```
                          ((((.........((((.........))))(((((.........)))))..........
chr-17.trna5-Leu-TAG      GACAG----UUUGGCCGAG-UGGUCUAAGGCGCCAGAUUUAGGCUCUGGUCC-------G 48
chr-16.trna14-Leu-TAG     GACAG----UUUGGCCGAG-UGGUCUAAAGGCGCCAGAUUUAGGCUCUGGUCC-------G 48
chr-8.trna25-Leu-TAG      GACAG----UUUGGCCGAG-UGGUCUAAGGCGCCAGAUUUAGGCUCUGGUCC-------G 48
chr-15.trna24-Leu-TAG     GACAG----UUUGGCCGAG-UGGUCUAAGGCGCCAGAUUUAGGCUCUGGUCC-------G 48
chr-10.trna1-Leu-TAG      GACAG----UUUGGCCGAG-UGGUCUAAGGCGCCAGAUUUAGGCUCUGGUCC-------G 48
chr-17.trna6-Leu-TAG      GAUAG----UUUGGUCGAG-UGGUCUAAGGUGCCAGAUUUAGGCUCUGGUCC-------G 48
chr-2.trna11-Leu-AAG      GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUUUGGUCC-------G 49
chr-1.trna13-Leu-AAG      GUGGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-6.trna20-Leu-AAG      GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-18.trna21-Leu-AAG     GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-7.trna22-Leu-AAG      GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-11.trna4-Leu-AAG      GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-17.trna1-Leu-AAG      GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-15.trna20-Leu-AAG     GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUUAAGGUUCUGGUCC-------G 49
chr-14.trna22-Leu-AAG     GUGGA----GAUGGCCGAGUUGGUCUAAGGCGCCCAGAUUAAGGUUCUUGUCC-------G 49
chr-17.trna14-Leu-CAG     GUCAA----GAUGGCCGAGUUGGUCUAAGGCGCCAGUUUCAGGUACUGGUCC-------G 49
chr-17.trna4-Leu-CAG      GUCAA----GAUGGCCGAGUUGGUCUAAGGCGCCAGUUUCAGGUACUGGUCC-------G 49
chr-10.trna19-Leu-CAG     GUCAA----GAUGGCCGAGUUGGUCUAAGGCGCCAGUUUCAGGUACUGGUCC-------G 49
chr-12.trna19-Leu-CAG     GUCAA----GAUGGCCGAGUUGGUCUAAGGCGCCAGUUUCAGGUACUGGUCC-------G 49
chr-12.trna21-Leu-CAG     GUCAA----GAUGGCCGAGUUGGUCUAAGGCGCCAGUUUCAGGUACUGGUCC-------G 49
chr-19.trna7-Leu-CAG      GUCAA----GAUAGCCGAGUU-GUCUAAGGCACCAGUUUCAGGUACUGGUCC-------A 48
chr-15.trna19-Leu-AAG     GUUGA----GAUGGCCGAGUUGGUCUAAGGCGCCAGAUCAAGGUUCUGGUCC-------G 49
chr-12.trna20-Leu-CAG     GUCUGCCAAGAUGGCCGAGUUGGUCUAAGGCUACAGUUUCAGGUACUGGACC-------G 53
chr-2.trna2-Leu-CAA       GUCAG----GAUGGCCGAG-UGGUCUAAGGCGCCAGACUCAAGUUCUGGUCCUCGA---G 52
chr-6.trna47-Leu-CAA      GUCAG----GAUGGCCGAG-UGGUCUAAGGCGCCAGACUCAAGUUCUGGUCCUCGA---G 52
chr-16.trna18-Leu-CAA     GUCAG----GAUGGCCGAG-UGGUCUAAGGCGCCAGACUCAAGUUCUGGUCCUCGA---G 52
chr-3.trna1-Leu-CAA       GUCAG----GAUGGCCGAG-UGGUCUAAGGCGCCAGACUCAAGUUCUGGUCUUCGA---G 52
chr-15.trna30-Leu-CAA     GUCAG----GAUGGCCGAG-UGGUCUAAGGCGCCAGACUCAAGUUCUGGUCUUCGA---G 52
chr-4.trna3-Leu-CAA       GUCAG----GAUGGCCGAG-UGGUCUAAGGCGCCAGACUCAAGUUCUGGUCCUCGU---G 52
chr-3.trna10-Leu-TAA      GCUGG----UUUGCCCGAG-AGGU-UAAGGGGGAAGACUUAAGAUCUUCUGCACAU---A 51
chr-6.trna28-Leu-TAA      GCUGG----UUUGCCCGAG-AGGU-UAAGGGGGAAGACUUAAGAUCUUCUGCACAU---A 51
chr-8.trna29-Leu-TAA      GCUGG----UUUGCCCGAG-AGGU-UAAGGGGGAAGACUUAAGAUCUUCUGCACAU---A 51
chr-15.trna8-Leu-TAG      AAUAG----UUUAGCUAAG-UGGUCUAAGGCACCAAAUUUAGGCUCUGGUAU-------G 48
chr-12.trna10-Leu-TAG     GCCGC----UAUGGUGAAAUUGGU-GGACACGCUGCUCUUAGGAAGCAGGGC-------U 48
chr-13.trna17-Leu-TAA     GCUAA----UUUGCCCAAG-AGGUUUAAGG-GGAAGACUUAAGAUCUUUUGCACACAAGA 54
chr-15.trna11-Leu-TAG     ----------UUGGUCGAG-UGGUCUAAGGUGCCAGAUUUAGGCACUGGUUC-------G 42
