```
                                 (((((...(((((((........)))))).(((((((...)))))))...((((......))
chr-14.trna163-Arg-CCT    GCGUU--UGUAGCUCAGUGGAUAGAGCGCUCUGUUUCCUAAGCAGA-AAGUUGUAGGUUUG 57
chr-4.trna66-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGCUCUGUUUCCUAAGCAGA-AAGUUGUAGGUUCG 57
chr-11.trna96-Arg-CCT     GUGUU--UGUAGCUCAGUGGAUAGAGCGCUCUGUUUCCUAAGCAGA-AAGUUGUUGGUUCG 57
chr-2.trna92-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGCUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-3.trna123-Arg-CCT     GCGCC--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAAA-AAGUCAUAGGUUCG 57
chr-2.trna38-Arg-CCT      GCGUU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUUG 57
chr-14.trna92-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-1.trna105-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCAUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-8.trna74-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCAUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna15-Arg-CCT      GCGUU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-10.trna39-Arg-CCT     GCGCU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna39-Arg-CCT      GCGUU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-13.trna3-Arg-CCT      GCGCU--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAAA-AAGUCGUAGGUUCG 57
chr-14.trna179-Arg-CCT    GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna53-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-14.trna127-Arg-CCT    GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna54-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna56-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-15.trna182-Arg-CCT    GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-13.trna2-Arg-CCT      GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna93-Arg-CCT      GUGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna95-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-11.trna41-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-3.trna96-Arg-CCT      GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-4.trna191-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-10.trna166-Arg-CCT    GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-8.trna73-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-8.trna111-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-10.trna37-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-10.trna40-Arg-CCT     GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-15.trna81-Arg-CCT     GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-10.trna41-Arg-CCT     GCGCU--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-5.trna185-Arg-CCT     GCGCU--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna78-Arg-CCT      GCGUU--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna55-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-1.trna88-Arg-CCT      GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AGGUCGUAGGUUCG 57
chr-8.trna72-Arg-CCT      GCGUC--UGUAGUUCAGUGGAUAGAACGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna51-Arg-CCT      GCGUC--UGUAGUUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna6-Arg-CCT       GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-5.trna114-Arg-CCT     GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-13.trna130-Arg-CCT    GCGUU--UGUAGCUCAGUGAAUAGAGUGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-10.trna35-Arg-CCT     GCGUU--UGAAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-11.trna95-Arg-CCT     GCGUU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAAUCGUAGGUUCG 57
chr-5.trna287-Arg-CCT     GCGCU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCA 57
chr-10.trna165-Arg-CCT    GCGCC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-3.trna219-Arg-CCT     GCGCU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUUG 57
chr-10.trna169-Arg-CCT    GCGUU--UGUAGCUCAGUGGAUAGAGCGUUUGUUUCCUAAGCAGA-AAGUCAUAGGUUCG 57
chr-10.trna191-Arg-CCT    GCGCC--UGUAGCUCAGUGGAUAGAGUGUCUGUUUCCUAAGCAGA-AAGUCAUAGGUUCG 57
chr-14.trna164-Arg-CCT    UCGUU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna221-Arg-CCT     GCGUU--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUUGGUUCG 57
chr-4.trna244-Arg-CCT     GCGCU--UGUAGCUCAGGGGAUAGAGCGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-8.trna101-Arg-CCT     GCGCU--UGUAGCUUAGUGGAUAGAGCGUUUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna79-Arg-CCT      GCGUU--UGUAGCUCAGUGGAUAGAGCGUCUAUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna91-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUCUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-8.trna90-Arg-CCT      GCGUU--UGUAGCUCAGUGGAUAGAGUGUCUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-5.trna101-Arg-CCT     GCGUC--UGUAGCUUAGUGGAUAGAGUGUUGUUUCCUAAGCAGA-AAGUCGUAGGUUCG 57
chr-2.trna52-Arg-CCT      GCGUC--UGUAGCUCAGUGGAUAGAGCGUCUGUUUCCUAAGGAGA-AAGUCGUAGGUUCG 57
chr-10.trna116-Arg-CCT    GUGCGUCUGUAGCUCAGUGGAUAGAGUGUCUGUUUCCUAAGCAGA-AAGUUGUAGGUUCG 59
chr-2.trna80-Arg-CCT      GUGUU--UGCAGCUCAGUGGAUAGAACAUCUGUUUCCUAUGCAGAAAAGUCGUAGGUUCG 58
chr-4.trna37-Arg-CCT      GCGCC--UAUAGCUUAGUGGAUAAAGUGUCUGUUUCCUAAGCAAA-AAGUCAUAGGUUCA 57
                                 .........10........20........30........40........50.........
