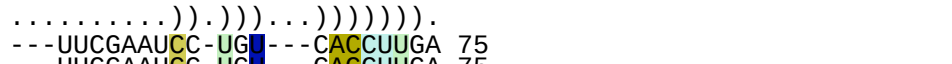
```
                                 (((((((.....(((.............)))(((((.......))))))....(((((..
chr-9.trna125-Pro-TGG    CGAGGUG---UAGCGCAGUCUGGUCAGCGCAUCUGUUUUGGGUAGAGAGGGCCAUAGG-- 55
chr-3.trna189-Pro-TGG    CGAGGUG---UAGCGCAGUCUGGUCAGCGCAUCUGUUUUGGGUACAGAGGGCCAUAGG-- 55
chr-4.trna232-Pro-TGG    CGAGGUG---UAGCGCAGUCUGGUCAGCGCAUCAGUUUUGGGUACAGAGGGCCAUAGG-- 55
chr-2.trna206-Pro-TGG    CGAGGUU---UACCGUAGUCUGGUCAGCACAUCUGUUUUGGGUACAGAGGGCCAUAGU-- 55
chr-2.trna46-Pro-TGG     AGGGAUG---UAGCGCAGCUUGGU-AGCGCGUUUGUUUUGGGUACAAAAUGUAACGGG-- 54
chr-2.trna107-Pro-TGG    AGGGAUG---UAGCGCAGCUUGGU-AGCGCGUUUGUUUUGGGUACAAAAUGUAACGGG-- 54
chr-1.trna263-Pro-TGG    AGGGAUG---UAGCGCAGCUUGGU-AGCGCGUUUGUUUUGGGUACAAAAUGUCACGGG-- 54
chr-3.trna181-Pro-TGG    UGGGAUG---UAGCGCAGCUUGGU-AGCGCGUUUGUUUUGGGUACAAAAUGUCACGGG-- 54
chr-7.trna94-Pro-TGG     AGGGAUG---UAGCGUAGCUUGGU-AGCGCGUUUGUUUUGGGUACAAAAUGUCACAGG-- 54
chr-1.trna224-Pro-TGG    AGGGAUG---UAGCGUAGCUUGGU-AGCGUGUUUGUUUUGGGUACAAAAUGUCACAGG-- 54
chr-2.trna230-Pro-CGG    GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-4.trna72-Pro-CGG     GGGUGUU---UGGUCUAG--UGGC-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-2.trna276-Pro-CGG    GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-10.trna3-Pro-CGG     GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-3.trna118-Pro-CGG    GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-4.trna80-Pro-CGG     GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-4.trna186-Pro-CGG    GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-4.trna204-Pro-CGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna208-Pro-CGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna81-Pro-CGG     GGGUGUU---UGGUCUAG--UGGU-AUGAUUCUUGCUUCGGGUGCGAGAGGUCGCGAG-- 52
chr-9.trna145-Pro-TGG    GGGCGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCGCGAG-- 52
chr-6.trna31-Pro-TGG     GGGCGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCGCGAG-- 52
chr-1.trna80-Pro-TGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCGCGAG-- 52
chr-1.trna249-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-2.trna106-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna212-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna213-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna215-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna216-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna218-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-5.trna88-Pro-TGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna219-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-2.trna117-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUUGCUUUGGGUGCAAGAGGUCCCGAG-- 52
chr-2.trna118-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUUGCUUUGGGUGCAAGAGGUCCCGAG-- 52
chr-4.trna205-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna209-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna210-Pro-TGG    AGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-4.trna206-Pro-TGG    AGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCCGAG-- 52
chr-6.trna32-Pro-TGG     GGGCGUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUUCCGAG-- 52
chr-5.trna188-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-6.trna35-Pro-AGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-1.trna59-Pro-AGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-2.trna60-Pro-AGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-5.trna189-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-2.trna123-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-3.trna54-Pro-AGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-3.trna168-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-5.trna187-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-10.trna120-Pro-AGG   GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-10.trna19-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-9.trna119-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-5.trna118-Pro-AGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-8.trna13-Pro-AGG     GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUAGGGUGCGAGAGGUCCCGAG-- 52
chr-10.trna67-Pro-AGG    GGGGAUU---UAGUCUAG--UGGU-AAGAUGUACGCUUAGGGAGCGUAAGGUCCCGAG-- 52
chr-4.trna217-Pro-CGG    AGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGCUGCAAGAGGUCCCGGG-- 52
chr-4.trna214-Pro-TGG    GGGCAUU---UGGUCUAG--UGGU-AUGAUUCUCACUUGGCUGCAAGAGGUCCUGGG-- 52
chr-4.trna211-Pro-CGG    -GGCAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUCGGCUGCAAGAGGUCCGGG-- 51
chr-2.trna122-Pro-AGG    GGGGAUU---UAGUCUAG--UUGU-AAGAUGUACGCCUAGGGAGCGUAAGGUCCGAGCU 54
chr-4.trna207-Pro-TGG    ---CAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCGAGU- 50
chr-4.trna203-Pro-TGG    ---CAUU---UGGUCUAG--UGGU-AUGAUUCUCGCUUUGGGUGCGAGAGGUCCGAGU- 50
chr-1.trna187-Pro-TGG    AAUUAGGCCAUAGCGCAGUCUGGUCAGCGCAUCUGUUUUGGGUACAGAGGGCCAUAGG-- 58
                                 .........10........20........30........40........50.........
