CLUSTAL 2.1 multiple sequence alignment

Homo\_sapiens --------------------------------------------------

Mus\_musculus TAGTGCCTCTGCCGCGGGAGGGAGCGCAGGGGCGTGGGGCGCAGGGCGCG 50

Pan\_troglodytes --------------------------------------------------

Cavia\_porcellus --------------------------------------------------

Rattus\_norvegicus --------------------------------------------------

Oreochromis\_niloticus --------------------------------------------------

Danio\_rerio --------------------------------------------------

Homo\_sapiens --------------------------------------------------

Mus\_musculus GGCGCTGGGCGCGGGTGCGAGCGCAGTGAAGGAACGAGCCCGGGTGCCTT 100

Pan\_troglodytes --------------------------------------------------

Cavia\_porcellus --------------------------------------------------

Rattus\_norvegicus --------------------------------------------------

Oreochromis\_niloticus --------------------------------------------------

Danio\_rerio --------------------------------------------------

Homo\_sapiens --------------------------------------------------

Mus\_musculus GTAGGGCCCAGCGCCGCTGAGAGCCCAGCGCCGCCCACCCGCCAGGAAAG 150

Pan\_troglodytes --------------------------------------------------

Cavia\_porcellus --------------------------------------------------

Rattus\_norvegicus --------------------------------------------------

Oreochromis\_niloticus --------------------------------------------------

Danio\_rerio --------------------------------------------------

Homo\_sapiens --------------------------------------------------

Mus\_musculus AGGGCATCAGAGGGTGGACGCCTGCGGGACCGCCGGTGGTGTGCGTCAAC 200

Pan\_troglodytes --------------------------------------------------

Cavia\_porcellus --------------------------------------------------

Rattus\_norvegicus --------------------------------------------------

Oreochromis\_niloticus --------------------------------------------------

Danio\_rerio --------------------------------------------------

Homo\_sapiens --------------------------------------------------

Mus\_musculus GTCCGATCCCCGCCGGCCACCCCAAGAGGCCGCCGCCCGGGCTGCGGGCA 250

Pan\_troglodytes ------------CCGACTCCTCCTTTAGG-----GCTCTGATTCCGAGGC 33

Cavia\_porcellus ------------------------ATGGGCC---GCTCTGATTCCCTG-- 21

Rattus\_norvegicus ----------------------------------GCTATGCTCG------ 10

Oreochromis\_niloticus -------ATGTATCGTTTCTTTGTGAAACTAACATTTCTGATTCCAGCAA 43

Danio\_rerio ----------GGTCCGAACTGCCAGATGAACATTAATGAGTGTGCGTCGA 40

Homo\_sapiens --------------ATGCCGCCGCTCC--TGGCGCCCCTGCTC-TGCCTG 33

Mus\_musculus GCTGGCGAGCAGGCATGCCACGGCTCC--TGACGCCCTTGCTC-TGCCTA 297

Pan\_troglodytes GG------------AGGCCGGCGCTTTGTTGGCGGGCGGGGTAGCGGGCG 71

Cavia\_porcellus ----------------GCCGGCGCTTTGTCGGCAGGAGGGGCCGCGGGCT 55

Rattus\_norvegicus ------------------CGTTGCTTACTTAGAGCA---GGGCGGAGACG 39

Oreochromis\_niloticus TC--------------GCCATCGCACAA--GGTAAACGATTTAAAAAAGA 77

Danio\_rerio AC---------------CCGTGTCTGAACCAGGGCTCCTG--CATTGACG 73

\* \*

Homo\_sapiens GCGCTGCTGCCCGCGCTCGCC-------GCACGAGGTAGGCGCCCACCCA 76

Mus\_musculus ACGCTGCTGCCCGCGCTCGCC-------GCAAGAGGTAGGCT-------- 332

