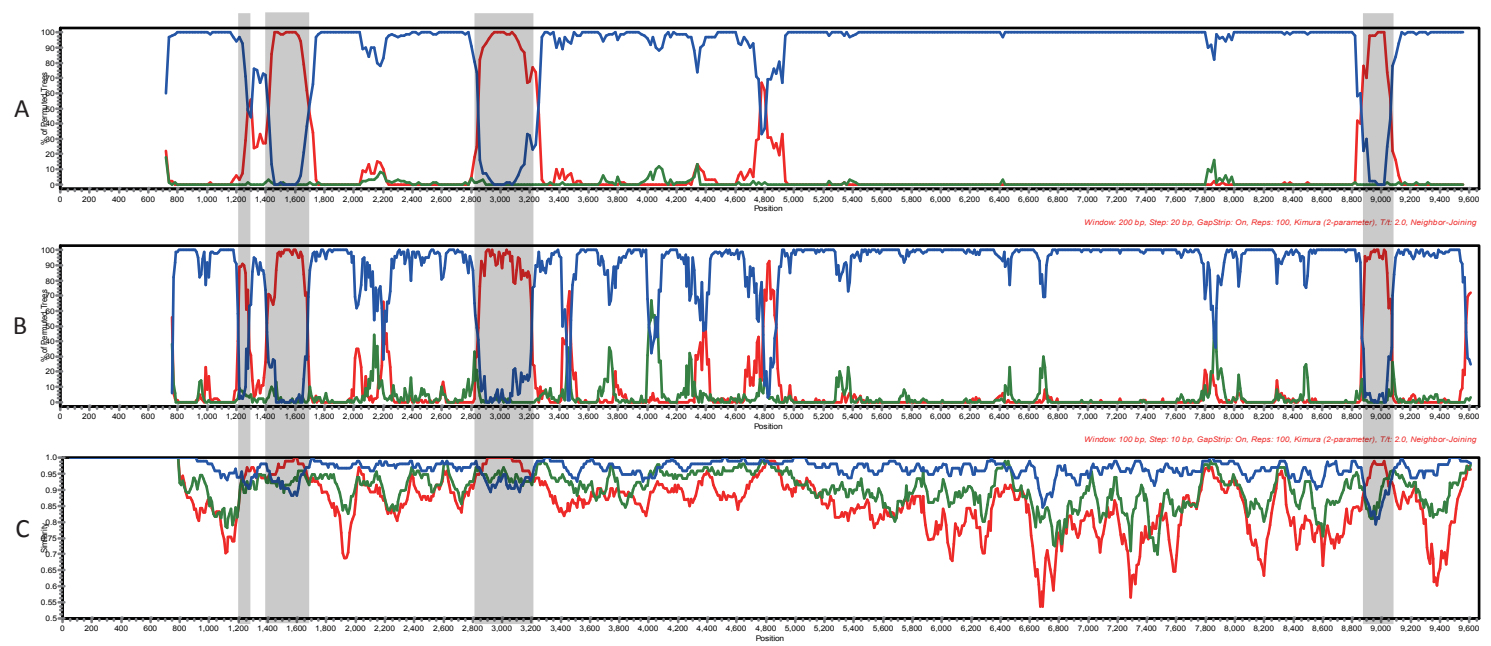
Supplementary Figure S2

Bootscanning and similarity plot analyses performed with different window and step sizes for defining the precise subtype structure of CRFs and URFs in this study

