



## **Molecular characteristics of Human Endogenous Retrovirus type-W in schizophrenia and bipolar disorder.**

Hervé Perron, Nora Hamdani, Raphaël Faucard, Mohamed Lajnef, Stéphane Jamain, Claire Daban-Huard, Samuel Sarrazin, Emmanuel Leguen, Josselin Houenou, Marine Delavest, et al.

► **To cite this version:**

Hervé Perron, Nora Hamdani, Raphaël Faucard, Mohamed Lajnef, Stéphane Jamain, et al.. Molecular characteristics of Human Endogenous Retrovirus type-W in schizophrenia and bipolar disorder.: HERV-W in schizophrenia and bipolar disorder. *Transl Psychiatry*, 2012, 2, pp.e201. <10.1038/tp.2012.125>. <inserm-00807038>

**HAL Id: inserm-00807038**

**<http://www.hal.inserm.fr/inserm-00807038>**

Submitted on 2 Apr 2013

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## SUPPLEMENTARY INFORMATION

# Molecular characteristics of Human Endogenous Retrovirus type-W (HERV-W) in schizophrenia and bipolar disorder.

### TABLE OF CONTENT:

<b>I. Complementary Statistical analyses</b>	<b>P. 2</b>
TABLE S1: HERV-W RNA RELATIVE EXPRESSION OF THE MSRV SUBTYPE, ALL CONTROLS	
TABLE S2: RELATIVE EXPRESSION OF THE MSRV SUBTYPE, CONTROLS WITH NEGATIVE CRP (C-)	
TABLE S3: HERV-W RNA RELATIVE EXPRESSION AND DNA COPY NUMBERS STATISTICAL ANALYSES EXCLUDING BIPOLAR DISORDER PATIENTS TREATED WITH VALPROATE.	
<b>II. Sequence analyses</b>	<b>P. 3</b>
FIGURE S1: SEQUENCE ALIGNEMENTS WITH THE PROBE	P3-14
FIGURE S1A: HC RNA	P3-4
FIGURE S1B: HC DNA	P5-6
FIGURE S1C: BD RNA	P7-8
FIGURE S1D: BD DNA	P9-10
FIGURE S1E: SZ RNA	P11-12
FIGURE S1F: SZ DNA	P13-14
FIGURE S2: PHYLOGENETIC TREE REPRESENTATION OF ALIGNED CLONES WITH RELATED HERV-W AND DISTANT HERV-K ENV GENE SEQUENCES:	P15-17
FIGURE S2A: RNA AND DNA CLONES FROM BD	P15
FIGURE S2B: RNA AND DNA CLONES FROM SZ	P16
FIGURE S2C: RNA AND DNA CLONES FROM HC	P17

**I. Complementary Statistical analyses:**

Table S1: HERV-W RNA relative expression of the MSR/V subtype, all controls

Variables	BP,N=91	SZ,N=45	Controls,N=73	P for all	P BP vs TEM	P BP vs SZ	P SZ vs TEM
	Mean(SD)			P value Kruskal Wallis/Mann Whitney			
RNA	1.62 (4.6)	0.84 (0.5)	0.65 (0.6)	<0.0001	<0.0001	0.01	0.012
DNA	0.61(0.3)	0.55(0.3)	0.77(0.3)	0.0005	0.0016	0.575	0.0003

Table S2: HERV-W relative expression of the MSR/V subtype, Controls with negative CRP (C-)

Variables	BP,N=91	SZ,N=45	Controls,N=46	P for all	P BP vs TEM	P BP vs SZ	P SZ vs TEM
	Mean(SD)			P value Kruskal Wallis/Mann Whitney			
RNA	1.62 (4.6)	0.84 (0.5)	0.62 (0.6)	<0.0001	<0.0001	0.01	0.007
DNA	0.60(0.3)	0.55(0.3)	0.77(0.3)	0.0015	0.003	0.575	0.0006

Table S3: HERV\_W RNA relative expression and DNA copy numbers of the MSR/V subtype. Statistical analyses excluding Bipolar Disorder Patients treated with Valproate.

