

CLUSTAL 2.1 multiple sequence alignment

```
Rat -----  
Mouse -----  
Western_Claved_Frog -----  
Zebrafish -----  
Chicken -----  
Human -----  
Chimpanzee GCGGCCGCCCGTAGCCCAATTGCGCAGAGGGCTCGCCTTGCACCTCCTCTTCCCCGCCG 60  
Dog -----  
Cat -----  
Cattle -----  
C._elegans -----
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Rat -----  
Mouse -----  
Western_Claved_Frog -----  
Zebrafish -----  
Chicken -----  
Human -----  
Chimpanzee CCCTCCCTCTCGCCGAAAGGAGGACGGACCCAGCTGCAGGCTCCGAGCTGGTTTATTC 120  
Dog -----  
Cat -----  
Cattle -----  
C._elegans -----
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Rat -----  
Mouse -----  
Western_Claved_Frog -----  
Zebrafish -----  
Chicken -----  
Human -----  
Chimpanzee TGGGCCGAGGATTACATTTATGCACGAACGGTCTTACTGGCTCCAGATTCGCCACTTGG 180  
Dog -----  
Cat -----  
Cattle -----  
C._elegans -----
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```
Rat -----  
Mouse -----  
Western_Claved_Frog -----  
Zebrafish -----  
Chicken -----  
Human -----  
Chimpanzee GCACAGGCATAGGAGGCTGTTTTCCAAATTGCTGGTTTTAATGCACCTGCCTTTCAGA 240  
Dog -----  
Cat -----  
Cattle -----  
C._elegans -----
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```
Rat -----  
Mouse -----  
Western_Claved_Frog -----  
Zebrafish -----  
Chicken -----  
Human -----  
Chimpanzee TTACCTCTGGGAATCTGTGGGAGGAGCCGAGAGGGTGAAAATGTTTCTTCGCTTTGCAA 300  
Dog -----  
Cat -----  
Cattle -----  
C._elegans -----
```

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Rat -----  
Mouse -----  
Western_Claved_Frog -----  
Zebrafish -----  
Chicken -----  
Human -----  
Chimpanzee AAGGAAGAAAACCTTGTACCCAGCGGGAGACCTCAGCCACGAGTAACCCGGGGAGACAC 360  
Dog -----  
Cat -----  
Cattle -----  
C._elegans -----
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Rat -----  
Mouse -----
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Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee CAGAACC GGGACGGGCTTTGACTGATTTGCCTGCGAGGGTTCCGTAGGAAAGGACGCTTG 420
Dog -----
Cat -----
Cattle -----
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee AACTCGGCGCTTCGGCGGGCGGGCGGGCGGAGTTCCTGCTCACCTCCCTCTCCGCGG 480
Dog -----
Cat -----
Cattle -----
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----GCGGCTCCAGTCCGAAGGCAGC 22
Chimpanzee AAGTCCCCACGAGGTGGTTCAGGGTGTAAACAGAGCGCGGCTCCAGTCCGAAGGCAGC 540
Dog -----
Cat -----
Cattle -----
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human GGCCGGGGGAGGGAAGGAGGGGACCGAACCCCGAGGAGTTTCGAGAATCAACTTCTGG 82
Chimpanzee GGCCGGGGGAGGGAAGGAGGGGACCGAACCCCGAGGAGTTTCCCAGAATCAACTTCTGG 600
Dog -----
Cat -----
Cattle -----
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human TTAGAGTTATGGGAAGCGCGGTTATGGACACCAAGAAGAAAAAGATGTTTCCAGCCCCG 142
Chimpanzee TTAGAGTTATGGGAAGCGCGGTTATGGACACCAAGAAGAAAAAGATGTTTCCAGCCCCG 660
Dog -----ATGGGAAGCGCGGCCATGGACACCAAGAAGAAAAAGATGTTTCCAGCCCCG 52
Cat -----ATGGGAAGCTCGGCCATGGACACCAAGAAGAAAGATGTTGCCAGCCCCG 52
Cattle -----ATGGGAAGCGCGGCCATGGACACCGAGAAGAAGAAAGATGTTTGCAGCCCCG 52
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human GCGGGAGCGGGCGCAAGAAAAATGCCAGCCAGAAGAGGCGTTCGCTGCGCGTGCACATTC 202
Chimpanzee GCGGGAGCGGGCGCAAGAAAAATGCCAGCCAGAAGAGGCGTTCGCTGCGCGTGCACATTC 720
Dog GCGGGAGCGGGCGGGAAGAAAAACCCGAGCCAGAAGCGGCGTTCGCTGCGAGTGCACATTC 112
Cat GCGAGAGCAGCGGCAAAAAAATCCAGCCAGAAGAGGCGTTCGCTGCGAGTGCACATTC 112
Cattle GCAGGAGCGGGCGTGTATGAACAGCATTGAGAAGCGGCGTTCGCTGCGGGTGCACATTC 112
C._elegans -----ATGGTTGCCAAAAAGAATATTTCTCGGAGGGCCCCATCA 39

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human CGG-ACCTGAGTCTCTTCGCCATGCCCTCCTGGACGGAGACCTGGAGGGTTCCGGAAAG 261
Chimpanzee CGG-ACCTGAGTCTCTTCGCCATGCCCTCCTGGACGGAGACCTGGAGGGTTCCGGAAAG 779