```

```
                                 ))...)))..)))))).
chr-14.trna163-Arg-CCT    ACCCCUACCUGACGCG 73
chr-4.trna66-Arg-CCT      ACCCCUACCUGACGUG 73
chr-11.trna96-Arg-CCT     ACCCCUACCUGACGCG 73
chr-2.trna92-Arg-CCT      ACCCCUACCCGACGCG 73
chr-3.trna123-Arg-CCT     ACCCCUAUCUGGCGCG 73
chr-2.trna38-Arg-CCT      ACCCCUACCUGACGCG 73
chr-14.trna92-Arg-CCT     ACCCCUACCUGACGCG 73
chr-1.trna105-Arg-CCT     ACCCCUACCUGACGCG 73
chr-8.trna74-Arg-CCT      ACCCCUACCUGAUGCG 73
chr-2.trna15-Arg-CCT      ACCCCUACCUGACGCG 73
chr-10.trna39-Arg-CCT     ACCCCUACCUGGCGCG 73
chr-2.trna39-Arg-CCT      ACCCCUACCUGACGCG 73
chr-13.trna3-Arg-CCT      ACCCCUACCUAGCGCG 73
chr-14.trna179-Arg-CCT    ACCCCUACCUGACGCG 73
chr-2.trna53-Arg-CCT      ACCCCUACCUGACGCG 73
chr-14.trna127-Arg-CCT    ACCCCUACCUGACGCG 73
chr-2.trna54-Arg-CCT      ACCCCUACCUGACGCG 73
chr-2.trna56-Arg-CCT      ACCCCUACCUGACGCG 73
chr-15.trna182-Arg-CCT    ACCCCUACCUGACGCG 73
chr-13.trna2-Arg-CCT      ACCCCUACCUGGCGCG 73
chr-2.trna93-Arg-CCT      ACCCCUACCUGACGCG 73
chr-2.trna95-Arg-CCT      ACCCCUACCUGACGCG 73
chr-11.trna41-Arg-CCT     ACCCCUACCUGACGCG 73
chr-3.trna96-Arg-CCT      ACCCCUACCUGGCGCG 73
chr-4.trna191-Arg-CCT     ACCCCUACCUGACGCG 73
chr-10.trna166-Arg-CCT    ACCCCUACCUGGCGCG 73
chr-8.trna73-Arg-CCT      ACCCCUACCUGACGCG 73
chr-8.trna111-Arg-CCT     ACCCCUACCUGACGCG 73
chr-10.trna37-Arg-CCT     ACCCCUACCUGAUGCG 73
chr-10.trna40-Arg-CCT     ACCCCUACCUGGCGCG 73
chr-15.trna81-Arg-CCT     ACCCCUACCUGGCGCG 73
chr-10.trna41-Arg-CCT     ACCCCUACCUAGCGCG 73
chr-5.trna185-Arg-CCT     ACCCCUACCUGGCGCG 73
chr-2.trna78-Arg-CCT      ACCCCUACCUGACGCG 73
chr-2.trna55-Arg-CCT      ACCCCUACCUGACGCG 73
chr-1.trna88-Arg-CCT      ACCCCUACCUGGCGCG 73
chr-8.trna72-Arg-CCT      ACCCCUACCUGACGCG 73
chr-2.trna51-Arg-CCT      ACCCCUACCUGACGCG 73
chr-2.trna6-Arg-CCT       AUCCCUACCUGGCGCG 73
chr-5.trna114-Arg-CCT     ACCCCAACCUGACGCG 73
chr-13.trna130-Arg-CCT    ACCCCUACCUGACGCG 73
chr-10.trna35-Arg-CCT     ACCCCUACCUGACGCG 73
chr-11.trna95-Arg-CCT     ACCCCUACCUGACGCG 73
chr-5.trna287-Arg-CCT     ACCCCUACCUGGCGCG 73
chr-10.trna165-Arg-CCT    ACGCCUACCUGGCGCG 73
chr-3.trna219-Arg-CCT     ACCCCUACCUGGCGCA 73
chr-10.trna169-Arg-CCT    ACCCCUACCUGACGCG 73
chr-10.trna191-Arg-CCT    ACCCCUACCUGGCGCG 73
chr-14.trna164-Arg-CCT    ACCCCUACCUGACGCG 73
chr-2.trna221-Arg-CCT     ACCCCUACCUGACACG 73
chr-4.trna244-Arg-CCT     ACCCCUACCUGGCGCA 73
chr-8.trna101-Arg-CCT     ACCCCUACCUGGCGCA 73
chr-2.trna79-Arg-CCT      ACCCCUACCUGACGCG 73
chr-2.trna91-Arg-CCT      ACCCCUACCUGACGCG 73
chr-8.trna90-Arg-CCT      ACCCCUACCUGACGUG 73
chr-5.trna101-Arg-CCT     ACCCCUACUUGACGCG 73
chr-2.trna52-Arg-CCT      ACCCCUACCUGACGCG 73
chr-10.trna116-Arg-CCT    ACCCCUACCUUGCACG 75
chr-2.trna80-Arg-CCT      ACCCCUACCUGACGCG 74
chr-4.trna37-Arg-CCT      ACACCUAUGUGGCGCG 73
                          .........70.....
```