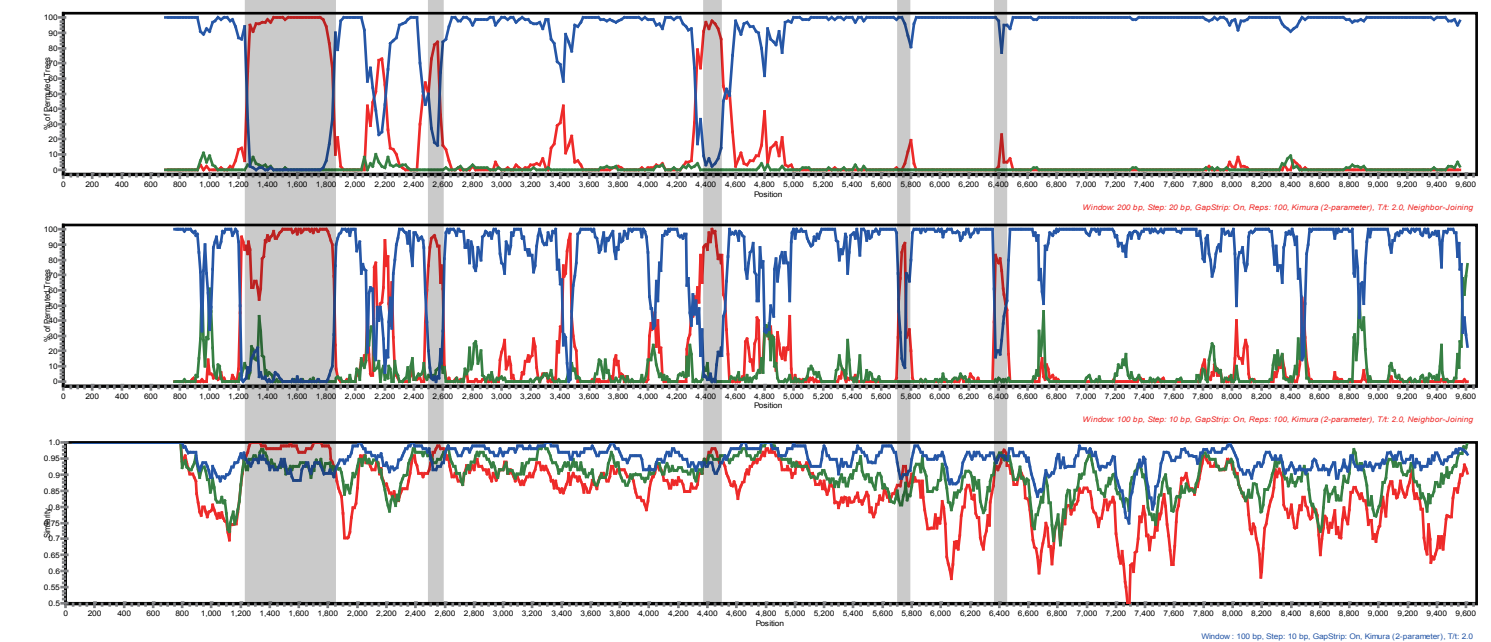
CRF07_BC



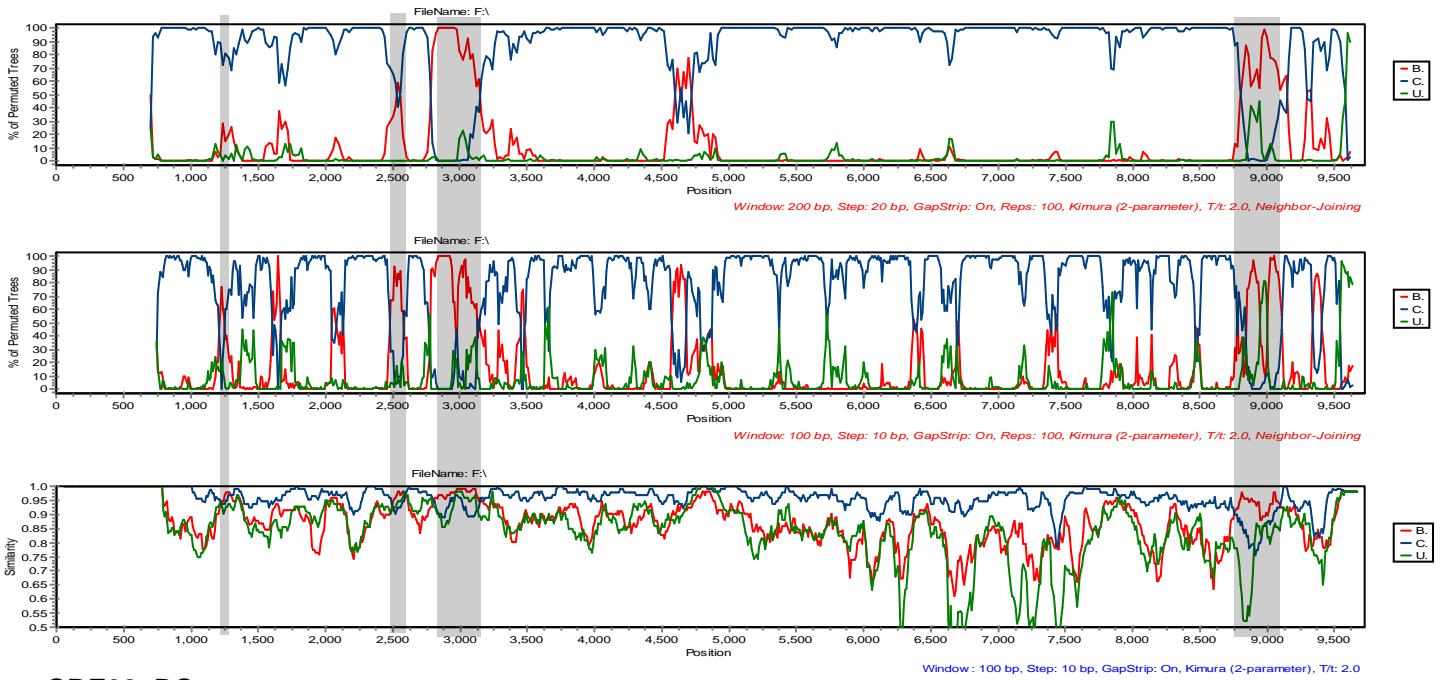
CRF08_BC



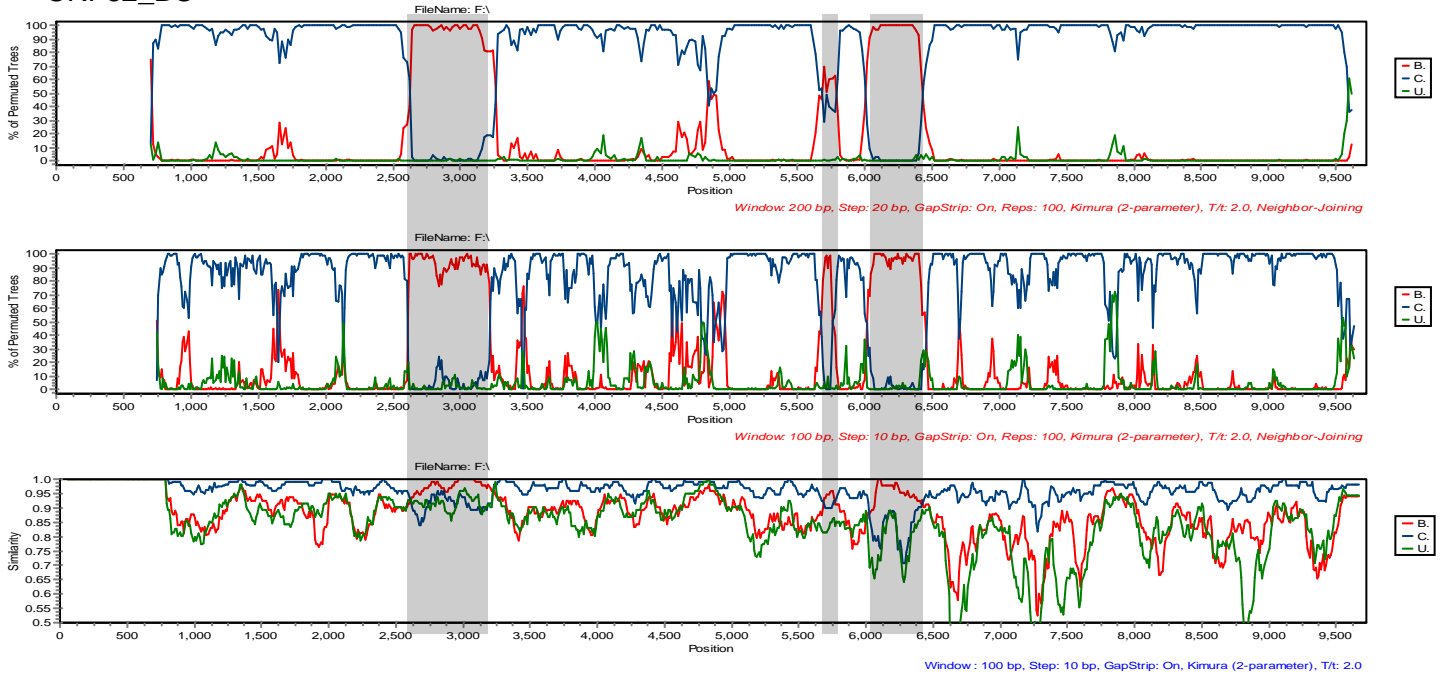
CRF57_BC