Pan\_troglodytes A-GCAGCTGTC-GCATTTTCCCACG--GGCGGGAGCTGAGTGTGGCCACC 117

Cavia\_porcellus CCGCAGCTGTC-GCATTTTCCCACGAGGGGGGGAGCT--GTGTGGCTACC 102

Rattus\_norvegicus ATG----TGCCCTGACTTCTA-------GTATGGGGTTTCAGGATCACTG 78

Oreochromis\_niloticus ATGTATTTATTTTTGAGCGTGCATTGCCACAGAGCATGGCCGAGACTTCT 127

Danio\_rerio ACGTGGCTGGATTCAAGTGCA-------ACTGCATGCTGCCGTACACAGG 116

\* \*

Homo\_sapiens CCCGCGAGCCCCCACTT--TCCG-CGCCCTTTGGAAACTTTGGCGGCGCC 123

Mus\_musculus CCCGCGAGCCCGCAACT--TCGGGCGCCTTTCAGAAACTTCTGTTGCGCC 380

Pan\_troglodytes CCCCCTCCCTCCCGTCCAGCTCTGCCCCCTTGCAGAACGG-GTTTG-AAC 165

Cavia\_porcellus CCCTCCCGCCTCCGCCT--CCCGGGCCCCTTCCAAGACTGTGTTTG-GAC 149

Rattus\_norvegicus TCCCCTAGCCGGAATCA--------AACTTTAGAAGAGGGGCGATGTGCA 120

Oreochromis\_niloticus CTGTGATATTCGGAACAATTAAAGTGGGCTTTAGAGAA---GTTTGTGA- 173

Danio\_rerio TACAAACTCCACCATTGTTTTC----TTCTGCCAAAACAG-CACAGAGTC 161

\* \* \*

Homo\_sapiens CGGCGCGCGCGCCCCACGGCTGGGAGCGGGCGGCG-GGGAGGCCAGCATG 172

Mus\_musculus CTGCGCACGCTTTGGGTAGATAGGAGTAAGGGACC-AGCTG-CCAGAGTT 428

Pan\_troglodytes AGAGGCA--ATCTCGGCGGCTGGATGGGGGGCCCT-GCCCTGCCAGACTC 212

Cavia\_porcellus AGCAGGAGGATCCCGGTGGCTGGTTAGGGGTCCCA-GCCCTACC-GGCTC 197

Rattus\_norvegicus AGCGGCA-GCCTAGGGTGG--GGGTGGGACTGACTCACTTTGGAAGTTTG 167

Oreochromis\_niloticus ---------ATTATAAAGAGGAAGCGAAAGACACTCGATTAAACTGATTT 214

Danio\_rerio GTGAAATAACACTGTAGAGTCGAGGGTGGCTGCTCCAGTAGATTTATTTC 211

\*

Homo\_sapiens GAGAGGGAAAAGCGGGCGGC-CCGGGGCGTGGGGTTCTG---GAGTCCCG 218

Mus\_musculus GAGAGCCAGA-GCGGGTGGA-CGGGACCGTGGGAC-CTG---GTGTCCTG 472

Pan\_troglodytes CTCAGTGAGC--CTCCAGG-------GTGGGGGG---CA---ACGCTTCG 247

Cavia\_porcellus CCCAATGAAC-ACTCCCAGA-CTGGTGTGGGGGGT-GCA---AAGTTTGG 241

Rattus\_norvegicus GAAATCCTGCGCCGATTGGAACGGGGGTGGGGGGGGGCGCTTATTTCCCT 217

Oreochromis\_niloticus G--AGTGATTTAAACGTGGT-----GCTGTATAATTATG-----ATCGGA 252

Danio\_rerio CTGTTTGGCCACTTCCTGTT-----TCCGGACGAGCCTA---AGAATTGA 253

\*

Homo\_sapiens GGAT-CAGGGAGGACCGA--CCTTCCCCCTCGATCCCCCCGTGGAGGCGG 265

Mus\_musculus GCGTGTGAGGAGGACC-----CTTCTCTTTCCA------------GGGGT 505

Pan\_troglodytes G------AGAGTAGCCCA--CTTTGTCTC--------------------- 268

Cavia\_porcellus C------AGACTGGCCTG--AGTTGTCTC--------------------- 262

Rattus\_norvegicus GCCGGCTCCAGGAACTGGGGACTCCTGTCGTAGT----------AACCAA 257

Oreochromis\_niloticus GTATTAAAAAGTGGCATAA-ATAAGTCTCGATG------------AAAGT 289

Danio\_rerio CAATAGGAGGAAACGCAGAGGGACTTCCTGCTGT-----------GAGGA 292

Homo\_sapiens ACTCGCGCCGCCCGTGCCTGGAGCCGAGTTAGGAGGCCGGT-GTGGGGTG 314

Mus\_musculus ACCCACTTTTCTCATAGC----GCCCA---AAGACGCTGGAAGTGTGGTA 548

Pan\_troglodytes ---TGCTTTTCCCCCACTG--CGTCCAGGCGGCACATCAG----GCCATC 309

Cavia\_porcellus ---CGGTTTCCCTCTTCC---TGCCCAGGCGTGGC-CTGG----GCGGTC 301

Rattus\_norvegicus CTGCACTCTTCTCCCAGTA---GTTGGAGAGAACTGCC----------TA 294

Oreochromis\_niloticus TTTCGAGCTTCTCTTGGCCGTGGGAAAGTGAAGAAGCCAG----AAGCTG 335

Danio\_rerio AACCGATAAGGAAGTGCTT---GCTTGAAAAATCAGGCAAT---AGAAGA 336

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Homo\_sapiens CTGGGGCCCCGGAGGCCCTACTCCGGGCCCGCCCTTCACCCGCCGCGC-- 362