Variables	BP,N=68	SZ,N=45	Controls,N=73	P for all	P BP vs TEM	P BP vs SZ	P SZ vs TEM
	Mean(SD)			P value Kruskal Wallis/Mann Whitney			
RNA	1.71 (5.3)	0.84 (0.5)	0.65 (0.6)	<0.0001	<0.0001	0.087	0.007
DNA	0.61(0.3)	0.55(0.3)	0.77(0.3)	0.0009	0.006	0.468	0.0003

## II. Sequence analyses

**Figure S1: Sequence alignments with the HERV-W/MSRV-env specific Probe**

Figure S1A: HC RNA

```

MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG
              10      20
              AAGAAGTTTACCTCGGGTCTACGTC

1. RNA-H12_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

2. RNA-H12_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

3. RNA-H12_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

4. RNA-H12_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

5. RNA-H12_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

6. RNA-H12_6  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

7. RNA-H12_8  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

8. RNA-H12_9  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

9. RNA-H16_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

10. RNA-H16_  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

11. RNA-H16_  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

12. RNA-H16_  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

13. RNA-H16_  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

14. RNA-H1_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

15. RNA-H1_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

16. RNA-H1_2  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

17. RNA-H1_3  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCAG

18. RNA-H12_  40      50
[ 100 ]      TTCTTCAAATGGAGCCCAGATGCA>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCAGATGCA
    
```

19. RNA-H16\_ 40 50  
 [ 100 ] TTCTTCAAATGGANCCCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

20. RNA-H1\_8 40 50  
 [ 100 ] TTCTTCAAATGGAGCCCCAGATGCA>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCA

21. RNA-H12\_ 130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

22. RNA-H12\_ 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

23. RNA-H12\_ 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

24. RNA-H16\_ 130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

25. RNA-H16\_ 130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

26. RNA-H16\_ 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

27. RNA-H16\_ 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

28. RNA-H1\_1 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

29. RNA-H1\_1 130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

30. RNA-H1\_1 130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

31. RNA-H1\_7 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

32. RNA-H16\_ 130 120 110  
 [ 92 ] <TTCTTCAAACGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

33. RNA-H12\_ 320 330  
 [ 88 ] TTCTTCAAATGGAGCCCCAGA--CAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

## Figure S1B: HC DNA

```

MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG
              10      20
              AAGAAGTTTACCTCGGGGTCTACGTC

1. DNA-H12_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

2. DNA-H12_5  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

3. DNA-H16_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

4. DNA-H16_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

5. DNA-H16_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

6. DNA-H16_140 50      60
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

7. DNA-H16_5  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

8. DNA-H16_8  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

9. DNA-H1_13  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

10. DNA-H1_1  40      50
[ 104 ]      TTCTTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

11. DNA-H12_ 130     120     110
[ 98 ]      <TTCTTCAAATGGAAACCCAGATGCAG
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

12. DNA-H12_  40      50
[ 98 ]      TTCCTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

13. DNA-H12_  40      50
[ 98 ]      TTCCTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

14. DNA-H16_40 50      60
[ 98 ]      TTCTTCAAATGGAAACCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

15. DNA-H16_40 50      60
[ 98 ]      TTCCTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

16. DNA-H16_  40      50
[ 98 ]      TTCTTCAAATGGAAACCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

17. DNA-H1_1 130     120     110
[ 98 ]      <TTCCTCAAATGGAGCCCCAGATGCAG
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

18. DNA-H1_7  40      50
[ 98 ]      TTCCTCAAATGGAGCCCCAGATGCAG>
              |||
MSRVqPCR p  TTCTTCAAATGGAGCCCCAGATGCAG