Dog	CGG-ACCTGAGTTCCTTTGCCATGCCACTCCTGGATGGAGACCTGGAGAGCTCAGAAAAG	171
Cat	CGG-ACCTGAGTTCCTTTGCCATGCCACTCCTGGACGGAGACCTGGAGAGCTCAGAAAAG	171
Cattle	CGG-ACCTGAGTTCCTTTGCCATGCCGCTCCTGGATGGAGACCTGGAGAGTTCAGAAAAG	171
C._elegans	AATCAGCTCAACGACAATAGTAGCCCTCCACCAATCGGTGAACTTGTGATATCAG-----	94
Rat	-----	
Mouse	-----GCGCGCTCCCGCC-----	13
Western_Claved_Frog	-----	
Zebrafish	-----AACGGACTGTCACT-----	14
Chicken	-----	
Human	CATTCCCTCTCGAAAGGTGGACAGCCCCTTCGGCCCGGGCAGCCCCTCCAAAGGGTTCTTC	321
Chimpanzee	CATTCCCTCTCGAAAGGTGGACAGCCCCTTCGGCCCGGGCAGCCCCTCCAAAGGGTTCTTC	839
Dog	CATTCTTCCCGTAAGGTGGACAGCCCCTGCAGCTCGGGCAGCCCCTCCAAAGGGTTCTTC	231
Cat	CATGCTTCTCGTAAGGTGGACAGCCCCTGCAGCTCGGGCAGCCCCTCCAAAGGGTTCTTC	231
Cattle	CCTCCGCTCTCGTAAGGTGGACAGCCCCTTCGGCTCGGGCAGCCCCTCCAAAGGGTTCTTC	231
C._elegans	-----TTGACGACGAGCCAACGACAGCTCC-----	119
Rat	-----	
Mouse	-----GCC	16
Western_Claved_Frog	-----	
Zebrafish	-----GCC	17
Chicken	-----	
Human	TCCAGAGGCCCCAGCCCCGGCCCTCCAGCCCCATGCTGCACCTGTGAGGCCAAGACC	381
Chimpanzee	TCCAGAGGCCCCAGCCCCGGCCCTCCAGCCCCATGCTGCACCTGTGAGGCCAAGACC	899
Dog	TCCAGAGGCCCCAGCCCCGGCCCTCCAGCCCCGTGCTGCTCCTGTGAGGCCAAGACC	291
Cat	TCTCGAGGCCCCAGCCCCGGCCCTCCAGCCCCGTGCTGCTCCTCGTGTGAGGCCAAGACC	291
Cattle	ACCAGAGGCCCCAGCCCCGGCCCTCCAGCCCCGTGCTGCCCCGTGCGCCCCAAGACC	291
C._elegans	-----GCC	122
Rat	-----	
Mouse	GCCGCGCGCCCCCGCCAC-----TGCAGGCC	45
Western_Claved_Frog	-----	
Zebrafish	AGGACCGATGGACTTAAAAACATG-----AGCA-----CTTAGTTT	53
Chicken	-----	
Human	AGCCCCGGCTCTCCAAAACCGTGTTCCTTCTCCTACCAGGAGTC-----CCCGCCAC	436
Chimpanzee	AGCCCCGGCTCTCCAAAACCGTGTTCCTTCTCCTACCAGGAGTC-----CCCGCCGC	954
Dog	AGCCCTGGCTCTCCAAAACCGTGTTCCTTCTCCTACCAGGAGTC-----TCCACCCC	346
Cat	AGCCCCGGCTCTCCAAAACCGTGTTCCTTCTCCTACCAGGAGTC-----CCCTCCGC	346
Cattle	AGCCCCGGCTCTCCAAAACCGTGTTCCTTCTCCTACCAGGAGTC-----CCCGCCGC	346
C._elegans	AGTCACGAAACCGTCAAAAAGGATGGATTAAAACGGCGAAGAGCAAGGCGTCTGGAA	182
Rat	-----	
Mouse	CCTCCTCCCGATGCG-AGAAGCCCGAGCG-----CCGCGC-----CCATGCTGA--	89
Western_Claved_Frog	-----	
Zebrafish	ACTTCCACCGCCGTG-ATTCGCT-TTTG-----TTGCGTC-----TGTTTGTAGA--	97
Chicken	-----GAT-GCTCA-----TCACGTC-----TCCTT-----	20
Human	GCTCCCTCGACGC--ATGAGCTTCAGTGGGATCTTCCGCTCC-----TCCTCCAAAGAG	489
Chimpanzee	GCTCCCTCGACGC--ATGAGCTTCAGTGGGATCTTCCGCTCC-----TCCTCCAAAGAG	1007
Dog	GCTCCCAAGCCGC--ATGAGCTTCAGTGGGATCTTCCGCTCC-----TCCTCCAAAGAA	399
Cat	GCTCCCAAGCCGC--ATGAGCTTCAGCGGGATCTTCCGCTCC-----TCCTCCAAAGAA	399
Cattle	GCTCCCAAGCCGC--ATGAGCTTCAGCGGGATCTTCCGCTCC-----TCGTCAAAGAC	399
C._elegans	CCTTCGTCGGACACTTTTCGGACGGAGCAGAAACGACGAGCCAAAGATGCTGAAGCGAT	242
Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	-----CTACTGCATCTTTATTAGACTGACCGGAACTTCCGAT-----	135
Chicken	-----	
Human	TCTTCCCCAACTCCAACCTGCTACCTCGCCCGGGGCATCAGGTTTTCTCCCGCTCC	549
Chimpanzee	TCTTCCCCAACTCCAACCTGCTACCTCGCCCGGGGCATCAGGTTTTCTCCCGCTCC	1067
Dog	TCTTCCCCAACTCCAACCCGCTACCTCACCGGGGGCATCAGGTTCTTCTCCTCGCTCC	459
Cat	TCTTCCCCAACTCCAACCCGCTACCTCGCCCGGGGCATCAGGTTCTTCTCCCGCTCC	459
Cattle	TCCTCCCCAGTCCAACCCGTCACCTCGCAGGGGGCATCCGCTTCTTCTCCTCGCTCC	459
C._elegans	TCA-----TGAAGCCGGGAGGAGGAGGATGAAGAGGATATACACAGGATAA	293
Rat	-----	
Mouse	-----TCGGTGTCC-TCCTCCTCCTC-----C-C-----CCTCAGGCG-----	120
Western_Claved_Frog	-----	
Zebrafish	-----CTCCGCGGTC-TCCTCAGCGTC-----TGT-----CCGCCGGTGTAAAA	173
Chicken	-----C-TCCTCTCTCC-----CTC-----CCGCAGGCG-----	44
Human	AGAAAAACCTCCGGCCTC-TCCTCCTCTCCGTCAACACCC-----ACCCAAGTGACCAA	602
Chimpanzee	AGAAAAACCTCCGGCCTC-TCCTCCTCTCCGTCAACACCC-----ACCCAAGTGACCAA	1120
Dog	AGAAAAACTTCGGGTCTC-TCATCCTCTCCATCGACACCC-----ACCAAGTGGCCAA	512
Cat	AGAAAAACCTCAGGCTC-TCCTCCTCTCCGTCCGACACCC-----ACCAAGCGGCCAA	512
Cattle	AGAAAAACTAGTGGCCTC-TCCTCCTCTCCGTCCGACACCC-----ACCCAAGTGGCCAA	512
C._elegans	CTATGATACAGTGAATCGTTCAGGACTTATGAAAAATCGCGAGTGGGTAA	353

Rat	-----	
Mouse	-----GTGCTGGCGGCGGC-----	134
Western_Claved_Frog	-----	
Zebrafish	---GTG-----TGTGTGTTT--GTGTGGAGGACAGCCT--GAG-----	204
Chicken	-----GCGGCAGCG-----	53
Human	---GCAGCACACGTTTCCCCTGGAATC--CTATAAGCACAGCCT--GAACGGTTAGAGA	655
Chimpanzee	---GCAGCACACGTTTCCCCTGGAATC--CTATAAGCACAGCCT--GAACGGTTAGAGA	1173
Dog	---GCAACACACCTTTCTCTCGAATC--CTACAAGCATGAGCCT--GAGCGACTGGAAA	565
Cat	---GCAGCACCGTTTCTCTCGAATC--CTACAAGCACAGCCT--GAGCGACTGGAAA	565
Cattle	---GCAGCACACGTTCCCCTCTCGAGTC--CTACAAGCAAGAGCCT--GAGCGACTGGAAA	565
C._elegans	CACGTGCGCACAGAAGCTTCAAGATTTAGCTGATGAGATGAGGCTTCGAGGAGGTGGACC	413

Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	ATCGCCTC-----GTCTGAGCTC--CACTCTGTCTATCT	235
Chicken	-----GCTCCGGCTCCC	65
Human	ATCGCATCTATGCCTCGTCTTCCCCCGGACACAGGGCAGAGGTT--CTGCCCGTCTTCC	714
Chimpanzee	ATCGCATCTATGCCTCGTCTTCCCCCTCCGGACACAGGGCAGAGGTT--CTGCCCATCTTCC	1232
Dog	ATCGCATCTATGCCTCCTCTTCCCCCTCCGGACACAGGCCAGAGGTA--TTGCCCGTCTTCC	624
Cat	ACCGCATCTACGCTTCACTTCCCCCTCCGGACACAGGCCAGAGGTA--CTGCCCGTCTTCC	624
Cattle	ATCGCATCTATGCCTCCTCTTCCGCTCCGGACACAGGCCAGAGGTT--CAGCCCGTCTTCC	624
C._elegans	ACCGAAACAAGGATCCGAGCCTCCGATCCCAAACCTCCGGTAATAATCTTCCGTGTACC	473

Rat	-----	
Mouse	-CCCG-----GGACCC-----GCG-----	147
Western_Claved_Frog	-CCCA-----CGGTTC-----GC-----	13
Zebrafish	TTCCA-----CAGGTC-----ACGGTTTATC----	257
Chicken	TCTCAGC--TCCCGGCC-----GCC----TC----	85
Human	TTCCAGA--GCCCGACCAGGCTCCACTGGCATCACCGACACACTATGCTCCCTC----	767
Chimpanzee	TTCCAGA--GCCCGACCAGGCTCCACTGGCATCACCGACACACTATGCTCCCTC----	1285
Dog	TTCCAGA--GCGCAGCCAGGCTCCATCGGCATCGCCACACACTATGCTTCCCTC----	677
Cat	TTCCAGA--GCACAGCCGGGCTCCATCAGCATCACCCACGACCATGCTTCCCTC----	677
Cattle	TTCCAGA--GTGCAGCCAGGCTCCCTCAGCATCGCCGACACATCTTCTCCCTCCAAA	681
C._elegans	TCGCAAGCATGGAATTCAA-----TGTCATCACTACGTGTCTCACC-----	516