Mus\_musculus -TGGGGCCCCGGAGGCCCAAC-CCTGGCTCGCACTTGGGTAGACGCTC-- 594

Pan\_troglodytes CCACCCTGCTTCAAGCAGGAC---GTGTTC-CCTGCTGCT---CCCCT-- 350

Cavia\_porcellus CCTCCCAGTTGGGAGGGTGAC---TTGTTCACCTGCCACTTAACCCAC-- 346

Rattus\_norvegicus CCCTTTCCTTAAAAGTGGGGTTTTATGTGATGCTCCAGTTTGGCCCCCAC 344

Oreochromis\_niloticus CAGTGCGCTTGG----CTGAC--TCCGCCGGTGTGC-GCTAAATGAAGAT 378

Danio\_rerio GAGAAGGCTTAAATAGCAGAC-----ACAGATTTACTGCTGGACTCAATC 381

Homo\_sapiens -GTGGGGCTTGCCGCCGGTCGGCCGGGC---GGGCGGGCTGC-CTACTAT 407

Mus\_musculus -CTGGGGCTCGCCGCGGG---GGCGGAC---ATGCTGCTTGCGCCTCTAC 637

Pan\_troglodytes -TCC---CCCCATTTCTGACTACAGAACTCTGGGCAGAATGT-TGACGCC 395

Cavia\_porcellus -CTG---CTCCCCTCCTGCCCTGTGGGCCCTGG-CAAAACGTGCAAAGCC 391

Rattus\_norvegicus TTCGGGGCTTAATTTCTTAAGATGGGGTGG-GAGGGGCTTGATTAATAGC 393

Oreochromis\_niloticus GTTGGGAGCTA--TTCTGTCCGCTCATTGCAGAGCAG-TCACACTAAATC 425

Danio\_rerio AACTGAGTTTTTTACACTGATATTGAGG---GGTAAAGCTGCAGGA---- 424

Homo\_sapiens TTTTCGATTTGAATAGAGTCGGTTTTGGTTTCCTGTT-------GCTTCT 450

Mus\_musculus TTTTCGATTTGAATCGAATCGGTTTTGGTTTCCTGTT-------GCTTCT 680

Pan\_troglodytes CCTTTGGTTTCA-TGGAGG-------GGCTTCCTGC--------GCACCC 429

Cavia\_porcellus CCTTGGGCTT-----GAGT-------GGTTTCCTGC--------A---CT 418

Rattus\_norvegicus CCCTTCCCGAGAATAGGGT------GGAATTCCTTCTAAGTGAGGTTTCT 437

Oreochromis\_niloticus AGCTGAGCTC--ATGCGGT-------AGATGC-----------AGCAATG 455

Danio\_rerio ---TAGACTTCAATAGGGTC------TGCTGTTTAGTTATAGCAGCATTT 465

\* \*

Homo\_sapiens CCGGGCCATTTATCTTCTTTCTTC-----TTCGCCTCTGGCCCACGCCGG 495

Mus\_musculus TGGGACCATTTATTTTCATTCTTC-----TTTGCCTCCGGCCCGTGCTAG 725

Pan\_troglodytes GTGCCCCAGCAACCCATGATACTGAGCAGAGTGCGTCCGG---GGTAGGG 476

Cavia\_porcellus GTCCCCCAGTCACCCC-------------AGTGTTCCGAG---GGTCGGG 452

Rattus\_norvegicus AAGACCCCCT--CCCTGGGTGCGGCGGGGGCTGCCCCTGG---AGATGCC 482

Oreochromis\_niloticus ATGGAACCACGATCCAA------------AGCTAACTAAGTGAACGCAAC 493

Danio\_rerio AATGTTC-TTTATGTACTATTTGTGGTAATATGCTATTAGCTTTAATTGT 514

\* \*

Homo\_sapiens GGCGGATGTTG----------GGGCGCGGAGTGTGGGCTCTGCGGCGCCG 535

Mus\_musculus GGCGGATGTTG----------GGGTGC--AGTGTGAGGTCAGGGGCGCTA 763

Pan\_troglodytes GGCGGACGATGCCCCTTGGCTGGGTGCAGGTCCCGCCCCCAGGGTAACAA 526

Cavia\_porcellus GGC-----------------TGGGGGCAGATCCCAAGCCCGGGTTAAGGA 485

Rattus\_norvegicus TGCGAAC--------------AGGTATTGGGTGTCGGAGGAGGCGGGGCA 518

Oreochromis\_niloticus ATTTAATTTTTT------------TCCTTACTCTAAATTTATATCAAGAA 531

Danio\_rerio TATTTATTT-------------ATTATTTATTATATATTTAG--TTGTTA 549

Homo\_sapiens CGTTCGCCTTCACTGACCC---GCG--CGGCCGGGCTGG-GT-CCCCGGG 578

Mus\_musculus TACTC-TCGTTGCTTACTTAGAGCG--GGGCAGAGACGATGTGCCCTGGA 810

Pan\_troglodytes GGACCTTCGGTGGTGGTG----GTG-CGGGTGAGACTGACCTCTCTT--- 568

Cavia\_porcellus GG------GGAGGGGGCT----GCGACGGTCCAGGCTGACCTCTCT---- 521

Rattus\_norvegicus GGTCTCCGGGTGCGGCCC-----CGCTGCCCCAGGAGGCGGC-------- 555

Oreochromis\_niloticus TTTTATCAACAAATCTTTTTTGAGGCTTTATAAAAACGATAT-------- 573

Danio\_rerio TATTTATAATTATTTAAT----ATG-TTTATTATATTTATTTATTTATTT 594

\*

Homo\_sapiens CTCCCGGTC----GCCCCGCCCGCCGGTGCCCCCCAGCCCGGCTCT-CAG 623

Mus\_musculus CTCCTAGTATGGGGTTTTGGG-ATCGCTGTCCCCTAGCCGGAATCA-AAC 858

Pan\_troglodytes CTCCTGCCCCT--GCCTAGGCCCGCGATG-CTCCCAGCCCGG-TGA-GAC 613

Cavia\_porcellus --CCTGCCTT----CCCAGGCCTGCGCTG-CTCCCAGCCTGG-T----AC 559

Rattus\_norvegicus --CCTGGCGCG--ACAATGGGCCGCTCTGATTCCCGGGCCGG-----CGC 596

Oreochromis\_niloticus -TTAGAGTGTTAGACAATAAACTGC-CTATTTGTAAGCTGTTATGAACAC 621

Danio\_rerio ATTATGTTTATT-ATCTATATTTATTATGTTTATTATATTTATGTATTAT 643

\*

Homo\_sapiens TT---TGGGGGA---GGGGT--TG-----CGTAAGAAGC--------C-G 651