```



```
                                 .........)).)))...)))))))).
chr-9.trna125-Pro-TGG    ---UUCGAAUCC-UGU---CACCUUGA 75
chr-3.trna189-Pro-TGG    ---UUCGAAUCC-UGU---CACCUUGA 75
chr-4.trna232-Pro-TGG    ---UUCGAAUCC-UGU---CACCUUGA 75
chr-2.trna206-Pro-TGG    ---UUCGAAUCC-UGU---CACCUUGA 75
chr-2.trna46-Pro-TGG     ---UUCAAAUCC-AGU---CAUCCCUA 74
chr-2.trna107-Pro-TGG    ---UUCAAAUCC-AGU---CAUCCCUA 74
chr-1.trna263-Pro-TGG    ---UUCAAAUCC-UGU---CAUCCCUA 74
chr-3.trna181-Pro-TGG    ---UUCAAAUCC-UGU---CAUCCCUA 74
chr-7.trna94-Pro-TGG     ---UUCAAAUCA-UGU---CAUCCCUA 74
chr-1.trna224-Pro-TGG    ---UUCAAAUCC-UAU---CAUCCCUA 74
chr-2.trna230-Pro-CGG    ---UUCGAUUCU-CGC---AACACCCC 72
chr-4.trna72-Pro-CGG     ---UUCGAUUCU-CGC---AACACCCC 72
chr-2.trna276-Pro-CGG    ---UUCGAUUCU-CGC---AACACCCC 72
chr-10.trna3-Pro-CGG     ---UUCGAUUCU-CGC---AACACCCC 72
chr-3.trna118-Pro-CGG    ---UUCGAUUCU-CGC---AACACCCC 72
chr-4.trna80-Pro-CGG     ---UUCGAUUCU-CGC---AACACCCC 72
chr-4.trna186-Pro-CGG    ---UUCGAUUCU-CGC---AACACCCC 72
chr-4.trna204-Pro-CGG    ---UUCGAUUCU-CGA---AAUGCCCC 72
chr-4.trna208-Pro-CGG    ---UUCGAUUCU-CGA---AAUGCCCC 72
chr-4.trna81-Pro-CGG     ---UUCGAUUCU-UGC---AACACCCC 72
chr-9.trna145-Pro-TGG    ---UUCGAUUCU-CGC---AACGCCCC 72
chr-6.trna31-Pro-TGG     ---UUCGAUUCU-CGC---AACGCCCC 72
chr-1.trna80-Pro-TGG     ---UUCGAUUCU-CGC---AAUGCCCC 72
chr-1.trna249-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-2.trna106-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna212-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna213-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna215-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna216-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna218-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-5.trna88-Pro-TGG     ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna219-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-2.trna117-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-2.trna118-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna205-Pro-TGG    ---UUUGAUUCU-CGG---AAUGCCCC 72
chr-4.trna209-Pro-TGG    ---UUUGAUUCU-CGG---AAUGCCCC 72
chr-4.trna210-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna206-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-6.trna32-Pro-TGG     ---UUCGAUUCU-CGC---AACGCCCC 72
chr-5.trna188-Pro-AGG    ---UUCAAUUCU-UGG---AAUGCCCC 72
chr-6.trna35-Pro-AGG     ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-1.trna59-Pro-AGG     ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-2.trna60-Pro-AGG     ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-5.trna189-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-2.trna123-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-3.trna54-Pro-AGG     ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-3.trna168-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-5.trna187-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-10.trna120-Pro-AGG   ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-10.trna19-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-9.trna119-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-5.trna118-Pro-AGG    ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-8.trna13-Pro-AGG     ---UUCAAUUCU-CGG---AAUGCCCC 72
chr-10.trna67-Pro-AGG    ---UUCAAUUCU-CGG---AAUCCCCA 72
chr-4.trna217-Pro-CGG    ---UUCGAUUCU-UGG---AAUGCCCC 72
chr-4.trna214-Pro-TGG    ---UUCGAUUCU-CGG---AAUGCCCC 72
chr-4.trna211-Pro-CGG    ---UUCGAUUCU-CGG---AAUGUCCC 71
chr-2.trna122-Pro-AGG    CAAUCCAAUUCU-CGG---AAUCCCCA 77
chr-4.trna207-Pro-TGG    ---UCAAACGCGACAG---CAUAAAGA 71
chr-4.trna203-Pro-TGG    ---UCAAACGCGACAG---CAUAAAGA 71
chr-1.trna187-Pro-TGG    ---UUCGAAUUC-UGUCACCUUGAUGU 81
                                 .........70........80......
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