Rat	-----	
Mouse	-----GAAGC-----	152
Western_Claved_Frog	-----TGAAG-----	18
Zebrafish	-----TGAAG-----	262
Chicken	-----CGAAG-----	90
Human	-----CAAAGC-----	773
Chimpanzee	-----CAAAGC-----	1291
Dog	-----CAGAAC-----	683
Cat	-----CAGAAC-----	683
Cattle	TCTGTAAGTCTGGGCTCCTGGGGGCCAGGCCCGGGCGAAGCTCTGGGCTGCCAGGCC	741
C._elegans	-----GGAGCAA-----	523

Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	-----	
Chicken	-----	
Human	-----	
Chimpanzee	-----	
Dog	-----	
Cat	-----	
Cattle	TCACAGCTGCCAACCTGAGCTGGCGATCGGAGAGTCTCAGATACCCAGATCCAGGCCTC	801
C._elegans	-----	

Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	-----	
Chicken	-----	
Human	-----	
Chimpanzee	-----	
Dog	-----	
Cat	-----	
Cattle	CATCCCCTCTCCCGGCACGTGCCCCGCCACCCCTACCTGGCTCCGCACCCC	861
C._elegans	-----	

Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	-----	

Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat -----
Cattle TCGGGCCCCACCCCGCCGGCCGAGACCACACCCGCGCAGGTTAAACCTGCGGGGACGC 921
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat -----
Cattle GCTTCCGTGGGTGGCGGGGGTAAGCCCCGCCCTGCGCCCCGCGTGTACCGCTTCCCG 981
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat -----
Cattle GCCCAGCCCTTAACCCGCCCTGCAGTCTCGGACCCGCCCGTGGGCCCCCCCCGCT 1041
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat -----
Cattle GCCGTACCGGGCCCTGCGGCCCCAGCGTCCGGGCCCTCGCGTCCCGCCCCGCCCTGCG 1101
C._elegans -----

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat -----
Cattle GCCCCGCTCCGCGGTACCGGGCCCTTCTGCCGGCCCTCCCCGACCCCGCCCTGC 1161
C._elegans -----

Rat -----
Mouse -----CG----- 154
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----CGGGCGCTGGCG-----GCGGCCCTGGGACCCGCGGAAGC 809
Chimpanzee -----CGCGCGCTGGCG-----GCGGCCCTGGGACCCGCGGAAGC 1327
Dog -----CGTAAGTCTGGCCTTCTCCTGCGGGCC--GGCCTCCAGGC-- 722
Cat -----CGTAAGTCCG-----TGGGCT--GGCCGCCAGGCC 713
Cattle GGCTCCGGCCCCGCCCCGCGCCCCGCCGCTACCGGGCCCTGCGGCCCCCGCGGC 1221
C._elegans -----TTGGGCCATC----- 533

Rat -----
Mouse -----
Western_Clawed_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat G----- 714

Cattle	CCCGCCGCGCCCCAGTCTCCCCGCACCCCGCCCTCCGCCCCGCGCGCCCCGCCCCGCG	1281
C._elegans	-----	
Rat	-----	
Mouse	-----GCATGCTG-----	162
Western_Claved_Frog	-----GCATGCTG-----	26
Zebrafish	-----ATATGCTG-----	270
Chicken	-----GGATGCTG-----	98
Human	-----CGGCATGCTG-----	819
Chimpanzee	-----CGGCATGCTG-----	1337
Dog	-----AATT-CTA-----	729
Cat	-----CTGCTTGCTG-----	724
Cattle	CGGCCGGGGACGAGCGCCGCCGAGCGCATGCTGATCCGTGTGGGGCCGGGGCGCGAGGAC	1341
C._elegans	-----GGGTGTTGTC-----	543
Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	-----	
Chicken	-----	
Human	-----	
Chimpanzee	-----	
Dog	-----	
Cat	-----	
Cattle	AGCCGGGTCTCCTCCCGGAGGCCGCGGTTCCCGCCGCCACCGCCCGTCCAGCCGCGT	1401
C._elegans	-----	
Rat	-----	
Mouse	-----GAGAAGC-----	169
Western_Claved_Frog	-----GAGAAAC-----	33
Zebrafish	-----GAGAAAC-----	277
Chicken	-----GAGAAAC-----	105
Human	-----GAGAAGC-----	826
Chimpanzee	-----GAGAAGC-----	1344
Dog	-----AACTGAA-----	736
Cat	-----GTCTCAT-----	731
Cattle	CGGGGGCCGGTGAGGGAAACGCGGGCCGACGGAGCGGTCCTGCGGTGGCCGCGGTGCCT	1461
C._elegans	-----AAGGCGC-----	550
Rat	-----	
Mouse	-----TGGAGTTCC-----	178
Western_Claved_Frog	-----TAGAGCTGG-----	42
Zebrafish	-----TCGATATCG-----	286
Chicken	-----TCGAGCTCG-----	114
Human	-----TGGAGTTCC-----	835
Chimpanzee	-----TGGAGTTCC-----	1353
Dog	-----TAGAATACT-----	745
Cat	-----TGAGATGGT-----	740
Cattle	CTCGGAGGCGTAATCGAGCTGGCTCCAAGGGGAGCCCGCAGCCCGGCCCTCGGCACGGAT	1521
C._elegans	-----CGTTTTCC-----	558
Rat	-----	
Mouse	-----AGGA-----	182
Western_Claved_Frog	-----AAGA-----	46
Zebrafish	-----AGGA-----	290
Chicken	-----AAGA-----	118
Human	-----AGGA-----	839
Chimpanzee	-----AGGA-----	1357
Dog	-----GGGA-----	749
Cat	-----GGACTT-----	746
Cattle	GGTCGGTCCTTTTGTCTTACGAGCTGTACTCGGCTGAGAGCAAGAGCAGCAACGCCATC	1581
C._elegans	-----GATC-----	562
Rat	-----	
Mouse	-----	
Western_Claved_Frog	-----	
Zebrafish	-----	
Chicken	-----	
Human	-----	
Chimpanzee	-----	
Dog	-----	
Cat	-----	
Cattle	CCACTGGCAGGGCTGGCGTTCAGCCAAACTTTGTTTACAGAAAGAGGCCAGCTGCCAGC	1641
C._elegans	-----	
Rat	-----	

Mouse -----
Western_Claved_Frog -----
Zebrafish -----
Chicken -----
Human -----
Chimpanzee -----
Dog -----
Cat -----
Cattle GTTACCACGTGTACATCCTGCCTCATACCACCACCATCACAGCTAAGCCCAGGTCTCAC 1701
C._elegans -----