Mus\_musculus TT---TCGAAGA---GGGGCGATG-----TGCAGGCGGC--------TTG 889

Pan\_troglodytes CTGCCTGAATGG---CGGGAAGTG-----TG-AAGCGGC--------CAA 646

Cavia\_porcellus CTGCGAGAACGG---AGGGCGGTG-----TG-AAGTGCT--------GAA 592

Rattus\_norvegicus TTTGTTGGAGGGC--GGGGTGGCGGGCTCCGCAGCTGTCGCTTTTTCCCA 644

Oreochromis\_niloticus TTTAATGTAAAATATGAGATAATGGAAGTTGCGGAGGGA--------CGC 663

Danio\_rerio GTTTATTTATTTATGTGTCTTATA-----TTTATGTATT----------- 677

\*

Homo\_sapiens CCGCGCCCGGG---GGGACTGAACTTTCCTT-TTGCTTTGCGGAGTTGAA 697

Mus\_musculus CTGCCTAGGGT---GGGCGTGGGACTGACT-----CATTTCGGA-----A 926

Pan\_troglodytes TGGCACGGAGGCCTGCGTGTGAGTACCACC-----CCTGCGGGACCTGTT 691

Cavia\_porcellus CGGCACAGAGGCTTGCATGTGAGTAACCCC-----CCGCGGGGACCTGTT 637

Rattus\_norvegicus CGATCCGGGGAGCTGAGTGTGGCCACCCCCT-CCCTCCTGCGGCCCCCTC 693

Oreochromis\_niloticus GGATTTAGGGG---GGGGGGGGATGCAAGC-----ACCTTTTGTCTACAA 705

Danio\_rerio TATTATGTTTATTTGTTTATTAATTTATTTTGTTTATTTATTATGTTCAT 727

\*

Homo\_sapiens GTTT---------GGAAAGCTTGGG--GG--CGGA----GAGCGGGACGC 730

Mus\_musculus GTTT---------GAAAATCCTGTGCTGA--TTG-----GAACGGGAGCC 960

Pan\_troglodytes GCTTT-GTCGAGGGCAGAGCCCCTGCCTT--CTGCAGCCGCGCAGGGGAC 738

Cavia\_porcellus GCTTTTGCTGGGAGCAGAGCCCCTGCATT--CTG-----------GGGAC 674

Rattus\_norvegicus GTAT---------------CTTGTGTTTGAACTGAAGCAAGGGTGGAGGT 728

Oreochromis\_niloticus GTGT-------GGGAGAGTGTTGTGAGTGC-CGGGTAGGCGGGGGGTGGT 747

Danio\_rerio ATATA--TTTCTTATAATTTTTATGTTTAT-TTATTTATTAATTGTTAAT 774

\* \*

Homo\_sapiens GG-GTGGGGGGCTCTTAC---ATTT---------CTCCCCGCC---GCAC 764

Mus\_musculus GGAGAGGGGAGCCCTTAT---TTCC---------CTTCCGGCT---TCAC 995

Pan\_troglodytes AGAACACTAGGCCATTGT---CTTCTGGAGATGGCCCAGAGTCTGGGCAC 785

Cavia\_porcellus AGAACACTGGGCCATTGT---CTTCTGGTGGCAGCCCATGGCC-GGGTGC 720

Rattus\_norvegicus TGGTCGGGGGCTTTTTCTGGGCTCCT-----TAATCCACTCCC---ACTT 770

Oreochromis\_niloticus GGAGGAGGAGGCGCTGTT--ATTCC---------CGTCTGCCCGGTAAAC 786

Danio\_rerio TTGTTATTATGTCTGTTT--GTTTTT--------TATAATGTTTATATTG 814

\*

Homo\_sapiens AGCGAGCGGGGT-----CTCT---GGGGAAT----CG-AGTG-ATTA--A 798

Mus\_musculus AG--AACGGGGT---A-CTCC---TG----T----TGTAGTA-ACCA--A 1025

Pan\_troglodytes GGT-CACGTGCT---GACTTT---TATTGGA----CAAAGTCTGGCA--A 822

Cavia\_porcellus GGT-CACGTGCT---GACTTT---TATTGGA----CAAAGTCTGGCA--A 757

Rattus\_norvegicus CGACTGCGTGGTTAGAAGTTT---GGGAGAATTTCCTAAGTTTTTCT--G 815

Oreochromis\_niloticus AATACCCGAGGA-GAGTGTTT---TATGGCT----CGTGCTGCACCACGA 828

Danio\_rerio ATTTATTATGTTTATTTATTTATTTATTTATTATGTTTATTTATTTATCA 864

\* \* \*

Homo\_sapiens TC------CACTCTTT-CTC-CGAGAGTTGGAGGCGAG----AATTATCT 836

Mus\_musculus CTG-----CACTCTTC-TCC-CAGTAATCGAAGGAGAG----AACTGCCT 1064

Pan\_troglodytes TT-------ACTTAAT-CAC-CAGCAATT--------A----TGCTGCGT 851

Cavia\_porcellus TT-------ACTTAAT-CAC-CAGCAATT--------A----TGCCGCCT 786

Rattus\_norvegicus TTGCCGTCCACTTCGC-CTCACTGTGAATGGGGCTGTACACCTGCCACAT 864

Oreochromis\_niloticus TT---------TCTTT-TGTTCCGCATCTG------------AGCCCCGC 856

Danio\_rerio TCTTTATTTATTTATTATGTTTATTTATTG------------TGTTAATT 902

\*

Homo\_sapiens -GTC---CTCTTCCAGAAAGTGCGGCTCTGTGTCACACCC--------CC 874

Mus\_musculus -GCC---CTTTCCTTAAAAGTGGGGTTTTATGTGACGCTCGAGCTCAGCC 1110

Pan\_troglodytes -GTGGAGCTGGTCTGGCTGCTGGGGGCTTGGGCACTCCTC---------C 891

Cavia\_porcellus -GTGGAACTACTCTTGCAGCCGGAGG--TGGGCGAAC-TC---------C 823

Rattus\_norvegicus AGCCAGCCTATCCCTTCCCCACTAGTTTTTGACTGCCACG--------CT 906

Oreochromis\_niloticus AGCTGCTGCGCTCTCCCCGCAAAAGC---GTGCCCCCCCC---------C 894

Danio\_rerio TATTTATTTATTTACTATGTTGTATTTATTTATCTTGCTT---------- 942

Homo\_sapiens CTCCCCCG--------TTTCTCAGCCCCG-GTAAGATGGGGAGGGAGGGG 915

Mus\_musculus CTACATCGAGGCTTAATTTTTAGAGCTCT-TTAAGATGGCGTGGGAGGGG 1159

