Sequence #: M11841 (8173) nucleotides

Energy 1: -34.710000 (kcal/mol): Start=2337 S1=6 S2=6 L1=1 L2=12 L3=0 End=2373

```
                    GAAACAAGCTTA       A
                    CCCCGG    ACCCCG
CCATCAGGGAAACGGACTGAGGGGCC    TGGGGCGG
```

~~Energy 2: -24.750000 (kcal/mol): Start=2351 S1=6 S2=6 L1=4 L2=39 L3=1 End=2417~~

~~GCTCAGCTTTGTTCCAGCCAACAAAAACAACCCATTTCA AAAC~~

~~CGGGGT A TTCGAA~~

~~CACTGACGCCCCAGCCCCAGCCCCCG AACCTTAC~~

Energy 3: -23.680000 (kcal/mol): Start=3480 S1=5 S2=6 L1=4 L2=36 L3=0 End=3541

```
                    ATTAATGGGAGCTTTACAACCTGGATTGCCCTCTCC       TAAT
                    TGGTA    TCACCG
GGCTCTTACAAGATTTACGAGCCGT    GGTGGCTA
```

Energy 4: -23.325000 (kcal/mol): Start=1502 S1=7 S2=5 L1=1 L2=11 L3=0 End=1537

```
                    CACATTAGCCA       C
                    ATACCCC    GTCAT
TAAAAACGGCTGCCTCTCAATATGGGG    TAGTAGA
```

Energy 5: -23.280000 (kcal/mol): Start=7255 S1=6 S2=6 L1=1 L2=29 L3=1 End=7308

```
                    GAGGCATCTGCTTAGCTTTACAGGAAAAA       G
                    GGACGA  G  ACGACA
CAAAACAGAAGAGGATTAGATCTGCT     TGCTGTTT
```

Energy 6: -23.010000 (kcal/mol): Start=6464 S1=5 S2=7 L1=6 L2=15 L3=2 End=6508

```
                    CTTTGCCCGAAGCCC       ACTTTC
                    GGTCT  CC  CACCATT
AATTGCATAAATCGCTGTTCCCAGA      GTGGTAAAG
```

~~Energy 7: -22.910000 (kcal/mol): Start=3444 S1=6 S2=10 L1=8 L2=29 L3=2 End=3512~~

~~ACGAGCCGTTAATCCCACTATCGTATTAA GGTAAATG~~

~~TTTAGA AC ATTCTCGGAG~~

~~CCATATTTGTTATAAAAAAGAAATCT TGGGAGCTTTAC~~

~~Energy 8: -22.750000 (kcal/mol): Start=7264 S1=6 S2=7 L1=4 L2=20 L3=0 End=7313~~

~~TAGCTTTACACGAAAAATGC GCAG~~

~~TCGTCT ACCGACG~~

~~AGAGGATTAGATCTGCTGACAGCAGA TGTTTCTAC~~

Energy 9: -22.370000 (kcal/mol): Start=1310 S1=5 S2=6 L1=8 L2=27 L3=0 End=1366

CAACATATCCCTAAAGGAAAATGCTGC CACACCTC

GGGGC CGGTCA

CAGAAACTGCAGGGGGCTTTTCTCG GCCAGTCG

~~Energy 10: -22.140000 (kcal/mol): Start=3520 S1=5 S2=6 L1=1 L2=13 L3=1 End=3555~~