```

19. DNA-H1\_1 40 50  
 [ 96 ] TTCTTCAAATGGAGCCCCAGATG-AG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

20. DNA-H1\_4 40 50  
 [ 96 ] TTCTTCAAATGGAGCCCCAGATG-AG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

21. DNA-H12\_ 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

22. DNA-H12\_ 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

23. DNA-H12\_ 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

24. DNA-H12\_ 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

25. DNA-H12\_ 40 50  
 [ 92 ] TTCTTCAAATTGAGCCTCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

26. DNA-H12\_ 40 50  
 [ 92 ] TTCTTCAAATTGAGCCTCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

27. DNA-H16\_ 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

28. DNA-H16\_40 50 60  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

29. DNA-H16\_ 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

30. DNA-H16\_ 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

31. DNA-H16\_ 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

32. DNA-H1\_1 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

33. DNA-H1\_1 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

34. DNA-H1\_3 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

35. DNA-H1\_6 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG->  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

36. DNA-H1\_9 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG



## Figure S1C: BD RNA

```

MSRVqPCR p      10      20
                TTCTTCAAATGGAGCCCCAGATGCAG
                AAGAAAGTTTACCTCGGGTCTACGTC

1. RNA70_10.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

2. RNA70_13.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

3. RNA70_15.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

4. RNA70_16.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

5. RNA71_3.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

6. RNA71_6.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

7. RNA71_9.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

8. RNA71_16.n   40      50
[ 100 ]        NTCTTCAAATGGAGCCCCAGATGCA>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCA

9. RNA71_7.n0   50      60
[ 100 ]        CTCTTCAAATGGAGCCCCAGATGCA>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCA

10. RNA66_1.    40      50
[ 98 ]         TTCTTCAAATGGATCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

11. RNA66_10    130     120     110
[ 98 ]         <TTCTTCAAATGGAACCCAGATGCAG
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

12. RNA66_12    40      50
[ 98 ]         TTCTTCAAATGGAACCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

13. RNA66_15    130     120     110
[ 98 ]         <TTCTTCAAATGGAACCCAGATGCAG
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

14. RNA66_16    40      50
[ 98 ]         TTCTTCAAATGGAACCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

15. RNA66_2.    40      50
[ 98 ]         TTCTTCAAATGGAACCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

16. RNA66_5.    130     120     110
[ 98 ]         <TTCTTCAAATGGAACCCAGATGCAG
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

17. RNA66_6.    40      50
[ 98 ]         TTCTTCAAATGGAACCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

18. RNA66_7.    130     120     110
[ 98 ]         <TTCTTCAAATGGAACCCAGATGCAG
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