Pan\_troglodytes GTGGGCCA----------CCTCAGGCTC---CGGGATCACTAAGTGGGAG 928

Cavia\_porcellus GTGGGC-A----------CCTTGGGCTGGAGCGGCAGTCCTAGGAGGGAA 862

Rattus\_norvegicus GTGAGCAGAA--------CATTGATCCGT-----AAGGGCTACCCAGAAG 943

Oreochromis\_niloticus CTCCTC------------CCTTGAATTAA---AAAAAAAAAAAAAAAAAG 929

Danio\_rerio ATTTAT-----------TTATTAATTATGTTTATTATGTTTATTTATTTA 981

\* \* \*

Homo\_sapiens CTTGAGTAAT--TGATCCCTTCTCGAGA---TGGG---GTCGAATT--CC 955

Mus\_musculus CTTGATTAATAATAGCCCCTTCCCGAGAA--CGGG---GTGGAATT--CC 1202

Pan\_troglodytes TCCCAGT-ACCCCAATTCTTCTTTAAGTCCCCAAG---AAACAGTTGATC 974

Cavia\_porcellus TCCTTG--GTGCTATTTCTTCTCTAAGTTCCTGAG---AAACCATTGACC 907

Rattus\_norvegicus CTCCCCCTCCCACGCTTCACCTCCGGACTGCCAG-------TAACT---C 983

Oreochromis\_niloticus CCAC----GCACCACGCGCTTCTAGCCTCACCAGT---GTCCA------- 965

Danio\_rerio TTATGTTTATTATATTTGTTTATTTATTTATTATGTTTATTATATTTATT 1031

Homo\_sapiens TTCCGAATGGGGGAC-----------CTTCAT-------CCCCCTC---- 983

Mus\_musculus TTCTAAGTGGGGTTT-----------CTAAGA-------CCCCCTC---- 1230

Pan\_troglodytes TGCCAGGGGAAGCTCTGGACCATTTACTGAGAGGCCCAGCCCCCACC--A 1022

Cavia\_porcellus T-TGAGAGTGGGGGCAGAAGCATTTACAGAGAG------CCCCCGC---- 946

Rattus\_norvegicus TAGTACATAGGCACCATGGCTTTAGTCTCCGTC------CACCGGCAGGA 1027

Oreochromis\_niloticus ---CGAACAGGCTTC-----------CCAATAT------CCCCTGCGGAC 995

Danio\_rerio TATTATGTATATTTA-----------TTTATT-------CATTTAT---- 1059

\*

Homo\_sapiens CTGTGGGTG--------TA-TGGGGGCTGCCC-TGG----AGATGCGC-- 1017

Mus\_musculus CC-TGGGTG--------CGGCGGGGGCTGCCCCTGG----AGAT------ 1261

Pan\_troglodytes CCCTGCCAA--------CTTGGGGCGCCTCCTCTGGGC--GGGTGAT--- 1059

Cavia\_porcellus CCCAGGCAG--------CCTAGG----CTTCTCTGGGC--AGATGG---- 978

Rattus\_norvegicus CCGAGACTGACCTCTCTCTTCTGACCCTTTCCCAGGCTTGAGAT------ 1071

Oreochromis\_niloticus ACTTGTGGA-----------ACAAATCAATTTAAAAATCACGACGCGTGT 1034

Danio\_rerio -TTTATTTA-------TTTATTATATATATATATATATATATATATATAT 1101

Homo\_sapiens GCCCGCGGAGG--CAGGTA-TTGGGTGTCGGCGGAGGCGGGGCCGCGTCC 1064

Mus\_musculus GCCTGCGAA----CAGGTA-TTGGGTGTCGGAGTAGGCGGGGCAG-GTCT 1305

Pan\_troglodytes GCCTCCTGG-GCACAGGTG-ATGCCTCCTCTCGGAGGTGATGCT-----T 1102

Cavia\_porcellus GCTTTTTGCTGCTTGAGGG-AAA------ATCGGAACCAAGCCCA----C 1017

Rattus\_norvegicus GCTCCCAGC----CAAGTG-GGACCTGCCTGAATGGAGGGAGGTG----- 1111

Oreochromis\_niloticus GCATTAAAATTTGCTAATA-AAGCTGTGTTAAAAAAACAAAACAA---AA 1080

Danio\_rerio ATATATATATATATATATATATATATATATATATATATATACATA----- 1146

Homo\_sapiens CCAGGGTGCTGTCCCGGTGCCCCTGGAGGC--------GGCCCCGACTCC 1106

Mus\_musculus CC-GGGTGCGGCCCCGCTGCCCCAGGAGGC--------GGCCCTGGCGCG 1346

Pan\_troglodytes CCTAGGTG-GGTGGTGATGCCTCTTGGGCT--------GGT--------- 1134

Cavia\_porcellus CCTGGCTT-GGCCTCACTTTCTCCTGGGCTC-----TGGGTGAGGCTGGA 1061

Rattus\_norvegicus -CGAAGTG----GCCAACGGCACTGAAGCCTGTGTGTGAGTACCGCCCC- 1155

Oreochromis\_niloticus CTTAACTGCTGAATAAATTCCTCGTGATTT----------CACCTGCAAC 1120

Danio\_rerio CACACATA-TATATATATATATATATATAT---------ATATATATATA 1186

\*

Homo\_sapiens ACAATGGG--CCGCTCTGATTCTGAGGCGGAGGCCGGCGCTTTGTTGGCG 1154

Mus\_musculus ACAATGGG--CCGCTCTGATTCC----CG--GGCCGGCGCTTTGTTGGAG 1388

Pan\_troglodytes --AGTGGTGCCTCCTCTTGGT----------GGGTGATGCCT-CCTCTGG 1171

Cavia\_porcellus GAAGTTGGAACTGCTCTTGCT----------GG-TGTCACCT-GCCGTGG 1099

Rattus\_norvegicus -TGAGGGGACCTGTTGCTTTTGTCAGAGCAGAGCCCCTGCCT--TCTGGG 1202

Oreochromis\_niloticus TTAATCCCGATTAATCCCAGTGT--------GCTCATTTCCCTCCTGTGT 1162

Danio\_rerio TATATATTTCCTATTTTTATT-------------TATTTATTTATTATGT 1223

\* \*

Homo\_sapiens GGCGGG-------GTAGCGGGCGA-GCAGCTGTCGCATTTTCCCACGGGC 1196

Mus\_musculus GGCGGG-------GTGGCGGGCTCCGCAGCTGTCGCTTTTTCCCACGATC 1431