~~TGGCTATCCCACA T~~

~~GGCCT C TCCCGT~~

~~ATTAATGGGAGCTTTACAACCTGGA AGGGTATC~~

Energy 11: -22.025000 (kcal/mol): Start=6081 S1=5 S2=8 L1=2 L2=18 L3=0 End=6126

CCCACTACAGCCAGCCCC CA

TCATC TGTGTGTG

TTCAGTAACCAACTCCCTAAAGTGG ACACATATAG

Energy 12: -21.995000 (kcal/mol): Start=6588 S1=6 S2=6 L1=2 L2=5 L3=0 End=6618

TGCTT AA

GTCGGT CGTTAG

TGTTTCCTCCCAACGCCAATTAGCCG GCGGTCAG

Energy 13: -21.485000 (kcal/mol): Start=2683 S1=5 S2=8 L1=2 L2=8 L3=0 End=2718

CCTACCTC AG

TCCTA ATTAACTC

TTACTGTTCCTCAAGGCAACAGGAT TAATTGAGAC

~~Energy 14: -21.235000 (kcal/mol): Start=2690 S1=7 S2=5 L1=10 L2=27 L3=0 End=2750~~

~~ACACACAATAAACTACAACAACCCTAT AATCCTCCTA~~

~~GAGTTAA TCTCC~~

~~TCCTCAAGGCAACAGGATAGCTCAATT AGAGGAC~~

Energy 15: -21.215000 (kcal/mol): Start=1744 S1=5 S2=6 L1=4 L2=30 L3=0 End=1799

```
                    TTGCTCAAATTCAAGCGGCTGCTACAAAAG       ATGA
                    TGTTA    GGGCCT
TCTAGCACTGATGCACAAATGCAAT    CCTGGAGA
```

Energy 16: -21.005000 (kcal/mol): Start=206 S1=5 S2=8 L1=2 L2=33 L3=0 End=266

```
                    TTGCCACCATTAAACGAGACTTGATCAGAACAC       AT
                    ACGCA    ACAGAATA
CTCCCCTCCCACTTACTGCCTGTGT    TGTCTTGTCT
```

Energy 17: -21.005000 (kcal/mol): Start=8029 S1=5 S2=8 L1=2 L2=33 L3=0 End=8089

```
                    TTGCCACCATTAAACGAGACTTGATCAGAACAC       AT
                    ACGCA    ACAGAATA
CTCCCCTCCCACTTACTGCCTGTGT    TGTCTTGTCT
```

~~Energy 18: -20.755000 (kcal/mol): Start=7256 S1=5 S2=5 L1=3 L2=8 L3=0 End=7286~~

```
~~                    CGAGGCAT        CAC~~
~~                    CACGA    CACGA~~
~~AAAACAGAAGAGGATTAGATCTGCT    CTGCTTA~~
```

Energy 19: -20.545000 (kcal/mol): Start=2762 S1=8 S2=5 L1=8 L2=47 L3=0 End=2842

```
                    CCTATTACCTGTCAGAAGCCCTCCTTAACATTATGGTTAGATGATAA       TCAGACAT
                    AACCTGGG    TTATA
CTATAGAGGACAAGGAAGTTTTGGATCC    AATGTTC
```

Energy 20: -20.520000 (kcal/mol): Start=6369 S1=8 S2=5 L1=4 L2=9 L3=0 End=6407

```
                    AGGGCCTCA       CACA
                    GGAGGTAG    TCTGT
GGTTTGCTGGAATAGCCAACCCTCTGTT    AGATAAG
```

Energy 21: -20.510000 (kcal/mol): Start=2905 S1=6 S2=7 L1=10 L2=3 L3=2 End=2943

```
                    TAA       CCTATAACAG
                    TTAACC  AA  TTCCATA
AGCTAGAGGACTGGCCTCCTAATTGG      GAGGTATAG
```