```

19. RNA66\_8. 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

20. RNA70\_1.130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

21. RNA70\_12 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

22. RNA70\_14 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

23. RNA70\_4. 320 330  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

24. RNA70\_5. 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

25. RNA70\_6. 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

26. RNA70\_7. 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

27. RNA70\_9. 130 120 110  
 [ 98 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

28. RNA71\_12 40 50 60  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

29. RNA71\_5. 40 50  
 [ 98 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

30. RNA66\_13 40 50  
 [ 92 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

31. RNA66\_3. 40 50  
 [ 92 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

32. RNA66\_9. 40 50  
 [ 92 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

33. RNA71\_11 40 50  
 [ 92 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

34. RNA71\_15 40 50  
 [ 92 ] TTCTTCAAATGGAACCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

35. RNA71\_8. 130 120 110  
 [ 92 ] <TTCTTCAAATGGAACCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

36. RNA70\_11 320 330  
 [ 88 ] TTCTTCAAATGGAGCCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

37. RNA70\_2. 40 50  
 [ 88 ] TTCTTCAAATGGAGCCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

38. RNA70\_8. 320 330  
 [ 88 ] TTCTTCAAATGGAGCCCAGATGCAG>  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

39. RNA71\_4.130 120 110  
 [ 88 ] <TTCTTCAAATGGAGCCCAGATGCAG  
 |||  
 MSRVqPCR p TTCTTCAAATGGAGCCCAGATGCAG

Figure S1D: BD DNA

```

MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG
              10      20
              AAGAAGTTTACCTCGGGTCTACGTC

1. DNA66_14.  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

2. DNA66_4.n  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

3. DNA66_7.n  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

4. DNA66_9.n  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

5. DNA70_9.n  40      50
[ 104 ]      TTCTTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

6. DNA66_5.n  40      50
[ 98 ]      TTCCTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

7. DNA70_11. 130     120     110
[ 98 ]      <TTCTTCAAATGGAACCCAGATGCAG
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

8. DNA70_12.  40      50
[ 98 ]      TTCTTCAAATGGAACCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

9. DNA70_5.n  40      50
[ 98 ]      TTCCTCAAATGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

10. DNA71_12  40      50
[ 98 ]      TTCTTCAAATGGAACCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

11. DNA66_8.  40      50
[ 96 ]      TTCTTCAAATGGAGCCCAGATG-AG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

12. DNA70_2.  40      50
[ 96 ]      TTCTTCAAATGGAGCCCAGATG-AG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

13. DNA71_15  40      50
[ 96 ]      TTCTTCAAATGGAGCCCAGATG-AG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

14. DNA71_4.  40      50
[ 96 ]      TTCTTCAAATGGAGCCCAGATG-AG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

15. DNA71_6.  40      50
[ 96 ]      TTCTTCAAATGGAGCCCAGATG-AG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

16. DNA66_11  40      50
[ 92 ]      TTCTTAAATTGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

17. DNA66_13  40      50
[ 92 ]      TTCTTAAATTGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

18. DNA66_15  40      50
[ 92 ]      TTCTTAAATTGGAGCCCAGATGCAG>
              |||
MSRVqPCR p   TTCTTCAAATGGAGCCCAGATGCAG

```

19. DNA70\_1. 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

20. DNA70\_10 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

21. DNA70\_13 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

22. DNA70\_16 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

23. DNA70\_4. 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

24. DNA70\_8. 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

25. DNA71\_10 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

26. DNA71\_11 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

27. DNA71\_13 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

28. DNA71\_14 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

29. DNA71\_2. 130 120 110  
 [ 92 ] <TTCTTAAATTGGAGCCCCAGATGCAG  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

30. DNA71\_3. 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

31. DNA71\_5. 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

32. DNA71\_7. 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

33. DNA71\_8. 40 50  
 [ 92 ] TTCTTAAATTGGAGCCCCAGATGCAG>  
 ||||| || |||||  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

Figure S1E: SZ RNA

```

MSRVqPCR p      10      20
                TTCTTCAAATGGAGCCCCAGATGCAG
                AAGAAGTTTACCTCGGGGTCTACGTC

1. RNA11_10.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

2. RNA11_11.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

3. RNA11_12.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

4. RNA11_14.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

5. RNA11_15.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

6. RNA11_2.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

7. RNA11_3.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

8. RNA11_6.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

9. RNA11_8.n    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

10. RNA11_9.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

11. RNA16_10    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

12. RNA16_2.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

13. RNA16_3.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

14. RNA16_9.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

15. RNA23_12    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

16. RNA23_16    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

17. RNA23_2.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG

18. RNA23_4.    40      50
[ 104 ]        TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      40      50
                TTCTTCAAATGGAGCCCCAGATGCAG
    
```