Pan\_troglodytes GCACAG-------GT----GATGCCTCCTGGGTGGTTGATGCCTTCTGGG 1210

Cavia\_porcellus TGGGAG-------GTA-TGGGTGCCCCAAGTCTGG-------CTCCAGTG 1134

Rattus\_norvegicus GACAGA-------ACACTGGGC--------TATTGTCTTCGGAAGACAGC 1237

Oreochromis\_niloticus GCACAGAGAAACTGTGCTGAGTTAAACATGTTTTGATCTATATATCTGTT 1212

Danio\_rerio TTAT----------TTATTTATTATGTTTATTTTATTTATT-TAATTATT 1262

\*

Homo\_sapiens --GGGAGCTGAGTGTGGCCACCCCC-----------CCTCCCCCCGTCCA 1233

Mus\_musculus CGGGGAGCTGAGTGTGGCCACCCCC-----------TC-CCTCCTG---- 1465

Pan\_troglodytes CTGGTAG--TGATGCCTCCTCTGGC-ACAGGTGATGCCACCTTCTGGGTG 1257

Cavia\_porcellus CTGGTCACTTAGAACCCCCACTGCCTGCCAGC-AGGCCTCCCTTT----- 1178

Rattus\_norvegicus CCAGAGGTTGAGTGCAGTCACGTGC---------TGACTTTTATTGGACA 1278

Oreochromis\_niloticus TATGCATTCAACAGGTCTTAAATGC-----------TCTCTACCCA---- 1247

Danio\_rerio ATGATTATTATATTTTATTATTTAT---------TTATTTATTTTG---- 1299

Homo\_sapiens GCT--CTGCCCCCTTGCAGAACGGG---TTTGAACAGAGGCAATCTCGGC 1278

Mus\_musculus -----CGGTCCCCTCGTATCTTGTG---TTTGAACTGAGGCAAGGGTGGA 1507

Pan\_troglodytes GGTGATGCCTCCTCTGGGTGCGTGA---TGCCTCCTGGGCTGGCGGCGAT 1304

Cavia\_porcellus --------CTCCCCTGGGTCC-------TCCGCTCTGAAATAGGCACGAT 1213

Rattus\_norvegicus AAG--------TCTGGCAATT---A---CTTAATC---ACCAGCAATTAT 1311

Oreochromis\_niloticus ------------CTGAGGCAT---G---CCTTAATGGAGGAAGATGTGAA 1279

Danio\_rerio ---------TTTATTATGTTTATTAATTTTTTACTTATGTTAATTATATT 1340

Homo\_sapiens GGCTGGATGGGGGG--------------CCCTGCCCTGCCAGA-----CT 1309

Mus\_musculus GGCTTGTCGGGGGG--------------CTTT-----GCTGGG-----CA 1533

Pan\_troglodytes GCCTCCTCTGGGCACA-GGTGATGCCACCTCC--TGGGCGGGTGATGCCT 1351

Cavia\_porcellus GACTGGCTGAGGGATGTGGGGGTGTCGTCTCCACTGTGCCAGGGAGTCCT 1263

Rattus\_norvegicus GCCTCGTGTGGAGCTA------------CTCT--------GG------CC 1335

Oreochromis\_niloticus GCCACCCCAAACGGAA-------------------ATGGTGAA------T 1304

Danio\_rerio TATTTATTATGTTCA--------------TTTA------TATA------T 1364

Homo\_sapiens CCTC------AGTGAG-CCTCCA----GGGTGGGGGGC---AACGCTTTG 1345

Mus\_musculus CCTT------AATCCC-CTCCCACTTTGGCTGTGTGGTTA-GAAGTTTGG 1575

Pan\_troglodytes CCTCTGGGTGCGTGATGCCTCCTC--TGGGCACGGGTGAT-GCCACCTCC 1398

Cavia\_porcellus GCT---GGGATCTGAG--CTCTGC--TGGCTGTGGCTCA--GCCACCCCG 1304

Rattus\_norvegicus CCTGGAGGTTGGCACG--CTCCCT------CGTGGGCCCT-CAGGCTCCT 1376

Oreochromis\_niloticus GCAAGTAAGTAACAAGGAGTCTGAA--AGCAACACATGAA-GATGCTGCT 1351

Danio\_rerio TCATATATTTTGTTTA---TTTATTATGTTTATTTATTAGTAATGCTTTT 1411

\*

Homo\_sapiens GAGAGTAGCCCA-CTTTGTCTCTGCTTTTCC-CCCA-----CTGCGTCCA 1388

Mus\_musculus GAGAAT---TTG-CTAAGTCTTTCTGTTGCCGTCCA-----CTTCGCCT- 1615

Pan\_troglodytes TGGG-----TGGGTGATGCCT----CCTTTGGGTGGTGATACCTCCTCTG 1439

Cavia\_porcellus GGAAGTTTCTGAGCTGCGTCTGTGCCCTTCAACTTGAG----CTCGCCCT 1350

Rattus\_norvegicus GGGAAT---CCA-CGGCACCCTAA--TTCCTGTTTAAA-----ATACTTG 1415

Oreochromis\_niloticus GCGGGCAGTGAGGAAACACCATAGCTGTCTTTTTTGTG----TGTTACTT 1397

Danio\_rerio TTAATT-------TATTATGTTTATTTATTTATTCATTG---TTTATTTA 1451

Homo\_sapiens GGCGGCAC-ATC---AGGCCACCCCACCCTGCTTCAAGCAGGACGTGTTC 1434

Mus\_musculus --CACTATGAGT---GGGGCGGTACACCTGCCACCTAGCCAG-------- 1652

Pan\_troglodytes GGTGATGCCTCCTCTGGGTGGTGATACCTC--CTCTAGGCGGG------- 1480

Cavia\_porcellus GATGAGAATACC-----GAGGAGGTGCCTGGGCCCGGGCCGGG------- 1388

Rattus\_norvegicus AGAAACAGTTGTTTTTGGTGATGAGACTGA-----AAGTCTGAG------ 1454

Oreochromis\_niloticus GGAGCTTCTAT-----GGTTGTAGTAGTGGACTGTGGGGCAA-------- 1434

Danio\_rerio TTTGTTTCTGTT------------TATTTATTTGTATGTT---------- 1479

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Homo\_sapiens CCTGCTGCTCCCCTTCCCCCCA-------TTTCTGACT-ACAGAACTCTG 1476