Rat -----AA-----GAAGAC-TCAGAGA-- 15
Mouse -----GGAA-----GCA-----GAAGAC-TCAGAAA-- 202
Western_Claved_Frog -----TGAA-----GCTGTT-----GAAGAA-TCAGAAA-- 69
Zebrafish -----TGAA-----GCTGTT-----GAACAT-TCTGAGA-- 313
Chicken -----TGAA-----GCACCT-----GAAGAG-TCGGAAA-- 141
Human -----CGAA-----GCAGTA-----GAAGAC-TCAGAAA-- 862
Chimpanzee -----CGAA-----GCAGTA-----GAAGAC-TCAGAAA-- 1380
Dog -----CTAA-----GCCACA-----GAAGAC-TCAGAGA-- 772
Cat -----CTCA-----GAGACA-----GAAGAC-TCAGAGA-- 769
Cattle CCTCTCAGCGTCCCTCCAAA-----GCCCTTCTGTGCGGCCAGAAGAC-TCAGAGA-- 1753
C._elegans -----CGAACTTTGACTTTTACACGTG-----GCACACGTTTGAAGCG 600
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Rat -----GTGGCGTT-TATATGCG--ATTCATGAGGTCACACAAGTGTATGACATCGTT 65
Mouse -----GTGGCGTT-TATATGCG--ATTCATGAGGTCACACAAGTGTATGACATCGTT 252
Western_Claved_Frog -----GTGACATA-TATACGCG--CTTCATGAAATCCCACAAGTGTACGACATTGTC 119
Zebrafish -----GCGACATT-TACATGCG--GTTTATGAAGTCACATAAGTGTATGACATCGTC 363
Chicken -----GTGACATT-TATGTGCG--ATTCATGAGGTCACACAAGTGTATGACATGTT 191
Human -----GTGGTGT-TACATGCG--ATTCATGAGGTCACACAAGTGTATGACATCGTT 912
Chimpanzee -----GTGGTGT-TACATGCG--ATTCATGAGGTCACACAAGTGTATGACATCGTT 1430
Dog -----GTGGTGT-TACATGCG--CTTCATGAGGTCACACAAGTGTATGACATCGTT 822
Cat -----GTGGCGTC-TACATGCG--CTTCATGAGGTCACACAAGTGTACGACATCGTT 819
Cattle -----GTGGCGTT-TACATGCG--ATTCATGAGGTCACACAAGTGTACGACATCGTT 1803
C._elegans GATAACCACGACGCTGTATATCTTTTATTCATGAGGCTCACAATGCTACGATCTTATC 660
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Rat CCAACCAGCTCAAAGCTTGTGTCTTCGACACTACGTT-GCAAGTTAAAAAGGCCCTTCTT 124
Mouse CCAACCAGTTCAAAGCTTGTGTCTTCGACACTACGTT-GCAAGTCAAAGGCCCTTCTT 311
Western_Claved_Frog CCAACCAGCTCAAAGCTTGTGTCTTCGACACTACGTT-ACAAGTAAAGAAGGCCCTTTTT 178
Zebrafish CCTACCAGCTCAAAGCTTGTGTCTTCGACACAACGCT-GCAGTTAAAAAGGCCCTTTTT 422
Chicken CCAACAAGCTCAAAGCTTGTGTCTTCGACACTACGTT-ACAAGTAAAGAAGGCCCTTTTT 250
Human CCAACCAGTTCAAAGCTTGTGTCTTCGATACTACATT-ACAAGTAAAAAGGCCCTTCTT 971
Chimpanzee CCAACCAGTTCAAAGCTTGTGTCTTCGATACTACATT-ACAAGTAAAAAGGCCCTTCTT 1489
Dog CCCACGAGTTCAAAGCTTGTGTCTTCGATACTACTTT-ACAAGTAAAAAGGCCCTTCTT 881
Cat CCCACGAGTTCAAAGCTTGTGTCTTCGATACTACTTT-ACAAGTAAAAAGGCCCTTCTT 878
Cattle CCAACCAGCTCAAAGCTTGTGTCTTCGATACTACTTT-ACAAGTAAAAAGGCCCTTCTT 1862
C._elegans CCGACATCGTCAAAGTATGAGTATTCGACAC-ACATTTGCCTGTTCAAAGGCATTCTA 719
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Rat TGCTTTGGTAGCCAACGGAGTCCGTCGACGCGCGTGTGGGAAAGTAAAAAGCAGAGTT 184
Mouse TGCCCTTGGTAGCCAACGGAGTCCGTCGACGCGCGTGTGGGAAAGTAAAAAGCAGAGTT 371
Western_Claved_Frog TGCCCTTGGTAGCCAATGGCGTCCGAGCTGCTCCTCTATGGGAAACAAAAACAGAGTTT 238
Zebrafish TGCAATTGGTAGCCAATGGAGTCCGAGCGCCCTCTGTGGGAGACTAAGAAACAGAGTTT 482
Chicken CGCCTTGGTAGCCAATGGTGTGAGAGCAGCTCCACTGTGGGAGAGTAAAAACAGAGTTT 310
Human TGCTTTGGTAGCCAACGGTGTCCGAGCAGCGCCACTGTGGGAGAGTAAAAACAAAGTTT 1031
Chimpanzee TGCTTTGGTAGCCAACGGTGTCCGAGCAGCGCCACTGTGGGAGAGTAAAAACAAAGTTT 1549
Dog TGCCCTTAGTAGCCAATGGTGTCCGAGCAGCGCGCTGTGGGAGAGTAAAGAAACAAAGTTT 941
Cat TGCCCTTAGTAGCCAATGGTGTCCGAGCAGCGCGCTGTGGGAGAGTAAAGAAACAAAGTTT 938
Cattle TGCCCTTAGTAGCCAATGGTGTCCGAGCAGCACTCTGTGGGAGAGTAAAAACAAAGTTT 1922
C._elegans CGCTCTGGTTTATAACGGAGTACGTGCTGCACCCTATGGGATACCGATAATCAACGATT 779
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Rat CGTAGGAATGCTCACAAATACAGATTTTCATAAACTACTACAGATACTATAA----- 238
Mouse TGTAGGAATGCTCACGATTACAGATTTTCATAAATATCTTACAGATACTATAA----- 425
Western_Claved_Frog TGTAGGTATGTTAACAATACAGATTTTCATTAATATATGTCATCGATATTACAA----- 292
Zebrafish TGTGGGATGTTAACCATCACAGACTTCATTAACATCCTTCACAGATACTACAG----- 536
Chicken TGTAGG----- 316
Human TGTAGGAATGCTAACAATACAGATTTTCATAAATATACTACATAGATACTATAA----- 1085
Chimpanzee TGTAGGAATGCTAACAATACAGATTTTCATAAATATACTACATAGATACTATAA----- 1603
Dog TGTAGGAATGCTAACAATACAGATTTTCATAAATATACTACATAGATACTATAA----- 995
Cat CGTAGGAATGCTAACAATACAGATTTTCATAAATATACTACATAGATACTATAA----- 992
Cattle TGTAGGAATGCTAACAATACAGATTTTCATTAATATACTACATAGATACTATAA----- 1976
C._elegans CACCGGAATGCTAACAATACGGATTTTATTAAGATTTTGTGCAAGCACTACGACAAAAG 839
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Rat -ATCCCCATGGTACAGATTTATGAATTGGAGGAACATAAGATTGAAACGT-GGAGGGA- 295
Mouse -ATCCCCATGGTACAGATTTATGAATTGGAAGAACATAAGATTGAAACGT-GGAGGGA- 482
Western_Claved_Frog -GTCTCCCATGGTACAGATTTATGAGCTGGAAGAGCACAAGATCGAGACAT-GGAGGGA- 349
Zebrafish -ATCCCCATGGTACAAATCTATGAGCTTGAAGAGCATAAAATTGAGACAT-GGAGAGA- 593
Chicken -----TTCAGATCTATGAATTGGAGGAGCACAAGATAGAAACCT-GGAGGGA- 362
Human -ATCACCATGGTACAGATTTATGAATTAGAGGAACATAAAATTGAAACAT-GGAGGGA- 1142

Chimpanzee -ATCACCTATGGTACAGATTTATGAATTAGAGGAACATAAAAATTGAAACAT-GGAGGGA- 1660
 Dog -ATCACCCATGGTACAGATTTATGAATTAGAGAACATAAGATTGAAACAT-GGAGGGA- 1052
 Cat -ATCACCCATGGTACAGATCTATGAATTAGAGGAACATAAGATTGAAACAT-GGAGGGA- 1049
 Cattle -ATCACCCATGGTACAGATTTATGAATTAGAGGAACATAAGATTGAAACAT-GGAGGGA- 2033
 C._elegans AGACAACCTCCGA-GCGAATCCGCGCGCTCGAAGATCAACAAATC-AGCCATTGGCGGGAT 897
 * * * * *