Energy 22: -20.450000 (kcal/mol): Start=5810 S1=6 S2=5 L1=1 L2=36 L3=3 End=5868

AGATTGCCTTTTCCTTTGCTCACAGAGATGAACTTC G

GTCCCT CTC TTAGT

ATACCTAACAATAACCAATCCAGGGA AATCATC

Energy 23: -20.320000 (kcal/mol): Start=3314 S1=7 S2=6 L1=1 L2=12 L3=1 End=3352

AGTGAAAAACTT C

CCAATTA C CGGTGA

AAATCAGACGAACCTGTCTGGGTTGAT GCTGCTGC

Energy 24: -20.095000 (kcal/mol): Start=7088 S1=5 S2=5 L1=5 L2=3 L3=0 End=7115

TGG ATCTA

CGTCA GGGCC

TAGGATTAGGTATAACTACTGCAGT TCTGGGG

Energy 25: -20.000000 (kcal/mol): Start=2352 S1=5 S2=5 L1=4 L2=5 L3=2 End=2380

CGGTC AAAC

GGGGT AT TCGAA

ACTGAGGGGCCAGCCCCAGGCCCCG AGCTTTG

~~Energy 26: -19.895000 (kcal/mol): Start=2368 S1=7 S2=5 L1=3 L2=23 L3=0 End=2417~~

~~GCCAACAAAAACAACCCATTTCA GTC~~

~~ACCTTGT TTCGA~~

~~CAGGCCCCGAAACAAGCTTATGGCGCC AAGCTTA~~

Energy 27: -19.830000 (kcal/mol): Start=2228 S1=5 S2=5 L1=3 L2=45 L3=0 End=2295

TGTAAAAGAGGGAAACATTGGGCCAATGAATGCAAATCCAAAACT ACT

GGACC CTGTC

ACAATTCTGAAACAAAGGCTCCTGG GATAGTC

~~Energy 28: -19.760000 (kcal/mol): Start=1503 S1=5 S2=6 L1=1 L2=12 L3=1 End=1537~~

~~ACACATTAGCCA C~~

~~TACCC C GTCATC~~

~~AAAAACGGCTGCCTCTCAATATGGC TAGTAGAA~~

~~Energy 29: -19.550000 (kcal/mol): Start=2817 S1=6 S2=7 L1=7 L2=33 L3=1 End=2882~~

~~CACAGGATTAATCGATACCGGAGCTGATGTCAC ATGGTTA~~

~~TTGTAA A ATACTAG~~

~~ACCTGTCAGAAGCCCTCCTTAACATT TATCATCAA~~

Energy 30: -19.550000 (kcal/mol): Start=4900 S1=5 S2=6 L1=8 L2=23 L3=1 End=4952

ACCTATAGCCCACGGCAACCAAA GCCCATTC

GGTCC A TCCGGT

ACCTTTTTACATCGGACATGTCAGG AGGCTGAC

Energy 31: -19.360000 (kcal/mol): Start=728 S1=6 S2=5 L1=5 L2=29 L3=2 End=783

AATTTAATTAAAGAATTGATAGATAAGAA ACTGC

GGTCAT AC TCTTC

CTTTTGGCCCTGAGAAAGTCCCAGTA AGAAGTT

Energy 32: -19.155000 (kcal/mol): Start=6589 S1=5 S2=6 L1=2 L2=14 L3=0 End=6626

~~GTGCTTGCCGTCAG AA~~

~~TCGGT CGTTAG~~

~~GTTTCCTCCCAACGGCAATTAGCCG GTGATCCC~~

~~Energy 33: -18.950000 (kcal/mol): Start=5855 S1=7 S2=6 L1=1 L2=49 L3=3 End=5930~~