Mus\_musculus CCTA----TCCTTTCCCCACTAG------TTTTTGACT-ACAATACTGTG 1691

Pan\_troglodytes -TGATGCCTCCTCT-------AGG-----C-ACAGGT--GATACCTCCTG 1514

Cavia\_porcellus -CCTCCCCTCCCCTCCCCTGGAGG-----CTACAGACA-GGAACCGCTCG 1431

Rattus\_norvegicus -CCCCCGCCCCTTGTCACCTGAGATCCCATTCTGAGCA-AGAGTGCCCTA 1502

Oreochromis\_niloticus ---------TCGTGGTACTTGAAAGTTCTTTACGGGTGGGGAAGAAAAAG 1475

Danio\_rerio --------TTTTTTTTGT-----------TTGTTTGTT------TGTTTG 1504

Homo\_sapiens GGCA-GAATGTTGACGCCCCT-------------TTGGTTTCATGGAG-G 1511

Mus\_musculus AGCA-GAACATTGA-------------------------TTCGTA-AG-C 1713

Pan\_troglodytes GGC--AGGTGATGCCACCTCCGGGTGGGTGATGCCT-CTTCAAAGGAA-A 1560

Cavia\_porcellus AGCCCGGGCGGCGGCGCGCCC-------TCATTCCAACTGCCGAGGGC-C 1473

Rattus\_norvegicus GGTA-GGAAATTGA---------------------GTATTGCGTGTGTTC 1530

Oreochromis\_niloticus AGGCCACATATTCCCCCTTTT--------AATTCCAGCCTTTGAGCTGTG 1517

Danio\_rerio AATGAATGTATGGAC-------------------TAGTTTTAGTTAATGA 1535

Homo\_sapiens GGCTTCCTGCGGACCCG--------TGCCCCA-GCAACCCATGAT-ACTG 1551

Mus\_musculus CGCCCCCCCCA---CCG--------CGTCCC--GCACCCCCTCAGGACTG 1750

Pan\_troglodytes TTGACTCTTCAAAATCGGA----CCCGCCTTT-GGGCTCTCTGTTTGCCC 1605

Cavia\_porcellus CGTCCCCTTGACAACCCCATGCTCCTGCCCTC-GCAG-CCCGGCCTGGGC 1521

Rattus\_norvegicus TGGTTTTGTTGGTACTGG-------TGTTTTGGGTTTTTTTTGTTTGTTT 1573

Oreochromis\_niloticus TCTGTGCTCAGCAACCAGA------GGCCCTT-AAGTTTCCTCTGGGCTG 1560

Danio\_rerio TGGTAACCCTGACCTTAT-------TCTCTCTCTCTCTCTTTTTCTGTGT 1578

Homo\_sapiens AGCAGAGTGCGT--CCGGGGTAGG-GGGCGGA--CGATGCCCCTTGGCTG 1596

Mus\_musculus CC---AATAACT--CTAGTGCATA-GGC---A--CCATGGCTTTAATCTC 1789

Pan\_troglodytes CAGCTCCCTCTT--CCCGGCCTCA-GGCTGGGGCTGGGGAAGAGAAGGTG 1652

Cavia\_porcellus AGGCGGCCTCCT--CCCT-CCCCA-AACTGAAGCCAATTAAGCAGGTCTG 1567

Rattus\_norvegicus GTTTGTTTGTTTGGTTTTTTTGTA-GACAATATCTCACAATGTATCTCTG 1622

Oreochromis\_niloticus CTGTGCTCCTGTA-CCCCTCCGAG-AGCTGCATTGCTCTCTGCACACAT- 1607

Danio\_rerio GTGTGTGTGTTTAGGTGAGGTGTGTGAGAATGTTTTAGCCCCTTGTTCTC 1628

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Homo\_sapiens GGTGCAGGTCCCCGCCCCCAGGGTAACCAGGGCC---TTCGGTGGTGGTG 1643

Mus\_musculus CGT--------CCACCATCAGGACTATAAGGAG----TTAGGTGCC--CA 1825

Pan\_troglodytes GAACTCATGTTTTGGCACGGGG-------------TGTGGGGTAATTATT 1689

Cavia\_porcellus GGAGCAGTTTATTGG-ACAAAGCCGATTGTGTCTTTGTGGGATG-CTAAT 1615

Rattus\_norvegicus G----------CTGTCCTCAAACTT----------CACTATGTAGACTTT 1652

Oreochromis\_niloticus --------TCCCTGAAAAGAAAAGACT----------TTAAAGGAGTGCA 1639

Danio\_rerio CACG----TCCCTGTAAAAACGG--------------CGGTGTGTGTCGT 1660

Homo\_sapiens GTGCGGG--TGAG--------ACTGACCTCTCTTCTCCTGCCCCTGCCT- 1682

Mus\_musculus GAAC-----CAAG--------CCTGACCTCTCTCTTCTGACCTTCCCCC- 1861

Pan\_troglodytes GAGT-----CTGG------TTTCTGTCCTGGCATCTGCAAACTCTGACCT 1728

Cavia\_porcellus GAATGCACACTAGCTTTTTTTTTTTTTTTCTTTTTTGGGGGCCCTTTCTC 1665

Rattus\_norvegicus GAACT----CAAG----------AGATCTGCCT------GCCTCTGCCCA 1682

Oreochromis\_niloticus GAAATGAAAAGAG----------AGAGCAGCCTC---AGAGTGCTG---- 1672

Danio\_rerio GAATC----TGAG-----------GATTTCC------AGAGCTTCTCCT- 1688

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Homo\_sapiens ----------AGGCCCGCG----ATGCTCCCAGCCCGGTGAGACCTGC-C 1717