Rat --ACTGTACTTACAAGAAACCTTCAAGCCTTTGGTGAATATCTCTCCAGATGCGAGCCTC 353
 Mouse --GTTGTACTTACAAGAAACCTTCAAGCCTTTGGTGAACATCTCTCCAGATGCGAGCCTC 540
 Western_Claved_Frog --GCTGTATTTACAGGAGACGTTCAAGCCTCTAGTGAACATATTTCCAGATGCAAGTCTC 407
 Zebrafish --GCTCTATCTACAAGAAACATTTAAGCCTTTAGTGAACATATCTCCAGATGCAAGCATA 651
 Chicken --ACTTTATTTACAAGAGACGTTTAAACCTTTAGTGAACATCTCCCCAGATGCAAGCCTT 420
 Human --GCTTTATTTACAAGAAACATTTAAGCCTTTAGTGAATATATCTCCAGATGCAAGCCTC 1200
 Chimpanzee --GCTTTATTTACAAGAAACATTTAAGCCTTTAGTGAATATATCTCCAGATGCAAGCCTC 1718
 Dog --GCTTTATTTACAAGAAACATTTAAGCCTTTAGTGAATATATCTCCAGATGCAAGCCTC 1110
 Cat --GCTTTATTTACAAGAAACATTTAAGCCTTTAGTGAATATATCTCCAGATGCAAGCCTC 1107
 Cattle --GCTTTATTTACAAGAAACATTTAAGCCTTTAGTGAATATATCTCCAGATGCAAGCCTC 2091
 C._elegans CAATTCGAGTTGGACGGAACACTTCGACCATTGTATATATTTGATCCAAATGAGAGCCTC 957
 * * * * *

Rat TTCGATGCTGTATACTCGTTGATCAAAAATAAAAATCCACAGATTGCCAGTTATTGACCCT 413
 Mouse TTCGATGCTGTATACTCGTTGATCAAAAATAAAAATCCACAGATTGCCAGTTATTGACCCT 600
 Western_Claved_Frog TTCGATGCTGTATATCTCATTTGATCAAAAATAAAAATCCACAGATTGCCCTGTTATTGGCCCA 467
 Zebrafish TTTGATGCTGTGTATTTCACTGATCAAAAACAAGATCCACCGGCTGCCCGTCATCGACCCC 711
 Chicken TTTGATGCTGTATATTTCACTGATCAAAAACAAGATCCACAGATTGCCAGTTATTGATGCC 480
 Human TTCGATGCTGTATACTCGTTGATCAAAAATAAAAATCCACAGATTGCCCGTTATTGACCCT 1260
 Chimpanzee TTCGATGCTGTATACTCGTTGATCAAAAATAAAAATCCACAGATTGCCCGTTATTGACCCT 1778
 Dog TTCGATGCTGTATACTCGTTGATCAAAAATAAAAATCCACAGATTGCCAGTTATTGACCCT 1170
 Cat TTCGATGCTGTATACTCGTTGATCAAAAATAAAAATCCACAGATTGCCAGTTATTGACCCT 1167
 Cattle TTCGATGCTGTGCACCTCGTTGATCAAAAATAAAAATCCACAGATTGCCAGTTATTGACCCT 2151
 C._elegans CATAGAGCAGTTGAACCTGTCGAGTCAAAAAGTACACAGACTGCCCGTTTGGATTCGA 1017
 * * * * *

Rat ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 473
 Mouse ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 660
 Western_Claved_Frog GTCAGTGGAAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 527
 Zebrafish GTCAGTGGAAATGCACCTTTACATTTTACGCGCACAAAAGGATCCTGAAATTCCTTCCAGCTG 771
 Chicken GTCAGTGGAAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 540
 Human ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 1320
 Chimpanzee ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 1838
 Dog ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 1230
 Cat ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 1227
 Cattle ATCAGTGGGAATGCACCTTTATATACTTACCCACAAAAGAATCCTCAAGTTCCTCCAGCTT 2211
 C._elegans AAAACTGGAAATATTACATATATATTGACACATAAGAGAATTTATGAAGTTCCTTATCACTT 1077
 * * * * *

Rat TTTATGTCTGACATGCCAAAGCCCGCTTCATGAAGCAGAACCTGGATGAGCTCGGAATA 533
 Mouse TTTATGTCTGACATGCCAAAGCCTGCCTTCATGAAGCAGAACCTGGATGAGCTTGGAAATC 720
 Western_Claved_Frog TTTGTGTGAGAAATGCCAAAGCCTGCCTTCATGAAGCAGAATTTAGAGGAGCTGGGGATC 587
 Zebrafish TTTGTTTGTGAGATGCCAAAGCCCGCTTTATGAAGCAGACACTGGAGGAGCTGGGATC 831
 Chicken TTTATGTCTGAGATGCCAAAGCCTGCCTTTATGAAGAGAATCTGGATGAACTTGGAAATA 600
 Human TTTATGTCTGATATGCCAAAGCCTGCCTTCATGAAGCAGAACCTGGATGAGCTTGGAAATA 1380
 Chimpanzee TTTATGTCTGATATGCCAAAGCCTGCCTTCATGAAGCAGAACCTGGATGAGCTTGGAAATA 1898
 Dog TTTATGTCTGATATGCCAAAGCCTGCCTTCATGAAGCAGAACCTGGATGCCCTTGGAAAT 1290
 Cat TTTATGTCTGATATGCCAAAGCCTGCCTTCATGAAGCAGAACCTTAGACGCCCTTGGATC 1287
 Cattle TTTATGTCTGATATGCCAAAGCCTGCCTTCATGAAGCAGAACCTGGACGCACTTGGAAAT 2271
 C._elegans TATATGCGTGAATCACTCGTCCATCTCATGTCGTTGATCCACGTTGAGTCCGGAATC 1137
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Rat GGAACATATCACAATATTGCCTTCATTCACCCGAATACCCCATCATCAAAGCCTTGAAC 593
 Mouse GGAACGTACCACAATATTGCCTTCATTCACCCAGACACTCCCATCATCAAAGCCTTGAAC 780
 Western_Claved_Frog GGCACATACCACAACATTTGCCTTCATCCACCTCACACTCCTATCATTTAAAGCTTTGAAT 647
 Zebrafish GGGACCTACAACAACATTTGCCTTCATTCACCCGACACTCCATCATCAAAGCACTCAGC 891
 Chicken GGAACGTACCACAACATTTGCCTTCATATCCAGACACTCCTATCATTTAAAGCCTTGAAC 660
 Human GGAACGTACCACAACATTTGCCTTCATATCCAGACACTCCCATCATCAAAGCCTTGAAC 1440
 Chimpanzee GGAACGTACCACAACATTTGCCTTCATATCCAGACACTCCCATCATCAAAGCCTTGAAC 1958
 Dog GGGACCTACCACAACATTCGCCTTTATCCACCCAGACACTCCCATCATTTAAAGCCTTGAAC 1350
 Cat GGGACCTACCACAACATTCGCCTTCATCCACCCGACACTCCCATCATTTAAAGCCTTGAAC 1347
 Cattle GGGACCTACCATAACATTCGCCTTCATACACCCGACACTCCCATCATTTAAAGCCTTGAAC 2331
 C._elegans GGTGCCTGGGTGACATTTCTGTGTTGCCACGTGGATACGCCATCCAGACGCTTTGGAG 1197
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Rat ATCTTTGTGGAGAGACGGATATCTGCGCTGCCTGTGGTGGATGAGTCAGGAAAAGTTGTA 653
 Mouse ATCTTCTGTGGAGAGACGGATATCCGCATTGCCTGTGGTGGATGAGTCAGGAAAAGTTGTA 840
 Western_Claved_Frog ATATTCGTGGAGAGAGAGTCTCGGCGCTGCCGCTGGTGGGCGAGTCCGAAAAGTTGTA 707
 Zebrafish GTCTTTGTGGACAGAGAGTGTCTGCACCTGCCTGTGGTGGATGAGTCAGGAAAAGTTGTA 951
 Chicken ATATTTGTAGAGAGAAGGATATCGGCATTACCTGTTGTGGATGAGTCAGGAAAAGTTGTA 720
 Human ATATTTGTGGAAAGACGAATATCAGCTCTGCCTGTTGTGGATGAGTCAGGAAAAGTTGTA 1500
 Chimpanzee ATATTTGTGGAAAGACGAATATCAGCTCTGCCTGTTGTGGATGAGTCAGGAAAAGTTGTA 2018
 Dog GTCTTTGTAGAAAAGACGAGTGTGCGCTTGCCTGTGGTGGATGAGTCAGGAAAAGTTGTA 1410
 Cat GTCTTTGTAGAAAAGACGAGTGTGCGCTTGCCTGTGGTGGATGAGTCAGGAAAAGTTGTA 1407
 Cattle GTTTTCTGTGGAAAGACGAGTGTGCGCTTGCCTGTGGTGGAGTCCAGGAAAAGTTGTA 2391
 C._elegans CTTTTCCTCAAGAATCGAGTTTCGGCACTCCGTTAATTGATGAAAATGGACGAGTTGTT 1257