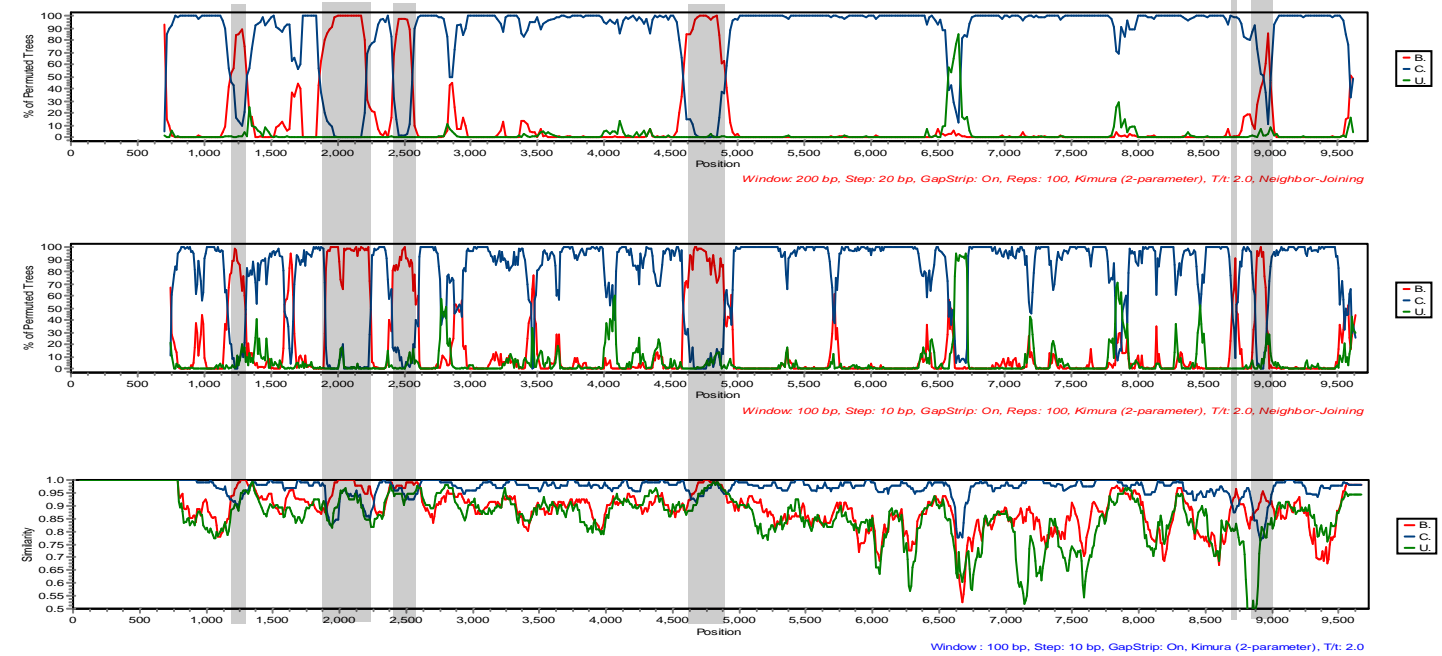
CRF61_BC



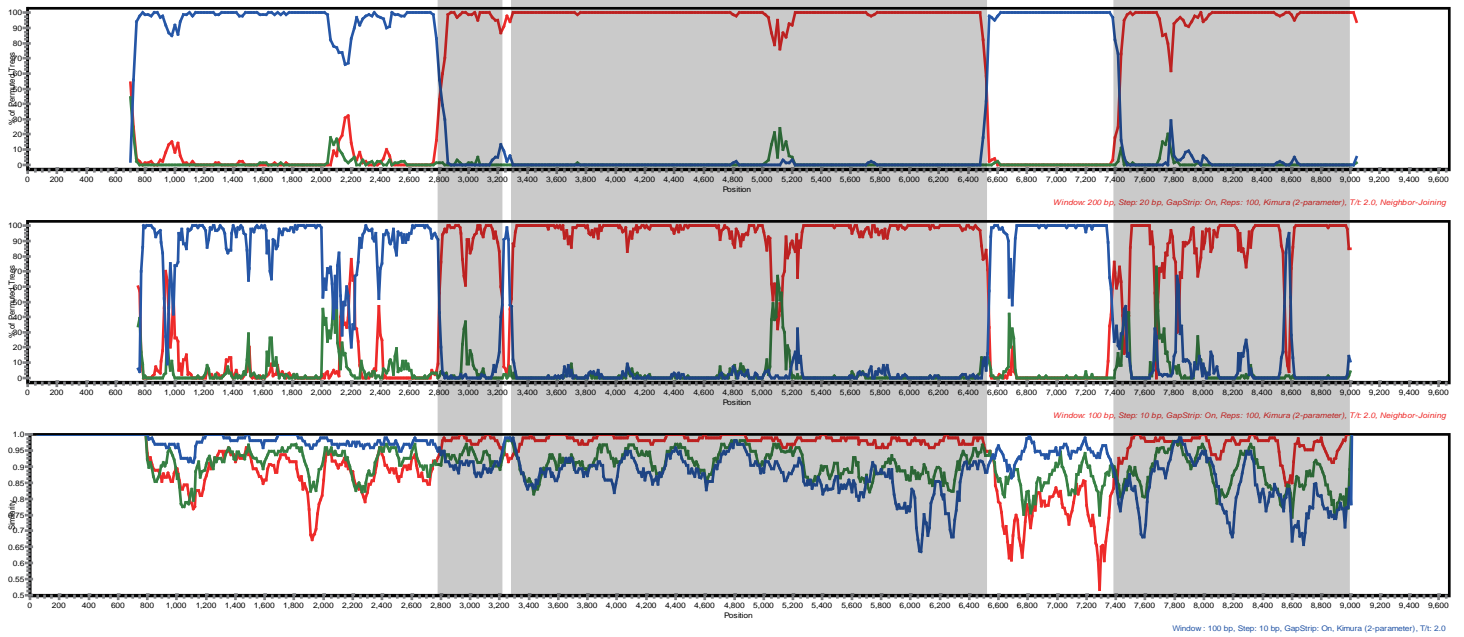
CRF62_BC



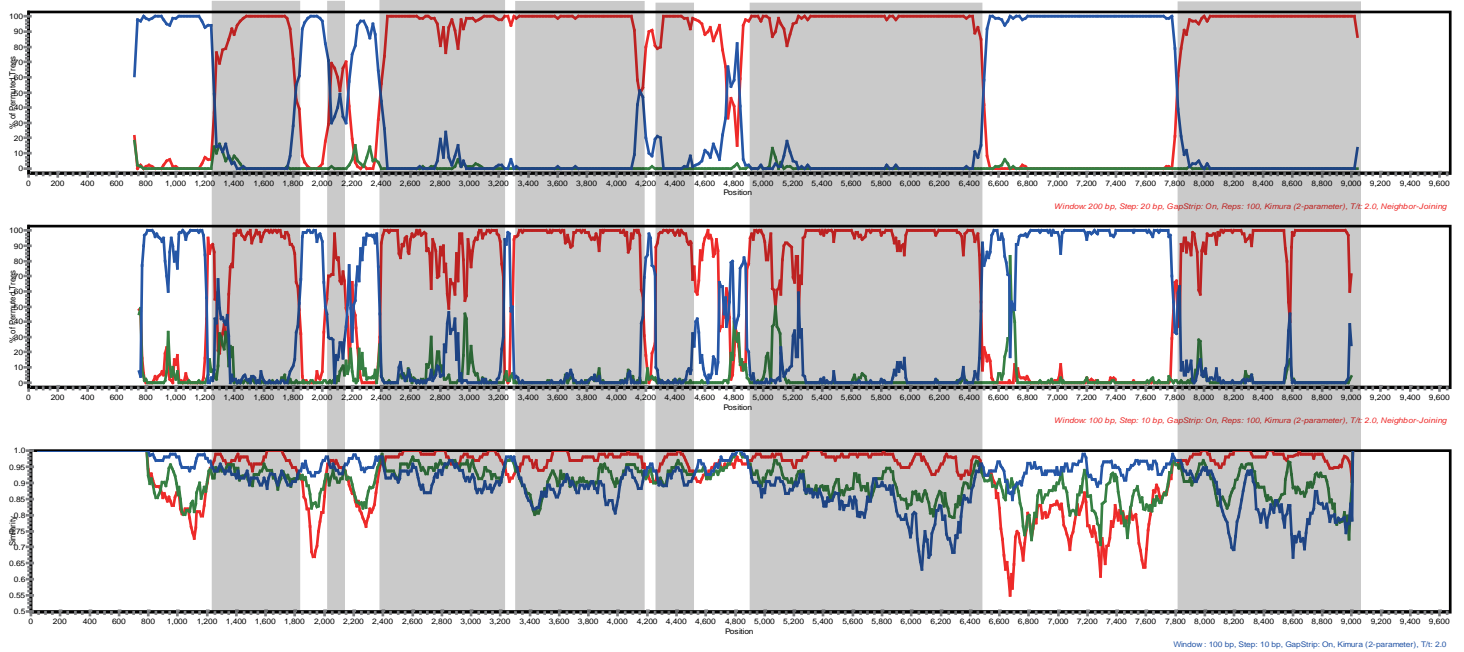
CRF64_BC