19. RNA23\_6. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

20. RNA23\_9. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

21. RNA32\_10 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

22. RNA32\_11 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

23. RNA32\_12 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

24. RNA32\_13 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

25. RNA32\_14 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

26. RNA32\_16 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

27. RNA32\_3. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

28. RNA32\_4. 130 120 110  
 [ 104 ] <TTCTTCAAATGGAGCCCCAGATGCAG  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

29. RNA32\_5. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

30. RNA32\_7. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

31. RNA32\_8. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

32. RNA32\_9. 40 50  
 [ 104 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

33. RNA23\_10 40 50  
 [ 100 ] TTCTTCAAATGGAGCCCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

34. RNA11\_16 40 50  
 [ 98 ] TTCTTCAAATGGAGCCCCAGAGGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

35. RNA11\_4. 40 50  
 [ 98 ] TTCTTCAAATGGAGCCCCAGAGGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

36. RNA23\_3. 40 50  
 [ 98 ] TTCTTCAAATGGAGCTCCAGATGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

37. RNA23\_5. 40 50  
 [ 98 ] TTCTTCAAATGGAGCCCCAGAGGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

38. RNA16\_11 40 50  
 [ 88 ] TTCTTCAAATGGAGCCCCAGAGGCAG>  
 MSRVqPCR p TTCTTCAAATGGAGCCCCAGATGCAG

Figure S1F: SZ DNA

```

MSRVqPCR p      10      20
                TTCTTCAAATGGAGCCCCAGATGCAG
                AAGAAGTTTACCTCGGGGTCTACGTC

1. DNA16_1.n      40      50
[ 104 ]          TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

2. DNA23_11.     40      50
[ 104 ]          TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

3. DNA23_15.     40      50
[ 104 ]          TTCTTCAAATGGAGCCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

4. DNA16_11.    130     120     110
[ 98 ]          <TTCTTCAAATGGAGCCCCAGATGCAG
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

5. DNA23_9.n     40      50
[ 98 ]          TTCTTCAAATGGAACCCCAGATGCAG>
                |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

6. DNA32_1.n     40      50
[ 98 ]          TTCTTCAAATGGAGCCCCAGAGGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

7. DNA11_2.n     40      50
[ 96 ]          TTCTTCAAATGGAGCCCCAGATG-AG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

8. DNA11_3.n     40      50
[ 96 ]          TTCTTCAAATGGAGCCCCAGATG-AG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

9. DNA11_6.n    130     120     110
[ 96 ]          <TTCTTCAAATGGAGCCCCAGATG-AG
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

10. DNA-VIP3     40      50
[ 92 ]          TTCTTAAATTGGAGCCCCAGATGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

11. DNA11_1.     40      50
[ 92 ]          TTCTTCAAATTGAGCCTCAGATGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

12. DNA11_12    40      50
[ 92 ]          TTCTTCAAATTGAGCCTCAGATGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

13. DNA11_14    130     120     110
[ 92 ]          <TTCTTAAATTGGAGCCCCAGATGCAG
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

14. DNA11_15     40      50
[ 92 ]          TTCTTAAATTGGAGCCCCAGATGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

15. DNA11_16    130     120     110
[ 92 ]          <TTCTTCAAATTGAGCCTCAGATGCAG
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

16. DNA11_7.     40      50
[ 92 ]          TTCTTAAATTGGAGCCCCAGATGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

17. DNA11_8.     40      50
[ 92 ]          TTCTTAAATTGGAGCCCCAGATGCAG>
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG

18. DNA16_8.    130     120     110
[ 92 ]          <TTCTTAAATTGGAGCCCCAGATGCAG
                ||| |||
MSRVqPCR p      TTCTTCAAATGGAGCCCCAGATGCAG
    
```





Figure S2: Phylogenetic tree representation of aligned clones with related HERV-W and distant HERV-K env gene sequences:

Figure S2A: RNA and DNA clones from BD

Method: Neighbor Joining; Bootstrap (1000 reps); tie breaking = Systematic  
Distance: Kimura 2-parameter; Gamma correction = Off  
Transition/Transversion Ratio = Estimate (Av. = 2.98); Gaps distributed proportionally

