```
                                ...(((((((((((((.((.(((((.....))))).)).))))))))).....(((((...
chr-1B.trna61-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCUCAGUUC 57
chr-1B.trna64-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCUCAGUUC 57
chr-3D.trna6-Val-CAC      ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCUCAGUUC 57
chr-1A.trna41-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-1D.trna92-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-2D.trna15-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5A.trna2-Val-CAC      ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7D.trna30-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7D.trna29-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7B.trna50-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7B.trna41-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5A.trna9-Val-CAC      ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7A.trna68-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7A.trna48-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5A.trna10-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-6C.trna10-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-6B.trna19-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5D.trna34-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5D.trna14-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5D.trna13-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5D.trna12-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5A.trna47-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5B.trna7-Val-CAC      ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5C.trna38-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5C.trna24-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5C.trna23-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5B.trna35-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7A.trna69-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-2A.trna79-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-7A.trna47-Val-CAC     ---GUCUGGCUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 57
chr-5C.trna44-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACGCACUGAAAUUCCCCAGUUC 57
chr-2C.trna102-Val-CAC    ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGU-CCCAGUUC 56
chr-3D.trna14-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAAUUC 57
chr-6B.trna80-Val-CAC     ---GUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACAAUAAAGGUCCCAGUUC 57
chr-5C.trna53-Val-CAC     GAUGUCUGGGUGGUGUAGUUGGUUAUCACGUUAGUCUCACACACUAAAGGUCCCAGUUC 60
                          .........10........20........30........40........50.........
```

```
                          ....)))))))))))).
chr-1B.trna61-Val-CAC     GAACCUGGGCUCAGACA 74
chr-1B.trna64-Val-CAC     GAACCUGGGCUCAGACA 74
chr-3D.trna6-Val-CAC      GAACCUGGGCUCAGACA 74
chr-1A.trna41-Val-CAC     GAACCUGGGCUCAGACA 74
chr-1D.trna92-Val-CAC     GAACCUGGGCUCAGACA 74
chr-2D.trna15-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5A.trna2-Val-CAC      GAACCUGGGCUCAGACA 74
chr-7D.trna30-Val-CAC     GAACCUGGGCUCAGACA 74
chr-7D.trna29-Val-CAC     GAACCUGGGCUCAGACA 74
chr-7B.trna50-Val-CAC     GAACCUGGGCUCAGACA 74
chr-7B.trna41-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5A.trna9-Val-CAC      GAACCUGGGCUCAGACA 74
chr-7A.trna68-Val-CAC     GAACCUGGGCUCAGACA 74
chr-7A.trna48-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5A.trna10-Val-CAC     GAACCUGGGCUCAGACA 74
chr-6C.trna10-Val-CAC     GAACCUGGGCUCAGACA 74
chr-6B.trna19-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5D.trna34-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5D.trna14-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5D.trna13-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5D.trna12-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5A.trna47-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5B.trna7-Val-CAC      GAACCUGGGCUCAGACA 74
chr-5C.trna38-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5C.trna24-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5C.trna23-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5B.trna35-Val-CAC     GAACCUGGGCUCAGACA 74
chr-7A.trna69-Val-CAC     GAACUUGGGCUCAGACA 74
chr-2A.trna79-Val-CAC     UAACCUGGGCUCAGACA 74
chr-7A.trna47-Val-CAC     GAACCUGGGCUCAGACA 74
chr-5C.trna44-Val-CAC     GAACCUGGGCUUAGACA 74
chr-2C.trna102-Val-CAC    GAACCUGGGCUCAGACA 73
chr-3D.trna14-Val-CAC     GAACCUGGGCUCAGACA 74
chr-6B.trna80-Val-CAC     AAACCUGGGCUCAGACA 74
chr-5C.trna53-Val-CAC     GAACCUGGGCUUUUUUU 77
                          .........70......
```