~~ACCTGGAGCTTAGTGATAATATCTCAAATATTCCAAGTTCAAGCCGGTT A~~

~~CTTTACT ACT AACTTC~~

~~TCCCTTTTCCTTTGCTCACACACATCA TTCGACAT~~

Energy 34: -18.930000 (kcal/mol): Start=3 S1=7 S2=5 L1=5 L2=46 L3=1 End=77

ATGTCTTGGCCTCTGTTTGCTCTAGCTCTACGCTTAAGATTCAAGA AGCCG

GTAGGCC C GTCGT

CCTGTCCGG TGGCGAA

Energy 35: -18.930000 (kcal/mol): Start=7826 S1=7 S2=5 L1=5 L2=46 L3=1 End=7900

ATGTCTTGGCCTCTGTTTGCTCTAGCTCTACGCTTAAGATTCAAGA AGCCG

GTAGGCC C GTCGT

ATATATTTAAAAGGGTGACCTGTCCGG TGGCGAA

Energy 36: -18.740000 (kcal/mol): Start=3095 S1=5 S2=7 L1=2 L2=44 L3=1 End=3164

GTCACTGCCCAAATGTTAGCCCAAGGCTACAGCCCCGGAAAAGG AG

ATACA G TGATCCT

TTCTCAAATGAAAATTATGATGTGT ATTAGGAAA

~~Energy 37: -18.720000 (kcal/mol): Start=1739 S1=6 S2=6 L1=8 L2=27 L3=2 End=1797~~

~~CTCAAATTCAAGCGCCTGCTACAAAAG CAATATGA~~

~~GTTTGT TA GGGCCT~~

~~ACTATTCTAGCACTGATGCACAAATG CCTCGAGA~~

~~Energy 38: -18.600000 (kcal/mol): Start=1286 S1=5 S2=5 L1=6 L2=49 L3=1 End=1360~~

~~TTTCTCGCACACCTCACTGCCCCGCGCAACATATCCCTAAAGCAAAATC AGAAAC~~

~~TCGGG G GACGT~~

~~CACGAAATGAAACTGTCACTAGTCC CTGCCCC~~

Energy 39: -18.540000 (kcal/mol): Start=624 S1=5 S2=6 L1=3 L2=3 L3=2 End=651

AGG CCT

GAACG CC TTTGGT

TTTTGATTTTGTAAAGGATACTTGT GAACCATA

~~Energy 40: -18.480000 (kcal/mol): Start=3088 S1=6 S2=7 L1=8 L2=42 L3=2 End=3163~~

~~CACTGCCCAAATGTTAGCCCAAGGCTACAGCCCCGGAAAAGG ATGTGTAG~~

~~TGATAC AG TGATCCT~~

~~ATCTCCTTTCTCAAATGAAAATTATC ATTACGAAA~~

Energy 41: -18.440000 (kcal/mol): Start=4613 S1=5 S2=6 L1=7 L2=28 L3=0 End=4669

CATATACTCTTGCTGATACTACCATCAA CTTCCAC

GCCGG TAAGGT

GCTTTATTAGTTTTTACTGATGGCT ATTTCAAA

Energy 42: -18.430000 (kcal/mol): Start=1656 S1=5 S2=5 L1=8 L2=6 L3=1 End=1689

GTAATG AAAAGAAA

GCCGA A CAACT

TTTTGAAAATTGTAGAGAAACGGCT GTTGGGA

Energy 43: -18.410000 (kcal/mol): Start=2150 S1=6 S2=6 L1=5 L2=50 L3=3 End=2228

TTTTGCAAAAAATTGTCATGAACATATACATAACAATTCTGAAACAAAGG AAATG

ACAGGA AAG GAGGGC

ATAAAGAAAAAGGAGGGTGTTGTTTT CTCCTGGA

Energy 44: -18.285000 (kcal/mol): Start=387 S1=5 S2=5 L1=8 L2=44 L3=0 End=458

CGGCCCGGATTAAAAGAGAAACGAAAGTAAACTTTCTTCGGCCG GAAGACGA

CGTTT GGCGC

GTTGGATACGAGGGAATTTCGTGAG CCGCGGG

~~Energy 45: -18.270000 (kcal/mol): Start=7268 S1=7 S2=5 L1=1 L2=19 L3=0 End=7311~~

~~ACGTTTACAGCAAAAATGC C~~

~~TTCGTCT ACGGA~~

~~CATTAGATCTGCTGACAGCAGAGCAGC TGTTTCT~~

~~Energy 46: -18.215000 (kcal/mol): Start=7074 S1=5 S2=5 L1=9 L2=5 L3=0 End=7107~~