chr-1.trna23-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-19.trna1-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUAAAAU------UUAAGCU-------U 42
chr-13.trna19-Leu-TAA     AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-3.trna12-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-13.trna28-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-3.trna39-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-14.trna38-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-4.trna7-Leu-TAA       AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-6.trna21-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-15.trna33-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-6.trna27-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-15.trna2-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-18.trna10-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-10.trna6-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-16.trna8-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-10.trna2-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-8.trna4-Leu-TAA       AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-8.trna34-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-10.trna15-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-18.trna25-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-6.trna26-Leu-TAA      AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-10.trna12-Leu-TAA     AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-8.trna13-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-14.trna6-Leu-TAA      AGAAA----UGUAGCUCAGUUGAUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-15.trna37-Leu-TAA     AGAAA----UGUAGCUCGGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-11.trna13-Leu-TAA     AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-8.trna27-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCUUUGAAAU------UUAAGCU-------U 42
chr-13.trna24-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-9.trna9-Leu-TAA       AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUAAAAU------UUAAGCU-------U 42
chr-13.trna10-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-13.trna12-Leu-TAA     AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-18.trna23-Leu-TAA     AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-6.trna37-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-6.trna45-Leu-TAA      AGAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-15.trna1-Leu-TAA      AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-16.trna27-Leu-TAA     AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
chr-7.trna16-Leu-TAA      AGGAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAACU-------U 42
chr-12.trna6-Leu-TAA      AGGAA----UGUAGCUUAAUUGGUU-AUAGCCUUAAAAU------UUAAGCU-------U 42
chr-6.trna48-Leu-TAA      AAAAA----UGUAGCUCAGUUGGUU-AGAACCUUGAAAU------UUAAGCU-------U 42
chr-6.trna3-Leu-TAA       AAAAA----UGUAGCUCAGUUGGUU-AGAGCCUUGAAAU------UUAAGCU-------U 42
                          .........10.........20.........30.........40.........50.........
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                          ...((((.((((.......))))))))).....))))....