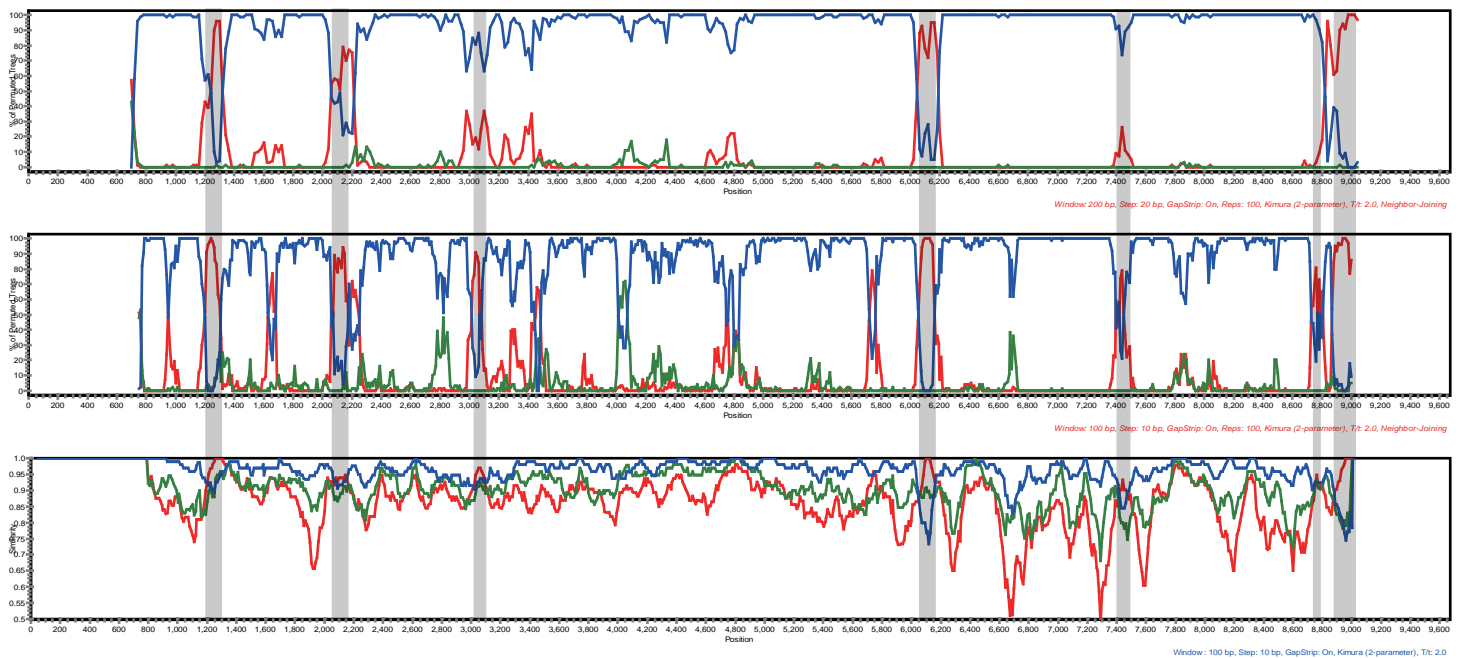
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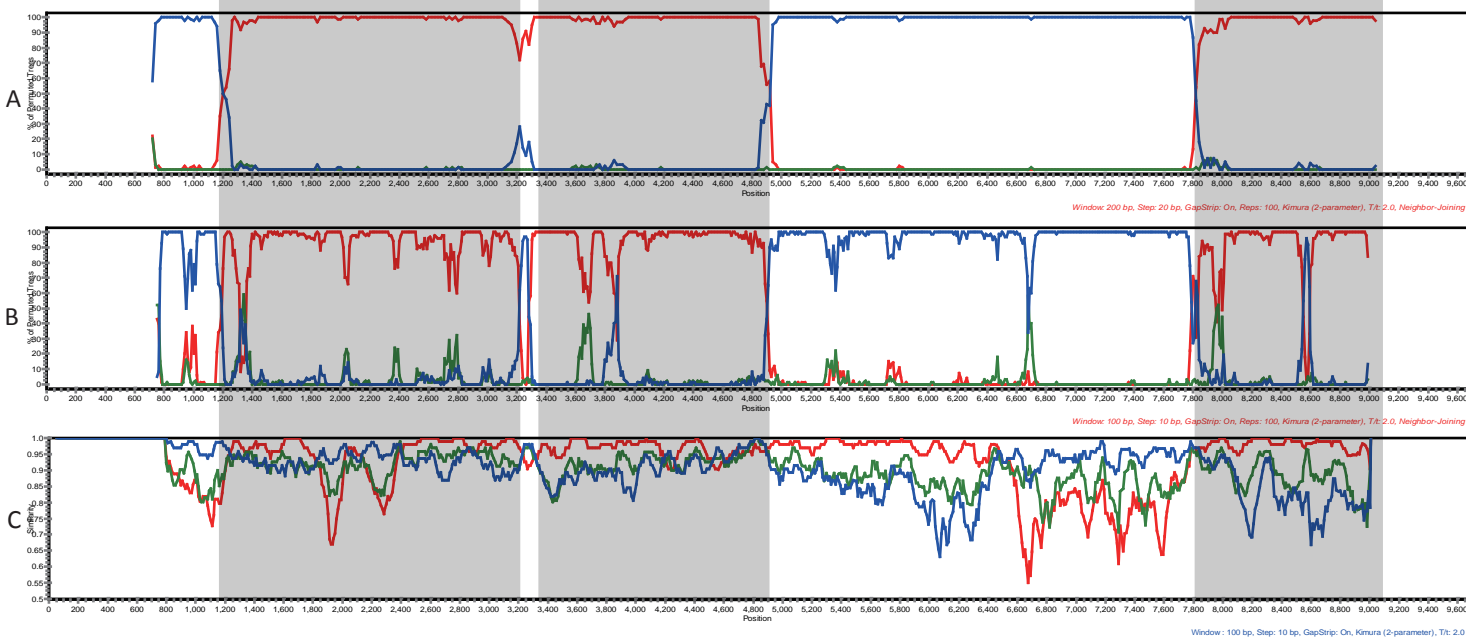
Query: YNRL9613