Mus\_musculus ----------AGGCTTGAG----ATGCTCCCAGCCAAGTGGGACCTGC-C 1896

Pan\_troglodytes C-------AAAATCCCGTG------GCCCT---TCTGGTCTG-CCAGC-C 1760

Cavia\_porcellus CCTCTGCAGAAGCCTCACGCTTGATGCCCTAAATCTTGTTTC-CCTCCAT 1714

Rattus\_norvegicus GT-----GGAAATTTCCTA-------TTTTAAGACAAGATCCACCTCTCC 1720

Oreochromis\_niloticus -------GGGAGATGAGAA-------AGGGGAGGCCGGACACACACACAC 1708

Danio\_rerio --------GTAACTGTCCG------GCTGGATGGCAAGGTAAATGTGTGT 1724

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Homo\_sapiens TGAATGGCG-GGAAGTGTG-----AAGCGGC-------CAATGGCACGGA 1754

Mus\_musculus TGAATGGAG-GGAGGTGCG-----AAGTGGC-------CAACGGCACTGA 1933

Pan\_troglodytes TCAGATGTA-AAA--TGGG-CACAGAGGGG-------------GCTGGGA 1793

Cavia\_porcellus TCAGAGGCG-ACAGCTGGGATTCAGGGAAGTGCAGCGACTATTGTTGGGA 1763

Rattus\_norvegicus CTGAGGTTA-GGAGAAGTT----AGAATGGTCCT----TGTTGGTACTGC 1761

Oreochromis\_niloticus ACACACACACACACACACA-CACACACACACACACACACACACACACACA 1757

Danio\_rerio GTGCGCTTG----CGTGTATTTTAAAGAGAG-----------TGTGTGAG 1759

Homo\_sapiens GGCCTG---------------------CGTGTGAGTA-----------CC 1772

Mus\_musculus AGCCTG---------------------TGTGTGAGTA-----------CC 1951

Pan\_troglodytes AGTCG----------------------TGCGGAACCGCTCCCTCCTGCCT 1821

Cavia\_porcellus GGTGGATTAATG--------------CTGTGTGATTAATTATGCGTGGCT 1799

Rattus\_norvegicus TGTCTGGGTGGT--------------GGGTGTAAGTGCTGGAGTCTGTCT 1797

Oreochromis\_niloticus CACACANNNNNNNNNNNNNNNNNNNNACACACACACA-----------CA 1796

Danio\_rerio ATTCTCA-------------------GTGTGTAAAGACAAGAA-----CG 1785

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Homo\_sapiens ACC-CCTGCGGGACCTGTTGC-TTTGTCGAGGGCAGAGCCCCTGCCTTCT 1820

Mus\_musculus GCC-CCTGAG---------------------------------------- 1960

Pan\_troglodytes GCC-TGTGAGTGCCCA----------TCAGCCGTGGGGAACTGTTCTGTT 1860

Cavia\_porcellus TCC-CA-GAATGCGCAGCCCC-CTTCCCCGCCACAGTGG-CCGCTTGCCT 1845

Rattus\_norvegicus TCTGTCTTGGCAGCTGCAGCC-CCACCTCTGCACTGTGTTCCAGGGGTCC 1846

Oreochromis\_niloticus CACACACACACACACACACAC-ACACACACACAAAAAGCCCAACCGCCCC 1845

Danio\_rerio TGTGTGTGTGTGTTTGTATTTGTCTCTTCATCATAATAATCTCTTCATGT 1835

Homo\_sapiens GCAGCCGC---GCAGGGGACAGAACACTAGGCCATTGTCTTCTGGAGATG 1867

Mus\_musculus --------------------------------------------------

Pan\_troglodytes GTGGCCG----ATGCCCTTCAACTTGAG---TCCATCCCTGATGAGAATA 1903

Cavia\_porcellus GTGACTT----GTGCAGGCCAGGCTGAGAATCCTGTTTTTGTAGAGGCTG 1891

Rattus\_norvegicus TCAGCCT-----CAGGCCATCAACTGTGCAGCTGGCGTGATTTGGGGATG 1891

Oreochromis\_niloticus CCCACCT----TCATCAGCCCTTTAATGAATGCAAGTCCCCCTTCGCCCG 1891

Danio\_rerio GGTGTGTATGTGTGCAGGTCAAACGTGTGAGGTGGACATTAATGAGTGTG 1885

Homo\_sapiens GCCCAGAGTCTGGGCACGGTCAC---GTGCTGACTTTTATTGGACAAAGT 1914

Mus\_musculus --------------------------------------------------

Pan\_troglodytes A-------TGAGGAGGTGTTTGG---TGGCTGGA------------AAAA 1931

Cavia\_porcellus GGGTGGGCTGGAGGGCCACCGGG---CTGCAAGGT-----------GGGA 1927

Rattus\_norvegicus GGAAGGAGTAGGCAGCCAGGGGAAGTCTGCTGGTGCT---------AGGG 1932

Oreochromis\_niloticus GCAAAGTGAGAGGACGCGTCCAG----TCCT---------------AAAT 1922

Danio\_rerio TGAGGAACCCGTGCACTAATGGAGGAGTGTGTG-------------AAAA 1922

Homo\_sapiens CTGGCAATTACTTAATCACCAGCAATTATGCTGCGTGTGGAGCTGG 1960

Mus\_musculus ----------------------------------------------

Pan\_troglodytes GAGTTCCCTTC---GCCCCCCAGGA-GCTACAG------------- 1960

Cavia\_porcellus GTGCCCACTTCTGGGCCACTGGGGATGGTGCAG------------- 1960

Rattus\_norvegicus CTCGTGCCTTT----CAACTTGAGCTCCTCCC-------------- 1960

Oreochromis\_niloticus CTTGTTTTTCTGCTCTTTCATGGGCGACAGCTGGGGCT-------- 1960

Danio\_rerio CCTGCGCGGTGGATTTCAGTGCCGCTGCAATCCTGGAT-------- 1960