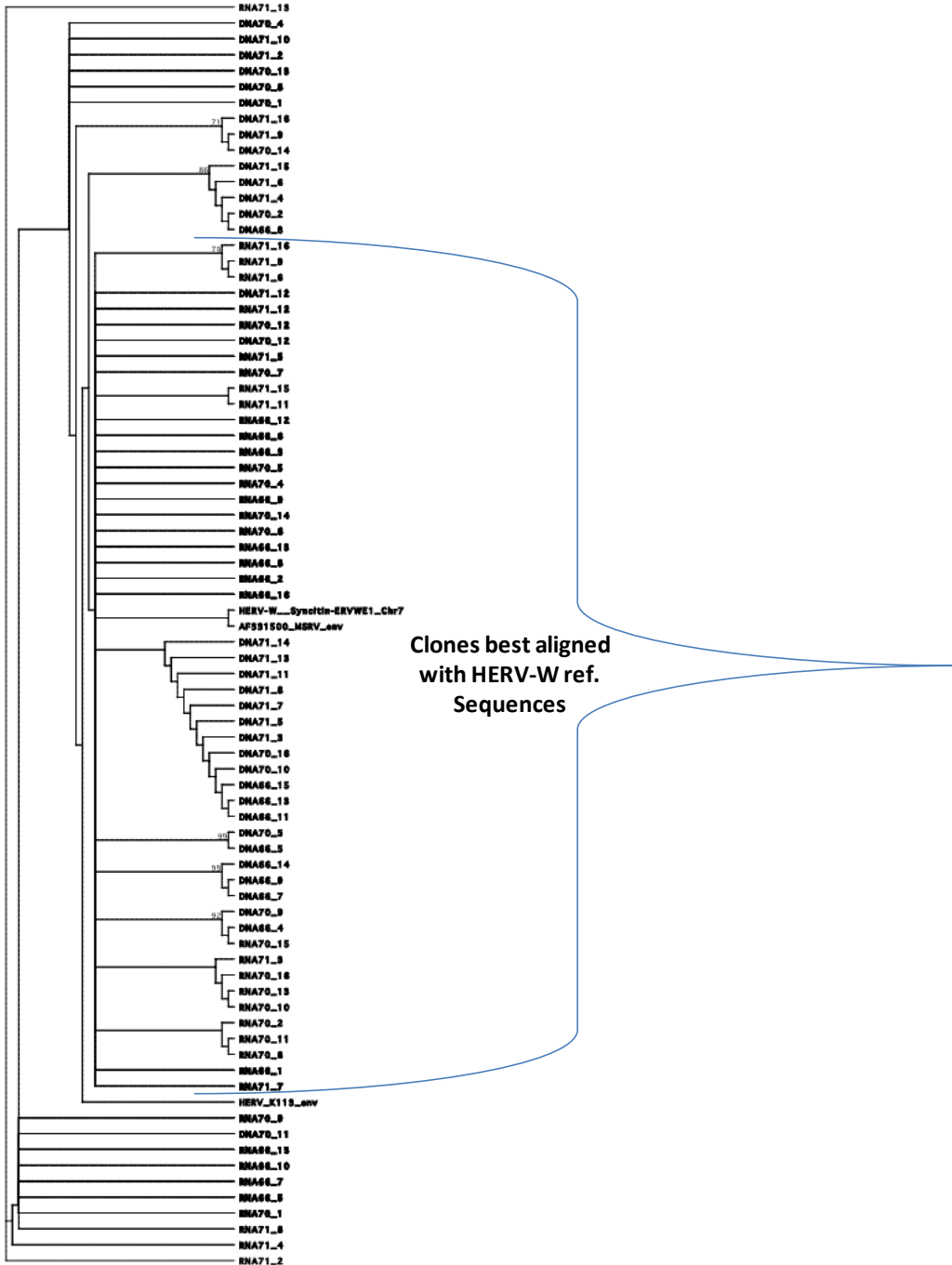


Figure S2B: RNA and DNA clones from SZ

Method: Neighbor Joining; Bootstrap (1000 reps); tie breaking = Systematic  
Distance: Kimura 2-parameter; Gamma correction = Off  
Transition:Transversion Ratio = Estimate (Av. = 2.75); Gaps distributed proportionally