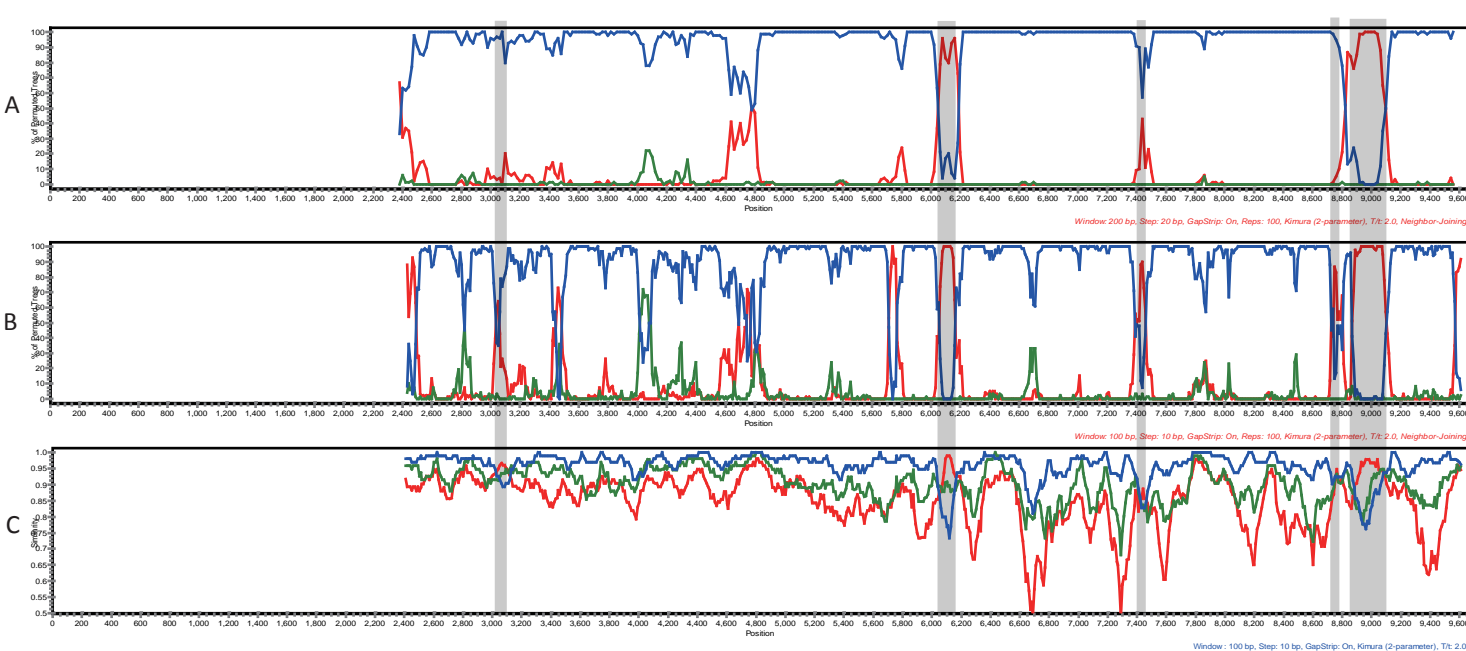
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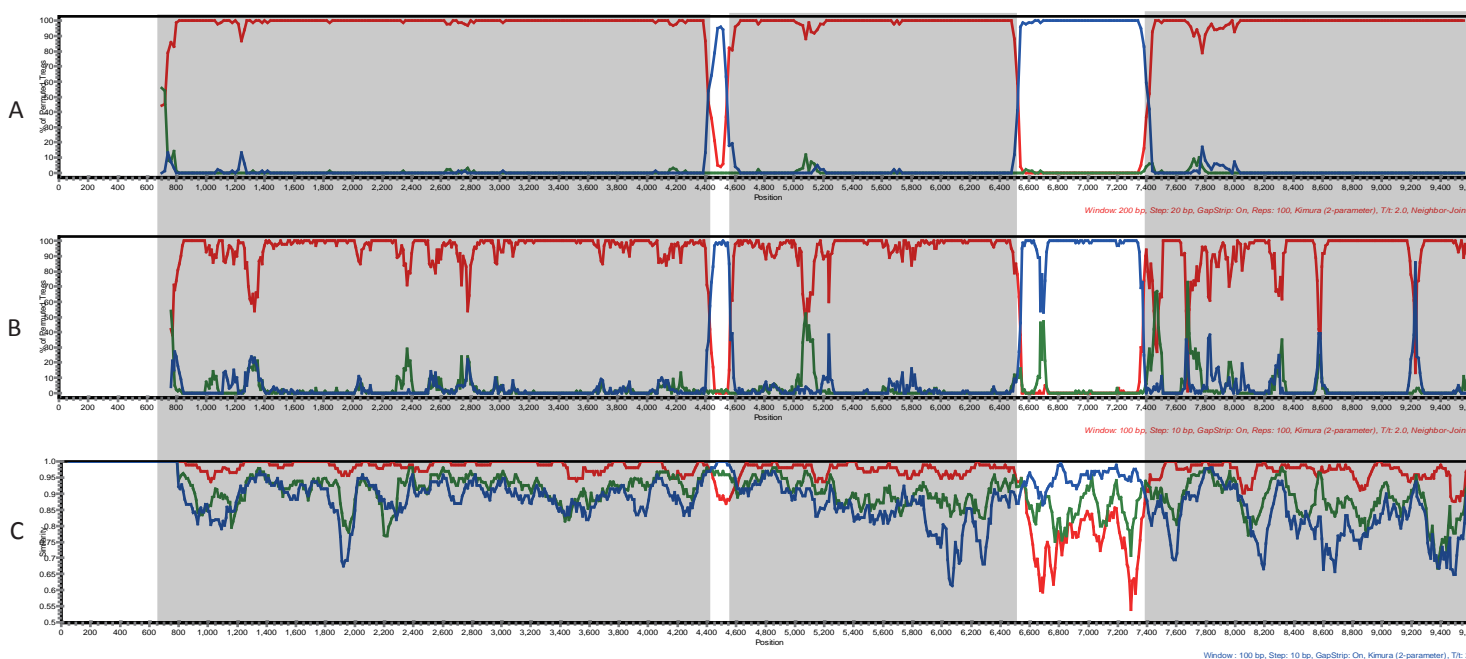
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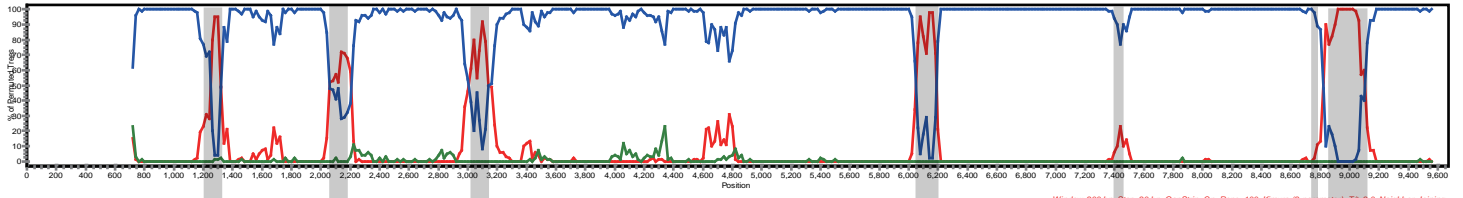
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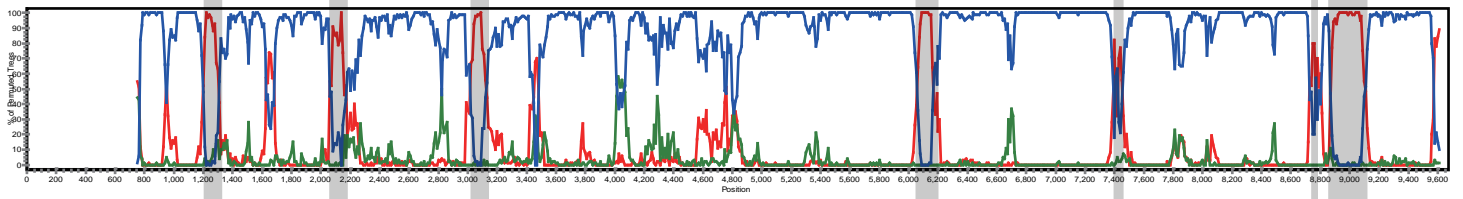
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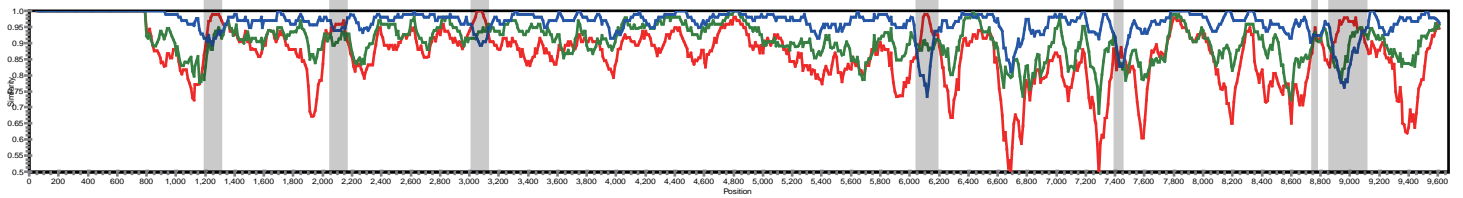
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Window: 200 bp, Step: 20 bp, GapStrip: On, Reqs: 100, Kimura (2-parameter), Tt: 2.0, Neighbor-Joining