Zebrafish ATGATCACAAGTTTGGCCACATCTCCGAATGAAACCCAGAAAACCTTGACCAAGATGTGTG 1371
Chicken ATGACTGC-----TGTAATG-TAT---AAACGT----- 1041
Human GTGACCGC-----CGTGAATG-----TAGACGC----- 1819
Chimpanzee GTGACCGC-----CGTGAATG-----TAGACGC----- 2337
Dog ATGACCAC-----TGTGAGTG-----GAGCAGC----- 1729
Cat ATGACCGC-----TGTGAGTG-----GAGAAGC----- 1726
Cattle GTGACCCC-----CGTGAGCA-----GAGGAGC----- 2710
C._elegans ACCACCAC-----C----- 1547

Rat -----
Mouse -CCGCGCAG-----GAGAACT-TGAACAAA-----GTCTCG----- 1188
Western_Claved_Frog -TTTTAAAG---AAAAGAAGAACT-TGAATGA-----TGTTTTTTTT-- 1097
Zebrafish CTGTTGGAGGGGAGAAAAAAGAACTGTCAATGGGTAAACAGACGGGTTGTTTTTATCAT 1431
Chicken ---TTGTAG-----GAGAATC-TGAACAAA-----GTTTCT----- 1068
Human -CCTAGGAG-----GAGAACT-TGAACAAA-----GTCTCT----- 1848
Chimpanzee -CCTAGGAG-----GAGAACT-TGAACAAA-----GTTTCT----- 2366
Dog -CCTTGGAG-----GAGAACT-TGAACA-----GATTCG----- 1756
Cat -CCTCGTAG-----GAGAACT-TGAACAAA-----GATTCT----- 1755
Cattle -CCTTGCAG-----GAGAACT-TGAACAAA-----GATGCT----- 2739
C._elegans -----ACAATC-CCAACAAGC----- 1562

Rat -----
Mouse -----GGG--TCACG-----TTTGCCTCATGA---ACACTGGC----- 1217
Western_Claved_Frog -----GCG--TCAA-----TCTTTGCCTCAGAA---ACCCTGAA----- 1127
Zebrafish AAACGGGCGATTTAAAGGATCATCTCTTAT-TCAGAAGGATACTGTGAACCTTATTAT 1490
Chicken -----GGG--TCAAG-----TTTGTCTCGAGA---ACAGTGAC----- 1096
Human -----GGG--TCACG-----TTTGCCTCATGA---ACACTGGC----- 1877
Chimpanzee -----GGG--TCACG-----TTTGCCTCATGA---ACACTGGC----- 2395
Dog -----GGG--TCACG-----CCTTGCCTCATGA---ACACGGAC----- 1785
Cat -----GGG--TCACG-----CCTTGCCTCATGA---ACACTGAC----- 1784
Cattle -----GGG--TCACG-----CCTTGCCTCATGA---ACACGGAC----- 2768
C._elegans -----GGG--TGGTGG-----TGGTCCACCA---ACTCGTAA----- 1589

Rat -----
Mouse -----TGCA---ATAGAAGAG-----AGTAAAATGGCTAAGAAT 1248
Western_Claved_Frog -----TGCA---ACAGAGGAAC---AC---AACTGGAC---AGGAAT 1157
Zebrafish ATCACACTACGCTTCTGCAC-GCACACTACAATACTTTTAGCTAGACC--TAAATC 1547
Chicken -----TGCA---ATAGAACAG-----AGCAGGATGGTTGAGAAT 1127
Human -----TGC-----AAGTGGTTAAGAAT 1894
Chimpanzee -----TGC-----AAGTGGTTAAGAAT 2412
Dog -----CGTG---ACAGA-GAC-----AGTAAAATGGCTAAGAAT 1815
Cat -----CGTG---TTAGAAGAC-----CGTAAAATGGCTAAGAAT 1815
Cattle -----TCCGATGAACACAGCAA-----AAACGGCTGAGAAC 2799
C._elegans -----CGCA-----TCGGGTAC 1601

Rat -----
Mouse GTATACC---AGGTTTAGCGATG-----GGTA-----T 1274
Western_Claved_Frog GTGCAA---CTGA-CGGTGT-----CAG---CGGGC-----T 1182
Zebrafish GCGCCATCTGGTGTCTGAGCAGTGCTTGCACACAGACTACGGGCCGTACCATAATCGCCT 1607
Chicken GTGTTTT---GGGACTTAGTGATG-----GATGATGAGTC-----TAT 1162
Human GTATATC---AGGGTTTAAACGATA-----GGTA-----TT 1921
Chimpanzee GTATATC---AGGTTTAAACGATA-----GGTA-----TT 2439
Dog GTATATC---AGGGTTTAGTGATG-----GGTA-----TT 1842
Cat GTATAGC---AGGTTTAGCGATG-----GGTA-----TT 1842
Cattle GTGTGGTATCAGGGTTTAGCGATG-----GGTTTT-----TTT 2832
C._elegans AT-CAAC-----TGGCGGCG-----CT 1617

Rat -----
Mouse TTTTCCAGTGATTTG---TAAGTATA---GGAAAAGATT---TTATGTGCTTGAAGAT 1323
Western_Claved_Frog CTT-----GTA-----CCGGTCCA-----GCGT---GGTCACGAGCTC-ATTTA 1217
Zebrafish CTTTCGAGGGGGTG---TCTGTGCTCTGCAGGGCATTTCAGTAATAATCTC-AGTAT 1661
Chicken TCCCCCAGTGATG---TC-GCAAAAAACAAAGCAGCATGACAAAAGCTT-ATGTT 1215
Human TCTTCCAGTGATGTTGAAATTAAGCTTAAAAAAGAAAGATT---TTATGTGCTTGAAGAT 1978
Chimpanzee TCTTCCAGTGATGTTGAAATTAAGCTTAAAAAAGAAAGATT---TTATGTGCTTGAAGAT 2496
Dog TTTTCCAGTGATATTGAAACTGAGCATAAGAAACA--GAGT---TTATGTGTTGAAGAT 1897
Cat TTTTCCAGTGACGTTGAAACTGAGCATAAGAAACA--GGTT---TTATGTGTTGAAGAT 1897
Cattle TTTCCAGTGATGTTGACACGAAGCATAAAAAAGAGAAAGCTTG--TATGTGTTGAAGAT 2890
C._elegans TCGTCCAGTG-----ATT-----CTCCACCAC 1639

Rat -----
Mouse T-CAGGCTTGCCTTCAAAGACTGCCCTCAGACCTG--TCTGA---AGGATTTTCAATG 1375
Western_Claved_Frog T-TGG---TGGGAA---ACGGTTGTACT---TTTTT---TCAAA---AAATAATTTTGAACA 1263
Zebrafish T-CAG---TGCATGTTATGACTGT-TT---GTTCC---TCGTGTGTATACGGTTTTCAGT 1711
Chicken A-CAA---TGTA---GGCT---T---GTATT---TCAAA---ACG-TCTTCAAGAA 1250
Human T-CAGGCTTGCATTAATAAAGACTGTTTTTCAGACCTT-GTCTGA---AGGATTTTAAATG 2031
Chimpanzee T-CAGGCTTGCATTAATAAAGACTGTTTTTCAGACCTTTGTCTGA---AGGATTTTAAATG 2550
Dog T-CAGGCTTGCCTTAAA-GACTGTTTTTCAGACGTTTGTCTGA---ACGATTTCAAATG 1950