chr-17.trna5-Leu-TAG      AAAGGGCGUGGGUUCAAAUCCCACAGC-----UGUCA--- 80
chr-16.trna14-Leu-TAG     AAAGGGCGUGGGUUCAAAUCCCACAGC-----UGUCA--- 80
chr-8.trna25-Leu-TAG      AAAGGGCGUGGGUUCAAAUCCCACAGC-----UGUCA--- 80
chr-15.trna24-Leu-TAG     AAAGGGCGUGGGUUCAAAUCCCACAGC-----UGUCA--- 80
chr-10.trna1-Leu-TAG      AAAGGGCGUGGGUUCAAAUCCCACAGC-----UGUCA--- 80
chr-17.trna6-Leu-TAG      AAAUGGCGUGGGUUCAAAUUCCACAAC-----UAUCA--- 80
chr-2.trna11-Leu-AAG      AAAGGGCGUGGGUUUCAAAUCCCACUCU-----CAACA--- 81
chr-1.trna13-Leu-AAG      AAAGGGCGUGGGUUCAAAUCCCACUCU-----CCACA--- 81
chr-6.trna20-Leu-AAG      AAAGGGCGUGGGUUCAAAUCCCACUCU-----CAACA--- 81
chr-18.trna21-Leu-AAG     AAAGGGCGUGGGUUCAAAUCCCACUCU-----CAACA--- 81
chr-7.trna22-Leu-AAG      AAAGGGCGUGGGUUCAAAUCCCACUCU-----CAACA--- 81
chr-11.trna4-Leu-AAG      AAAGGGCGUGGGUUUCAAAUCCCACUCU-----CAACA--- 81
chr-17.trna1-Leu-AAG      AAAGGGCGUGGGUUCAAAUCCCACUCU-----CAACA--- 81
chr-15.trna20-Leu-AAG     AAAGGGCGUGGGUUCAAAUCCCACUCU-----CAACA--- 81
chr-14.trna22-Leu-AAG     AAAGGGCGUGGGUUCAAAUCCCACUCU-----CCACA--- 81
chr-17.trna14-Leu-CAG     AAAGGGCAUGGGUUCGAAUCCCAUUCU-----UGACA--- 81
chr-17.trna4-Leu-CAG      AAAGGGCAUGGGUUCGAAUCCCAUUCU-----UGACA--- 81
chr-10.trna19-Leu-CAG     AAAGGGCAUGGGUUCGAAUCCCAUUCU-----UGACA--- 81
chr-12.trna19-Leu-CAG     AAAGGGCAUGGGUUCGAAUCCCAUUCU-----UGACA--- 81
chr-12.trna21-Leu-CAG     AAAGGGCAUGGGUUCGAAUCCCAUUCU-----UGACA--- 81
chr-19.trna7-Leu-CAG      AAAGGGCAUGGGCUCAAAUCCCAUUCU-----UGACA--- 80
chr-15.trna19-Leu-AAG     AAAGGGC--GGGUUCAAAUUCCACUCU-----CAACA--- 79
chr-12.trna20-Leu-CAG     AAAGGGCAUGGGUUUGAAUCCCAUUCU-----AGACA--- 85
chr-2.trna2-Leu-CAA       AGAGGGCGUGGGUUCAAAUCCCACUUC-----UGACA--- 84
chr-6.trna47-Leu-CAA      AGAGGGCGUGGGUUCAAAUCCCACUUC-----UGACA--- 84
chr-16.trna18-Leu-CAA     AGAGGGCGUGGGUUCAAAUCCCACUUC-----UGACA--- 84
chr-3.trna1-Leu-CAA       AGAAGGCGUGGGUUCAAAUCCCACUUC-----UGACA--- 84
chr-15.trna30-Leu-CAA     AGAAGGCGUGGGUUCAAAUCCCACUUC-----UGACA--- 84
chr-4.trna3-Leu-CAA       AGAGGGCGUGGGUUCAAAUCCCACUUC-----UGACA--- 84
chr-3.trna10-Leu-TAA      AGUGCGCGUGGGUUCGAACCCCACAGC-----CAGCA--- 83
chr-6.trna28-Leu-TAA      AGUGCGCGUGGGUUCGAACCCCACAGC-----CAGCA--- 83
chr-8.trna29-Leu-TAA      AGUGCGCGUGGGUUCGAACCCCACAGC-----CAGCA--- 83
chr-15.trna8-Leu-TAG      AAAGUGUGUGGGUUCAAAUCCCACAAU-----UGUCA--- 80
chr-12.trna10-Leu-TAG     AGAGCAUCUUGGUUUGAGUCCGAGUGG-----CGGCA--- 80
chr-13.trna17-Leu-TAA     AGUGCGCAUGGGUUCGAACCUCAUAGC-----CAACA--- 86
chr-15.trna11-Leu-TAG     AAAAGGCAUGGGUUCAAAUCCCAUUA----------A--- 69
chr-1.trna23-Leu-TAA      -GAGGGAAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-19.trna1-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-13.trna19-Leu-TAA     -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UCCCU--- 74