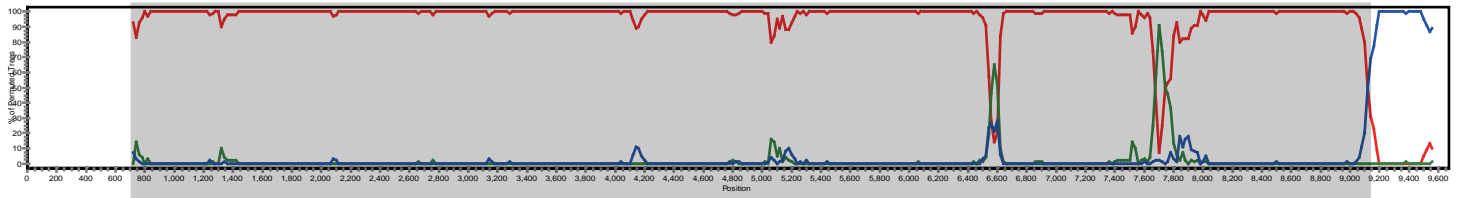


Window: 100 bp, Step: 10 bp, GapStrip: On, Reqs: 100, Kimura (2-parameter), Tt: 2.0, Neighbor-Joining

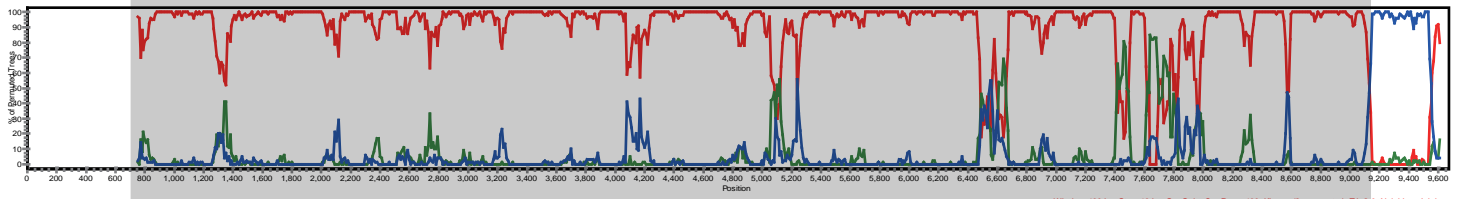


Window: 100 bp, Step: 10 bp, GapStrip: On, Kimura (2-parameter), Tt: 2.0

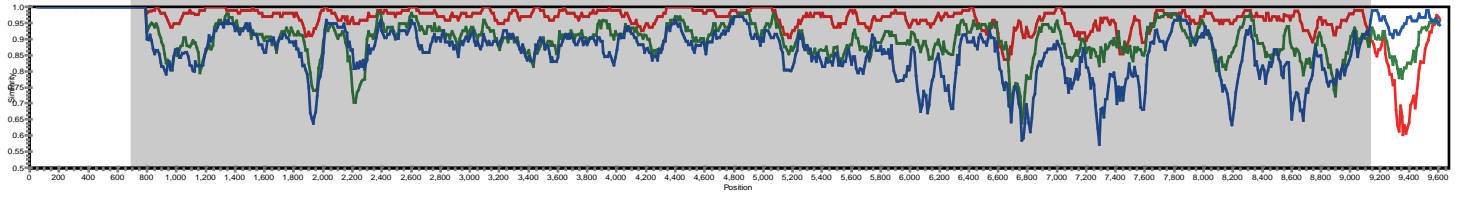
Query: mDU103



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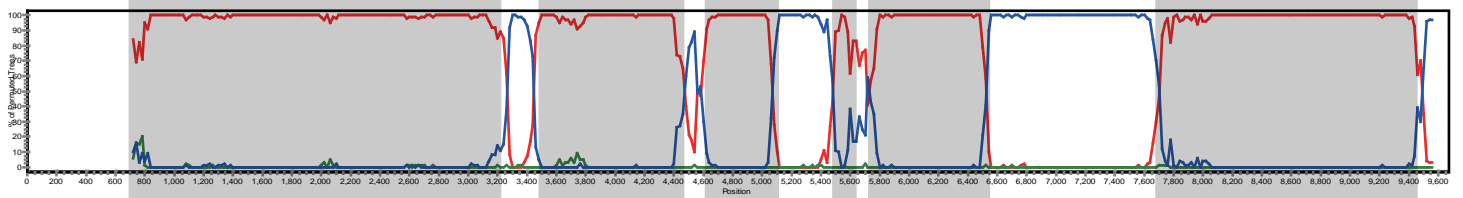


Window: 100 bp, Step: 10 bp, GapStrip: On, Reqs: 100, Kimura (2-parameter), Tt: 2.0, Neighbor-Joining

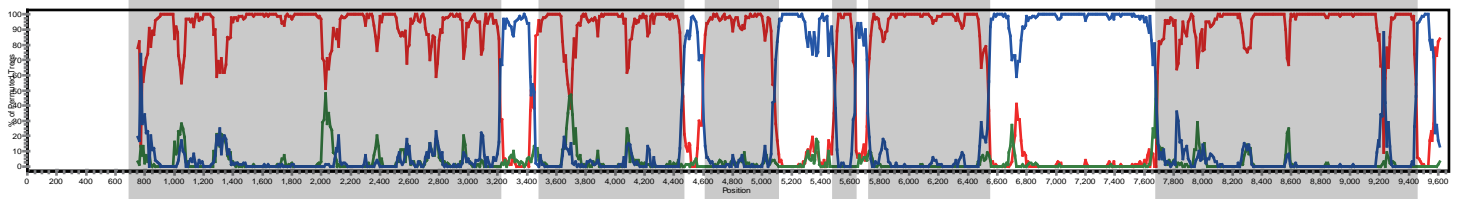


Window: 100 bp, Step: 10 bp, GapStrip: On, Kimura (2-parameter), Tt: 2.0

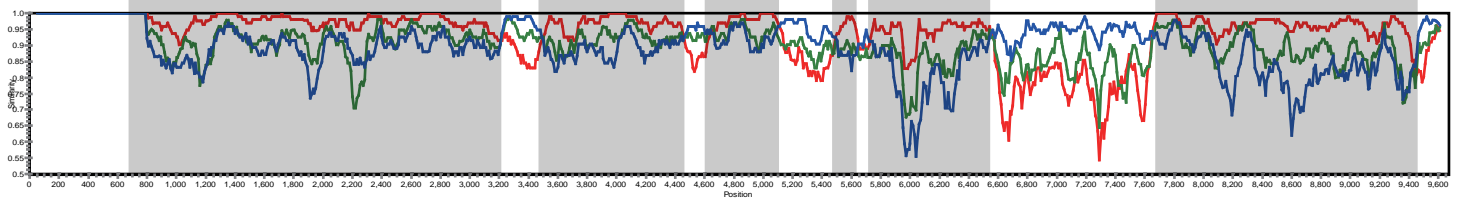
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Window: 200 bp, Step: 20 bp, GapStrip: On, Reqs: 100, Kimura (2-parameter), Tt: 2.0, Neighbor-Joining



Window: 100 bp, Step: 10 bp, GapStrip: On, Reqs: 100, Kimura (2-parameter), Tt: 2.0, Neighbor-Joining