Cat	T-CAGCCTTGCAATAAAAAGACTGTTTTTCAGACCTTCGTCTGA-----GCGATTTCAAATG	1951
Cattle	TTCAAGCTTGCAATAAAAAGACTGTTCTCAGACCATCGTCTGA-----AAGATTTCAAATG	2945
C._elegans	A-CAG-----TAT-----TCCAG-----AAGGTATTGAA--	1662
Rat	-----	
Mouse	CTGTATGTCATTAAGTGCACCTGTGTCTGAAATAGT--ACTACTTTTCATTTCAAAGAA	1433
Western_Claved_Frog	---TATGAAAATGAGG---CC-----CTAGC--GC TTC-----ATGTCTGA---	1297
Zebrafish	---TGTTGGCGTATGAGC---CCGATCACATATTTGT--ACTTTTGACTACTCCTGA---	1760
Chicken	---CATTTGCTGGAAG-----ACTTC-----AC-----	1270
Human	CTGTATGTCATTAAGTGCACCTGTGTCTC-----	2059
Chimpanzee	CTGTATGTCATTAAGTGCACCTGTGTCTCCTGAAGTTTTC-ATTATTTTTCATTTCAAAGAA	2609
Dog	CTGTATGTTATTAAGTGCACCTGTGTCTGAAATTCCTT-ATTACTTTTCATTTCAAAGAA	2009
Cat	CTGTATGTTATTAAGTGCACCTGTGTCTGAAATTTTATATATTTTTCGTTTCAAAGAA	2011
Cattle	CTGTATGTCATTAAGTGCACCTGTGTCTGCGTTTTT--ATTCTTTTTCATGTTAAAGAA	3003
C._elegans	-----GTTGAAG-----	1669
Rat	-----	
Mouse	GTCACTGGGATG-----GAACAGGTGA-CAGAAAGTGAGTGAACGGCAGTCCAGATCA	1486
Western_Claved_Frog	--CGTTACGATT-----GTCATGT--TACCTAATAAGC----TGTATGCGCATAGCA	1341
Zebrafish	---ATTTAGGATCT---GGTTTTGTCTCTCCTTCGCGATCCCTTTGTAACGCAGACAG	1813
Chicken	---ACGATG-----TCCTTCATTA-----AAATGCACGTGA	1298
Human	---CTG-----	2062
Chimpanzee	TTCACTGGTATGG-AACAGGTGATGTGG-CATAAGGTGAGTGCACGGTATGTTTCAGATCA	2667
Dog	TTCACTGGTCTGT-AACAGGTAATATGA-CATAAGGCGAGTGCATGGCCTATTCAGACC-	2066
Cat	TTCACTGGTCTGT-AACAGGTAATATGA-CATAAGGCGAGCAGCATGGCTTCTTCAGACC-	2068
Cattle	GTCACTGGTATCTTAACAGCGGCATGA-TGTAAGGCAAGT--TGGCCTATTAAGAAC-	3059
C._elegans	-----ATGATG-----A	1676
Rat	-----	
Mouse	CGGTG-----CCTTAT--GTCCAA--ACGCAATATGTCACCGCCGCTGCCGC	1529
Western_Claved_Frog	TAGTG-----CTCTGTATCAGTCCAA--AAGAACTTTGCATTTATGGGATACG---	1386
Zebrafish	AAATGGTTTCCTCCTCTTTATCTGTCTAT--GGTGCCTTCTGTCCAGCAGTTAT----	1865
Chicken	TTCTGA-----ACCTTTTTCATTTTGT---A----TTTGA--CAGAAGTCAC-----	1336
Human	-----	
Chimpanzee	CAGTG-----CCTTATGTCCGAATACAGCAATATGTCACCGCCGAGCCGGGGTGA	2719
Dog	TAGTG-----CCTTATGTCCGAACAC-GCGATATGTCACCATTGCGGCCCGTG----	2113
Cat	TAGTG-----CCTTATGTCCGAACAC-GTGATATGTCACCTGCGGCCCGTG----	2115
Cattle	TAGAG-----CCTTACGTCCGAACAG--CGGCCCGTACCACCGCTGCCCGCG--	3105
C._elegans	TGATG-----	1681
Rat	-----	
Mouse	-ACGCCCAAAGTG----CTGCTGAAGAGACACCCAGCCCAAGTGTGAGCATCTTCAGAC	1584
Western_Claved_Frog	-ATGCCAGCACTG---TCAGCGGGTGGGA--A--CCG--GTGGGTG----CAAAG	1429
Zebrafish	--CGCCCACTACTGGTTGCCAATAGATCAAGATTAA--CTGAATGTTGATAT---CAAAG	1918
Chicken	--TGGTCAGCAATG-----GATATAT-GTGACATA--AGGCAAGTGTATGG--CATAT	1382
Human	-----	
Chimpanzee	CGTGTGTGAAACAACACCGAGCTTGAATGTGGAAGTCTTTGAACCTTTTA-----CCAA	2774
Dog	-GCAGCTGGAGCCACACGGTGTGGGGCGTGAGCGTCTTTGGACCTTTAC-----CAAAT	2167
Cat	-GCAGCTGGAGCCACACGGTGTGGGGCGTGACAGTCTTTGGACCTTTAC-----CAAAT	2169
Cattle	-CGGCCCGG-AGCGTGTCCGGCGAGCGGCGACTGC--TGGAGTGTGAACGC--GCTGAA	3159
C._elegans	-----	
Rat	-----	
Mouse	CTTTTACCAGTCTCTCCTTTTCACCTAATGCGTTGAAAAGTTTTAATTTGAGTACAGG	1644
Western_Claved_Frog	CGA-CA-----CTGTACT--GAATGTGAAAGG-----GC-----TGC	1458
Zebrafish	CGAATG-----TTCAGT--TGTTTTAAAAAG-----AAGAAATAA	1952
Chicken	TCA-TA-----TCATAGTCCCTTATGTCAAAAT-----AC-----AG	1413
Human	-----	
Chimpanzee	TCAGTTT-----GTTTTCTTTAGATTTGTCAAAAAGTTGTAATTTGAATATAAA	2823
Dog	CAGTTT-----GTTTCCATTAGATTTGTGCAACAGTTGTGATTTGGATATAAA	2215
Cat	CAGTTT-----GTTCTCATTAGATTTGTCAAACCGTTGTAATTTGGATATAAA	2218
Cattle	CCTTTACCAGATCAGTTTGTTTTCATCAATTTGTTGACTAGCTGTAATCTGAATATAAA	3219
C._elegans	-----A	1682
Rat	-----	
Mouse	CAACT-GAAAATGTGATGTGATGCCTTAAGCGCTCTGCATCCGTCCTGTTCTGGCTGCC	1703
Western_Claved_Frog	CAAC-----TAAAGCCACATGTAACCTTGC--CCGCC--TCTTATTTAGT	1499
Zebrafish	CAAC-----CAAACCCCC-----CTTTT--TTGCCG--TTTGTAGTGTGT	1988
Chicken	CAATA-----TGTCATCACT-----GTTGC--CCATCAC-TGTCAAAGGAA	1451
Human	-----	
Chimpanzee	TAATT-ACTTT--AAAATTTAATGACACTTTTACACGTAAGTGTGTTTCTGGGCTAC	2880
Dog	TAATT-ACTTTATAAACTTTAACGACAGTTTATGTTAAGTGTCT-GTTCTGAACATAT	2273
Cat	TCATT-ACTTTGTAAACTTCAATGGCAGTTTACGTTTAAAGTGTCT-GTTCTGAACATAT	2276
Cattle	TAATTTACTTTATAAAATTTAATGATGGTCTTACGTTTAAAGTGTCCGTTCTGAACCAC	3279
C._elegans	TGAC-----	1686

Rat -----
 Mouse -GTGTTAGCGAGGCCGGCTTGCAACAGCGCTTTATTT-ATTTTTACT-----CTCAT 1754
 Western_Claved_Frog -GTATC-----CTGCGGTTGCCTGCAAAAGCCCCGC-C-CCCTCGCC-----ATTTCAT 1545
 Zebrafish -GTGTCAC-GACTTTTATTTATTTGCAGA-GCTCTACAC-TTCTTCACTTTGGGTGTTTCAT 2044
 Chicken -GTATTG-----TGTTAAATG-AGACACTGTAT-----TTGA- 1481
 Human -----
 Chimpanzee -CGTGCAACGAGGCTGCTT--TACAACAGCTTTATTT-ATTTTTACT-----TTCAT 2929
 Dog -AATATAAACAAAACACTGCTT--TACAACAGCTTTATTT-ATTTCTACT-----TTCAT 2322
 Cat -AGTGTAACAAAACACTGCTT--TACAACAGCTTTATTT-ATTTTTACT-----TTCCT 2325
 Cattle AGTGTAACAAAACAGGCTGACT--TACAGCAGCTTTATTTATTTTTACT-----TTCAT 3330
 C._elegans -----GAAGAAGCTCCAC-----CACC-----ATCAAT 1709