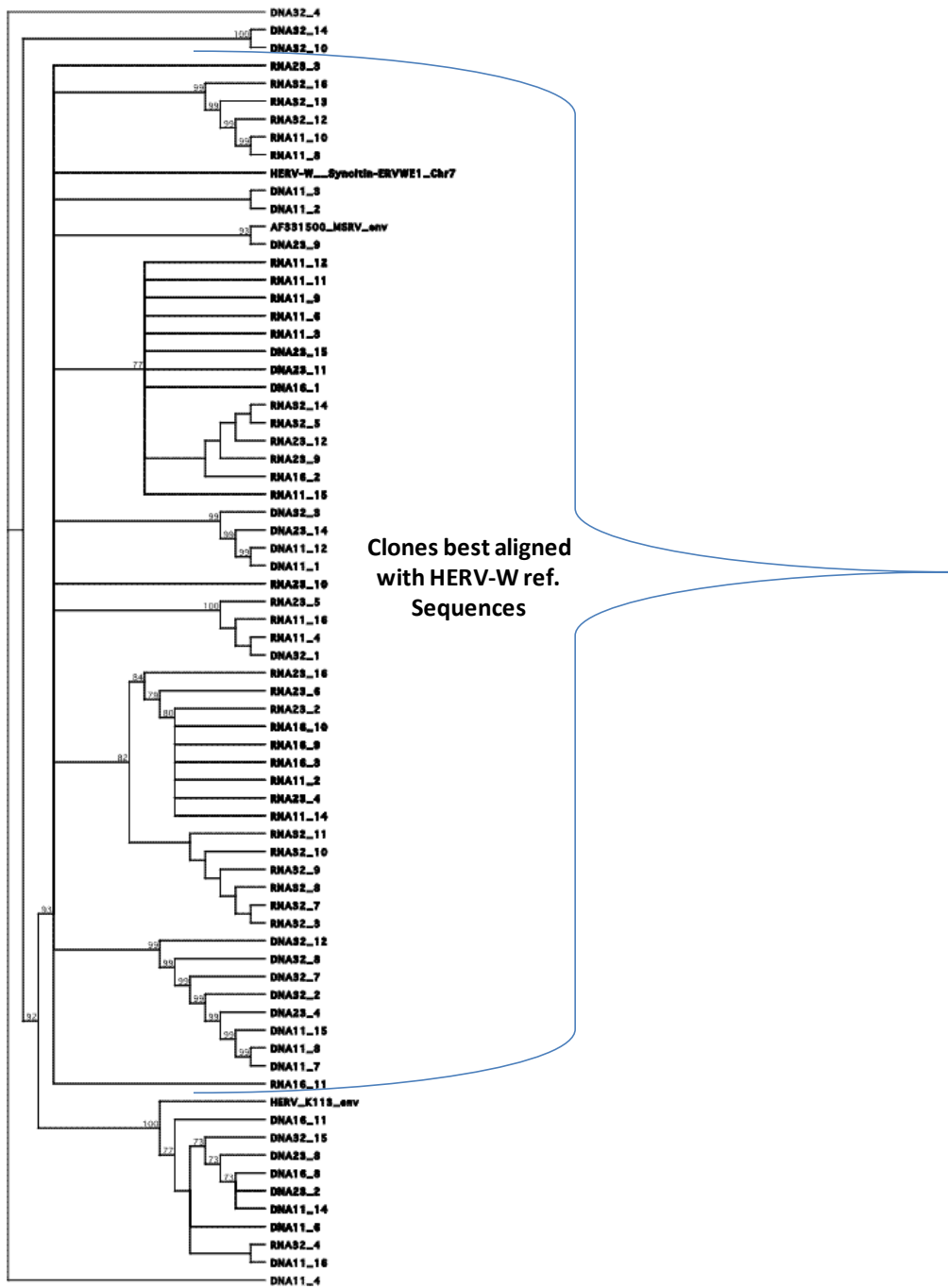


Figure S2C: RNA and DNA clones from HC

Method: Neighbor Joining; Bootstrap (1000 reps); tie breaking = Systematic  
Distance: Kimura 2-parameter; Gamma correction = Off  
Transition:Transversion Ratio = Estimate (Av. = 3.02); Gaps distributed proportionally