Window: 100 bp, Step: 10 bp, GapStrip: On, Kimura (2-parameter), Tt: 2.0

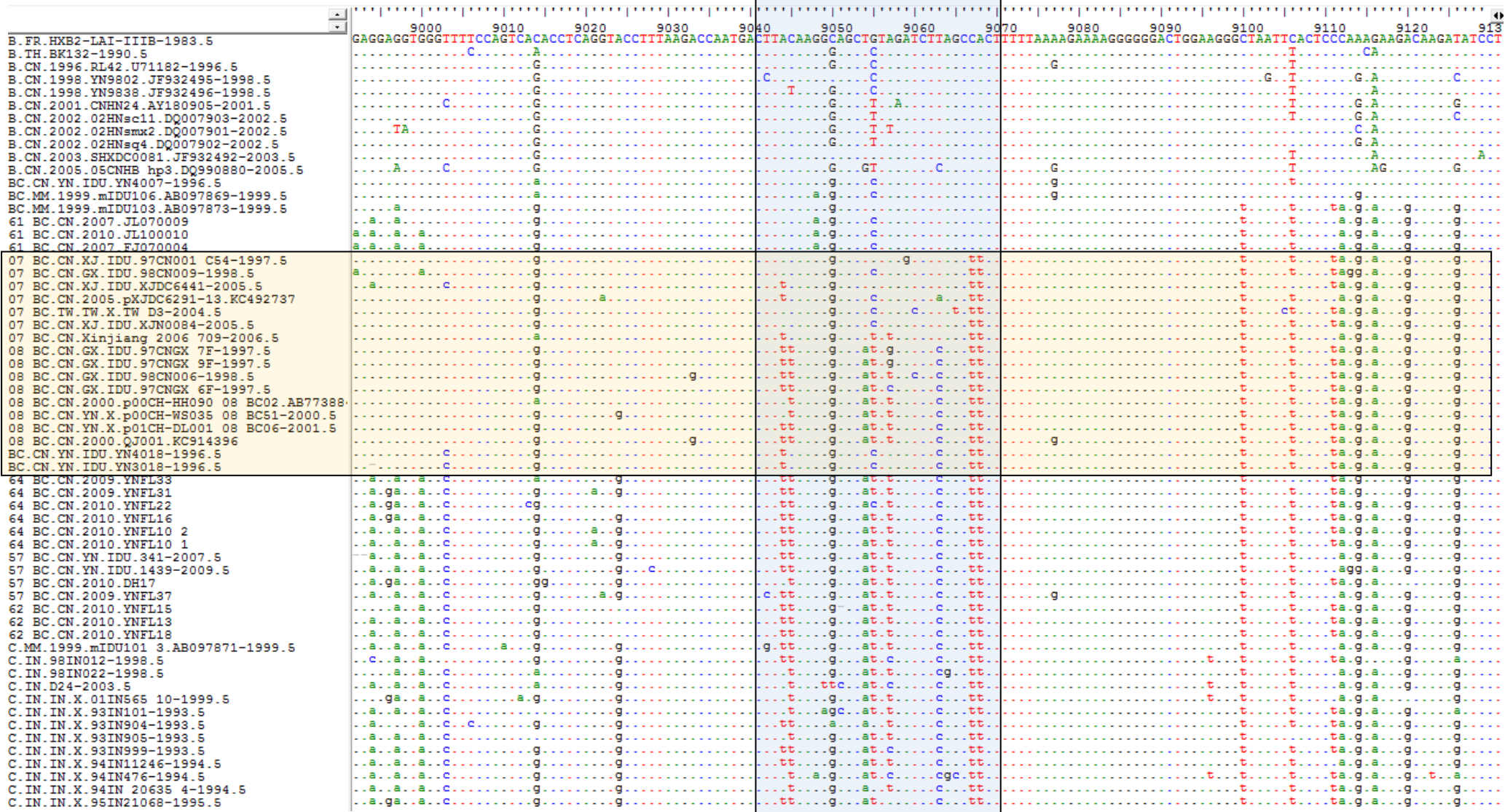
Site 3 (HXB2: ~3180)



Site 4 (HXB2: ~5694)

	5620	5630	5640	5650	5660	5670	5680	5690	5700	5710	5720	5730	5740	5750
B.FR.HXB2-LAI-IIIB-1993.5	GAGCTTTT	TAGAGGAGCTT	AAGAAATGAAGCTG	TTAGACATTTT	CCTAGGATTGG	CTCCATGGG	CTTAGGGCAAC	ATATCTATGAAACTTA	GGGGATACTT	GGGCGAGGAGTGG	AAGCCATAAT	AAGAAATTC	TGCAACAAC	T
B.TH.BK132-1990.5			GA		C	CA		T		C				
B.CN.1996.RL42.U71182-1996.5			GA			A	A	C	A					C
B.CN.1998.YN9802.JF932495-1998.5	A		G			G	A	C	A					C
B.CN.1998.YN9838.JF932496-1998.5			GA			A	T	G	G	A		T	G	C
B.CN.2001.CNHN24.AY180905-2001.5	G		GGG			G		AG	C	A			T	C
B.CN.2002.02HNsc11.DQ007903-2002.5			GG			A		AG	C	A				
B.CN.2002.02HNsmx2.DQ007901-2002.5			GG			CA		C	C	A				
B.CN.2002.02HNsq4.DQ007902-2002.5			GG			GA		AG	C	A				
B.CN.2003.SHXDC0081.JF932492-2003.5			GG			GA		AG	C	A				
B.CN.2005.05CNHB.hp3.DQ990880-2005.5		A	GG			GA		AG	C	A			T	
BC.CN.YN.IDU.YN4007-1996.5						g		g	a	t				c
BC.CN.YN.IDU.YNRL9613-1996.5						g		g	g	a				c
BC.CN.YN.IDU.YNRL9607-1996.5						g		g	g	a				c
BC.MM.1999.mIDU103.AB097873-1999.5				a		g	a	c	a	g				c
BC.MM.1999.mIDU106.AB097869-1999.5		a		ga		c		c						a
BC.CN.YN.IDU.YNRL9618-1996.5		c	a	c	c	g		c	a					c
BC.CN.YN.IDU.YN3018-1996.5			c	c	c	g		c	a					c
57 BC.CN.YN.IDU.341-2007.5		c	a	a	c	c	g		c					c
57 BC.CN.YN.IDU.1439-2009.5			a	c	c	g		c	a					c
57 BC.CN.2010.DH17			a	c	c	g		c	a					c
57 BC.CN.2009.YNFL37			a	c	c	g		c	a					c
62 BC.CN.2010.YNFL15		g	a	c	c	g		t	a	ca				c
62 BC.CN.2010.YNFL13		g	a	c	c	g		t	a	ca				c
62 BC.CN.2010.YNFL18		g	a	c	c	g		t	a	ca				c
07 BC.CN.KJ.IDU.97CN001.C54-1997.5			c	c	c	g		c	a					c
07 BC.CN.GX.IDU.98CN009-1998.5			c	c	c	g		c	a					c
07 BC.CN.KJ.IDU.XJDC6441-2005.5			c	c	c	g		c	a					c
07 BC.CN.2005.pXJDC6291-13.KC492737			c	c	c	g		c	a					c
07 BC.TW.TW.X.TW.D3-2004.5		a		c	c	g		c	a					c
07 BC.CN.KJ.IDU.XJN0084-2005.5			c	c	c	g		c	a					c
07 BC.CN.Xinjiang.2006.709-2006.5			c	c	c	g		c	a					c
08 BC.CN.GX.IDU.97CNGX.7F-1997.5			a	c	c	g		t	a					c
08 BC.CN.GX.IDU.97CNGX.9F-1997.5			a	c	c	g		t	a					c
08 BC.CN.GX.IDU.98CN006-1998.5			a	c	c	g		t	a					c
08 BC.CN.GX.IDU.97CNGX.6F-1997.5			a	c	c	g		t	a					c
08 BC.CN.2000.p00CH-HH090.08.BC02.AB77388			a	c	c	g		t	a					c
08 BC.CN.YN.X.p00CH-WS035.08.BC51-2000.5			a	c	c	g		t	a					c
08 BC.CN.YN.X.p01CH-DL001.08.BC06-2001.5			a	c	c	g		t	a					c
08 BC.CN.2000.QJ001.KC914396			a	c	c	g		t	a					c
BC.CN.YN.IDU.YNRL9828-1998.5			a	c	c	g		t	a					c
61 BC.CN.2007.JL070009			a	c	c	g		t	a					c
61 BC.CN.2010.JL100010			a	c	c	g		t	a					c
61 BC.CN.2007.FJ070004			a	c	c	g		t	a					c
64 BC.CN.2009.YNFL33			a	c	c	g		t	a					c
64 BC.CN.2009.YNFL31			a	c	c	g		t	a					c
64 BC.CN.2010.YNFL22			a	c	c	g		t	a					c
64 BC.CN.2010.YNFL16			a	c	c	g		t	a					c
64 BC.CN.2010.YNFL10.2			a	c	c	g		t	a					c
64 BC.CN.2010.YNFL10.1			a	c	c	g		t	a					c
BC.CN.YN.IDU.YN4018-1996.5			a	c	c	g		t	a					c
C.CN.YN.IDU.YNRL9840-1998.5			a	c	c	g		t	a					c
C.MM.1999.mIDU101.3.AB097871-1999.5			a	c	c	g		t	a					c
C.IN.98IN012-1998.5			a	c	c	g		t	a					c
C.IN.98IN022-1998.5			a	c	c	g		t	a					c
C.IN.D24-2003.5			a	c	c	g		t	a					c
C.IN.IN.X.01IN565.10-1999.5			a	c	c	g		t	a					c
C.IN.IN.X.93IN101-1993.5			a	c	c	g		t	a					c
C.IN.IN.X.93IN904-1993.5			a	c	c	g		t	a					c
C.IN.IN.X.93IN905-1993.5			a	c	c	g		t	a					c
C.IN.IN.X.93IN999-1993.5			a	c	c	g		t	a					c
C.IN.IN.X.94IN11246-1994.5			a	c	c	g		t	a					c
C.IN.IN.X.94IN476-1994.5			a	c	c	g		t	a					c
C.IN.IN.X.94IN.20635.4-1994.5			a	c	c	g		t	a					c
C.IN.IN.X.95IN21068-1995.5			a	c	c	g		t	a					c