chr-3.trna12-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-13.trna28-Leu-TAA     -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-3.trna39-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-14.trna38-Leu-TAA     -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-4.trna7-Leu-TAA       -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-6.trna21-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-15.trna33-Leu-TAA     -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-6.trna27-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-15.trna2-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-18.trna10-Leu-TAA     -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-10.trna6-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-16.trna8-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-10.trna2-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCUU--- 74
chr-8.trna4-Leu-TAA       -GAGGGGAGGGGUUUGAA-UCCCCCCCUC---UCCCU--- 74
chr-8.trna34-Leu-TAA      -GAGGGGAGGGGUUUGAA-UCCCCCCCUC---UUCCU--- 74
chr-10.trna15-Leu-TAA     -GAGGGGAGGGGUUUGAA-UCCCCCCCUC---UUCCU--- 74
chr-18.trna25-Leu-TAA     -GAGGGGAGGGGUUCAAA-UCCCCCCCUC---UUCCU--- 74
chr-6.trna26-Leu-TAA      -GAGGGGAGGGGUUCAAA-UCCCCCCCUC---UCCCU--- 74
chr-10.trna12-Leu-TAA     -GAGGGGAGGGGUUCAAA-UCCCCCCCUC---UCCCU--- 74
chr-8.trna13-Leu-TAA      -GAGGGGAGGGGUUCGAA-UUCCCCCCUC---UUCCU--- 74
chr-14.trna6-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-15.trna37-Leu-TAA     -GAGGGGAGGGGUUCGAA-UCCCCCCCUC---UUCCU--- 74
chr-11.trna13-Leu-TAA     -GAGGGGAGGGGUUCAAA-UUCCCCCCUC---UCCCU--- 74
chr-8.trna27-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCCCCAUC---UUCCU--- 74
chr-13.trna24-Leu-TAA     -GAGGGGAGGGGUUCGAAUCCCCCCCUC---UUCCU--- 75
chr-9.trna9-Leu-TAA       -GAGGG-AGGGGUUCGAA-UCCCCCCUC---UUCCU--- 73
chr-13.trna10-Leu-TAA     GAGGGGA-GGGGUUCGAAUUCCCUCCUCU---U-CCU--- 74
chr-13.trna12-Leu-TAA     GAGGGGGAGGGGUUCGAAUCCCCCCUCU---U-CCU--- 75
chr-18.trna23-Leu-TAA     -GAGGAGAGGGGUUCGAA-UCCCCCCUC---UCCCU--- 74
chr-6.trna37-Leu-TAA      -GAGGGGAGGGAUUCGAA--UCCCCCCUC---UUCCU--- 73
chr-6.trna45-Leu-TAA      -GAGGGGAGGUGUUCGAA--UCCCUCCUC---UUCCU--- 73
chr-15.trna1-Leu-TAA      -GAGGGGAGGGGUUCAAA--UCCUCCCUC---UCCCU--- 73
chr-16.trna27-Leu-TAA     -GAGGGGAGGGGUUCAAA-UCCCCCCCUCCUUUCCUU--- 77
chr-7.trna16-Leu-TAA      -GAGGGGAGGGGUUCAAA-UCCCCCCCUC----CCUU--- 73
chr-12.trna6-Leu-TAA      -GAGGGGAGGGGUUCGAA-UCCCUCCUUC--UCCCUU--- 75
chr-6.trna48-Leu-TAA      GAGGGGA-GGGGUUCGAAUCCCUCAUCU-----UCC--- 73
chr-6.trna3-Leu-TAA       -GAGGGGAGGGGUUCGAAUCCCCCCUCUUCCUUCCUUUA 81
                          .........70.........80.........90.........
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