~~CCGGC ATAACTACT~~

~~ATCTA TGACG~~

~~TATTCCCCTAGTCATAGGATTAGGT ACTGCTG~~

~~Energy 47: -18.080000 (kcal/mol): Start=7052 S1=5 S2=7 L1=1 L2=40 L3=2 End=7116~~

~~ATTAGGTATAACTACTGCAGTATCTACCGGGACTGCTGGT T~~

~~GGATA CT GATCCCC~~

~~GACCCAAAACAGCAATCCACTTTAT CTGCCCGTT~~

~~Energy 48: -18.030000 (kcal/mol): Start=6358 S1=5 S2=5 L1=5 L2=15 L3=0 End=6397~~

~~ACATGTCTCATCCAC CCCAA~~

~~CTTGT CTCCC~~

~~AACGCCCAACTCGTTTGCTGGAATA CAGCGCC~~

Energy 49: -18.020000 (kcal/mol): Start=1813 S1=8 S2=5 L1=3 L2=37 L3=2 End=1878

CAGGAGTCAAACAAGGACCCGATGAGCCATTTGCAGA ACC

ATTCCCTT CG AGGAC

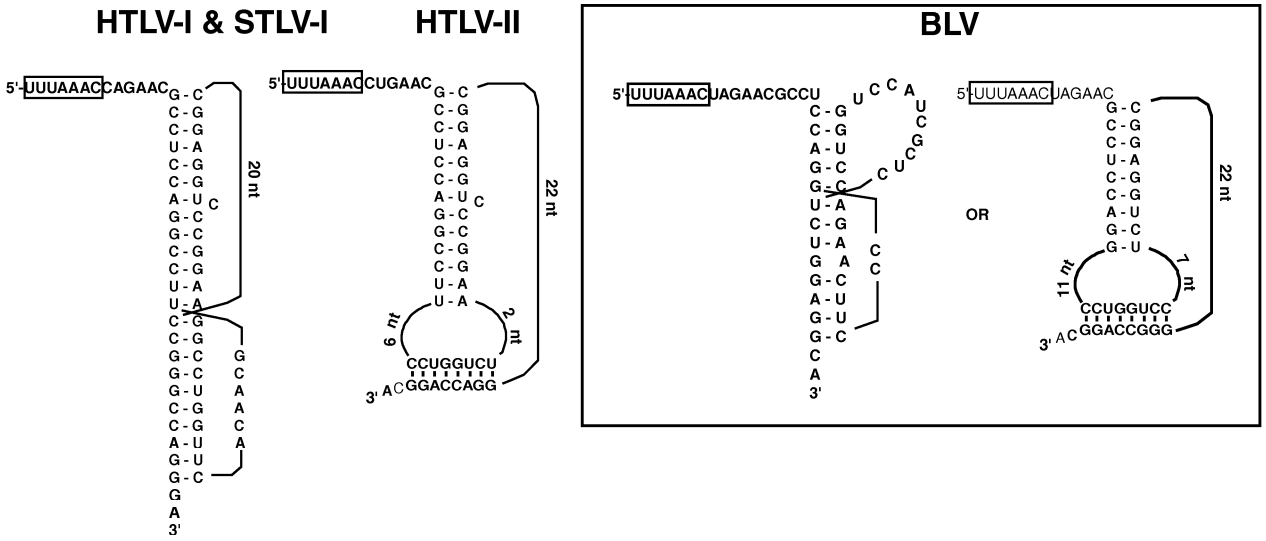
GCCTGGAGAAAACTTCCCGTTAAGGGAG TTTTGTA

Energy 50: -18.000000 (kcal/mol): Start=4357 S1=5 S2=5 L1=4 L2=49 L3=2 End=4429

```
                    AAAAATACTTTGGAATTGAACCCTCCGTAATCATACAGCCATACTCTAA       GGAA
                    ATGAT  AC  CAGAG
CGCTATAGCAGATTTAATCATACTA      GTCTCAA
```

Time taken to run: 4716 seconds 350 milliseconds

A. The HTLV group



B. The SRV group