Site 8 (HXB2: ~9059)

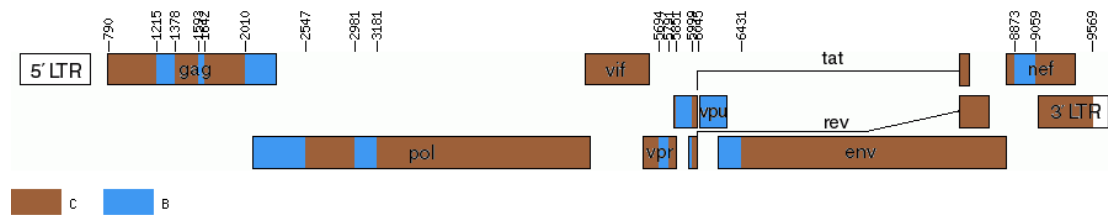


Supplemental Figure S4

The updated subtype structures and breakpoints of recombinations of the CRFs_BC

CRF07_BC

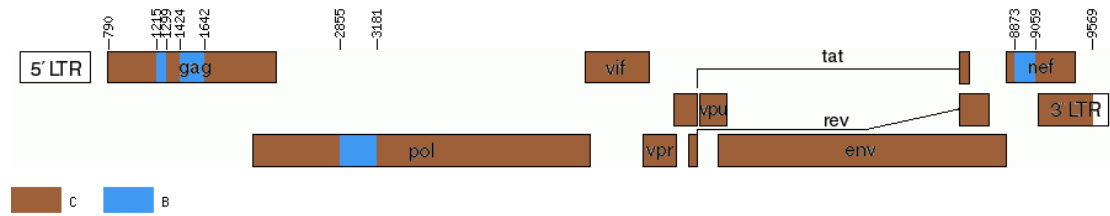
1	789	N
790	1214	C
1215	1377	B
1378	1593	C
1593	1641	B
1642	2009	C
2010	2546	B
2547	2980	C
2981	3180	B
3181	5693	C
5694	5790	B
5791	5850	C
5851	5998	B
5999	6044	C
6045	6430	B
6431	8872	C
8873	9059	B
9059	9569	C
9570	9686	N



CRF08_BC

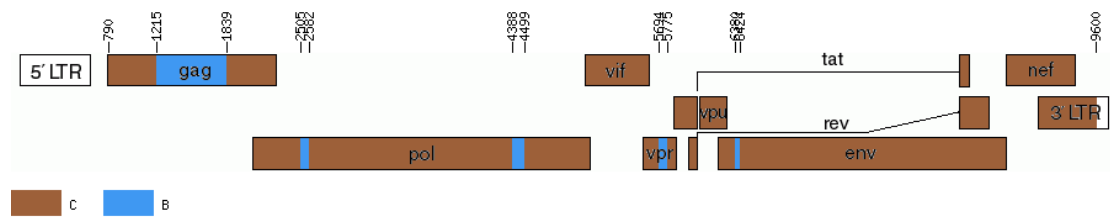
1	789	N
790	1214	C
1215	1298	B
1299	1423	C
1424	1641	B
1642	2854	C
2855	3180	B

3181	8872	C
8873	9059	B
9059	9569	C
9570	9686	N



CRF57_BC

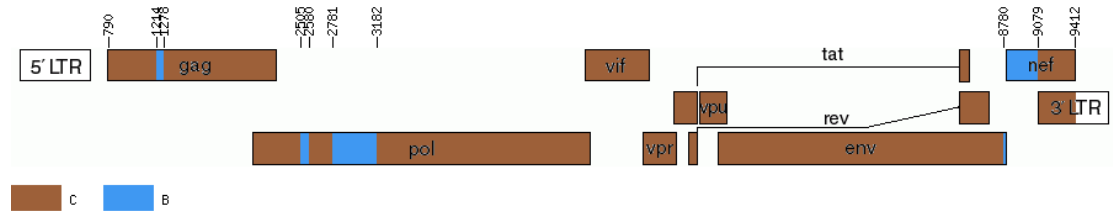
1	789	N
790	1214	C
1215	1838	B
1839	2504	C
2505	2581	B
2582	4387	C
4388	4498	B
4499	5693	C
5694	5774	B
5775	6379	C
6380	6423	B
6424	9600	C
9601	9686	N



CRF61_BC

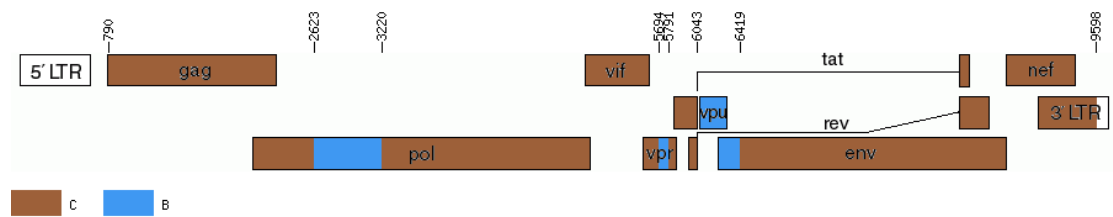
1	789	N
790	1213	C
1214	1277	B
1278	2504	C
2505	2579	B

2580	2780	C
2781	3181	B
3182	8779	C
8780	9078	B
9079	9412	C
9413	9689	N



CRF62_BC

1	789	N
790	2622	C
2623	3219	B
3220	5693	C
5694	5790	B
5791	6042	C
6043	6418	B
6419	9598	C
9599	9686	N



CRF64_BC

1	789	N
790	1191	C
1192	1331	B
1332	1599	C
1600	1641	B
1642	1917	C
1918	2277	B
2278	2455	C
2456	2584	B
2585	4633	C

4634	4919	B
4920	8679	C
8680	8752	B
8753	8872	C
8873	9009	B
9009	9602	C
9603	9686	N