Rat -----
 Mouse GCAGGTTTC-----AACCTACA-TCCTTTGGTGAGT-AGAGCTCACCATACCTAC 1802
 Western_Claved_Frog -----TGC-----ACCATGGCTGTAGTGTCTGGG-GCTCAC 1575
 Zebrafish CTTGATGTTTTTGTGTTGAAATGATGCT-GTAAACGATAAATGAAATGTTTATTTATTTAT 2103
 Chicken -----ATG--TGAAA-GTCTTTAAACCTAA 1503
 Human -----
 Chimpanzee GCAATTTTTTTTACAC-----AT-CTTTTGGTGGAGT-AAACTTCACCACATCCAT 2977
 Dog GCAGTTTTTTT-----ACA-CATGTGGTGGGT-AAGCTTCACCACACCCAT 2366
 Cat GCAATTTTTTTTCTTTTTTTTTTAAA-CATCCTGGTGGGT-AAGCCTCCCCATGCCCGT 2383
 Cattle GCAGTTTTTTTT-----ACACATCTTTTGGTGGGT-AAACTTGACCATACCCAT 3379
 C._elegans -----TGATTGCTCAA-----CACCGGGCCCGT 1732

Rat -----
 Mouse GAATAAA-----ACCTTGATTTGTTCTCTCAAGTGAAAATCTCTGGAGATTTTAGTTTG 1857
 Western_Claved_Frog -ATCAAGGGGGCACTGCTACGCCTCTCT-CCGCTTACTGTG-----AGGCATTTGGAT--- 1625
 Zebrafish -ATTTAA-----CACTTTTGTAAATTTGG-AAGCG-ATAACC-----AAGCGTGAGAT--- 2148
 Chicken -ACAAA-----TCAGTTTCAGTTCTC-----ATT-----AGACTTGTCAT--- 1538
 Human -----
 Chimpanzee GAATAAACTC--TCAGTTATTTTGAATGGCAAATTTCTCATTTATTTAAGTTTGGAT--- 3032
 Dog CAATAAACCA--TTGGTTGTTATTTTAAATGGCAAATTTCTCATTTAAGTTTGGAT--- 2421
 Cat TAATAAACCA--TCGGTGGTTATTTTAAAAGGCAAATTTCTCATTTAAGTTTGGAT--- 2438
 Cattle GAATAAACCA--TTGGTTGCTACTTTAAAAGGCAGTTTCTCA--TCATTTCAAGTTGCG 3435
 C._elegans -----CTTCTGCCGC-----AACGTAG----- 1749

Rat -----
 Mouse ATCTGGAAAGG-----CTATGCCTTCCAACAGCCACTG--TAGGGTCTTCTA 1903
 Western_Claved_Frog ---ACATA-----CATACA-TACATACACGGGC-GATGGCAGCGTTG-- 1662
 Zebrafish ---GGAAAGAGTTGTTGAGCCCTATGCGAGTAAAACCATGTGCTGGTCAAGGACTTGA- 2203
 Chicken ---AAAAG-----CTGTAATTTGAATATCAGT-----AGACTTC-- 1569
 Human -----
 Chimpanzee --CTGGAAGGA-----CATGACTTCTGAAATAGCCGCTGCT---GGGTTTT-- 3074
 Dog --CTGGAAGGA-----CAGGACTTCTCAAATAGCCACTGTT---AGGTTTT-- 2463
 Cat --CTGGAAGCG-----TAGGACTTCTAAAATAGCCACTGTT---AGAGTGG-- 2480
 Cattle ACCTGGAAAGGA-----TAAGACTTCTCAGAGAGCCACTGTT---GGGTTTT-- 3479
 C._elegans -----

Rat -----
 Mouse AACGTTTATGAAAACAGGCTGTGGTTCGAGGGAAGAAGTAACGGAAGACGTCTTTTTTTT 1963
 Western_Claved_Frog ---GCTCA-----ATA-GGTGCGACCT-----GACGCCAG-----GTTGCTTGT 1699
 Zebrafish ---TGTTCA-----ATGCAATTC AACCTTAA-----AAATCCAC-----TGTTGTTT--TT 2245
 Chicken ---TTTA-----A-----AACTTT-----AATGACAG-----TTTTGTGT--TA 1598
 Human -----
 Chimpanzee -----AAAAGCTGAGGTCCTCAAA----- 3094
 Dog -----AAAGGGTGAAGTTTCTGAAAAGCACGTTGGAGA--GCTGTTCTGTG 2508
 Cat -----AAAAGCCGAAGTTTCTGAAA-GCACGGGTGAAAA--CGTGCTCTGCT 2524
 Cattle -----AAAAGCTGACGTTTCT-----AACAGCAT----- 3503
 C._elegans -----

Rat -----
 Mouse TATTGTGTGTTGAAATGTAAACTCATGATGTTTGTGTGACCGCTGACAAGACGCTTTGTAA 2023
 Western_Claved_Frog GATTTAGAGCCCAATATA-----TGAGAC-ACTGAACA-----ATAA 1736
 Zebrafish AGTTT-GCGTTTCAAG-TCCA-----CGAGGTGACCGACCTCTGTTTGTAT 2288
 Chicken AATGTTGCATTC-----TGA-----ACCGAG-----ATGT 1623
 Human -----
 Chimpanzee GTGTGGAGGAGACGTTGCCG-----TCAGGCGGGAGCCAA-GTGCC-----GGGA 3138
 Dog AGACTGAAACCAGGCAGCGG-----GTGTGAGGAAACAAAAGTGCC---GGGA 2553
 Cat AGACTGGGAACAGGCGCGG-----TTATGAGCAGACAGA-GTGCC---GGGA 2568
 Cattle -GTGTGGGAACCTGCTCTG-----CAGGGCTGCAACAAAAGTGCCCGGAA 3547
 C._elegans -----

Rat -----
 Mouse CTTTTATTGTG-ACACATA-----AAACAGTATTGTCATGCAGTTGAAG 2066
 Western_Claved_Frog TAATCATTTATTTATTTTAC-----TTTAAATAAAAAAATTACAAAAACCCC 1784
 Zebrafish CGATTGTAAGTACACATACAGCGCAGAGGTTCTGTCTGAGGACTCTACAAGTGCCAGA 2348
 Chicken AAAACGAGACTGATTT-----TAAAAAC----- 1646

Human -----
Chimpanzee AGATGTCTATTTTTTTCTTGTGTATTGAAATGTAAATCATGATGTTGTATGACTGCT 3198
Dog AGATGTCTATTTTTTT-CTTGTGTATTGAAATGTAAATCATAATGTTGTATGATTGCT 2612
Cat AGACGTCTATTTTTTT----- 2584
Cattle -GATGTCTATTTTTTTCTTGTGTTTGACA-TGAAATCATGATGCTGTATGACTGCT 3605
C._elegans -----

Rat -----
Mouse GGAAACTCTTTCCCTCCC-----ACACCCACAA-----CCCCACAGCC 2107
Western_Clawed_Frog AAAACCTTTTTTTTTTTT-----TTTTTTTAAAT-----TTTACACAGTT 1826
Zebrafish GAAAGGTCTATTTTTCTGTGTGTTCAACGTTGTTGTAAAGCATTTCATTTAAGTTGTT 2408
Chicken ---AGCTTTATTTATTTTT-----ACTTTCATGACAATT-----TTTACACATCT 1689
Human -----
Chimpanzee GATGAGATTGTTTTTGTAAA-----TTTTATTGTGGCATATACAGTATTGTTCATACA 3250
Dog GATGCGATTGTTTTTGTAAA-----TTTTATTGTGGCATATACAGTATTGTTCATATG 2664
Cat -----
Cattle GATGCGATTGTTTTTGTAAA-----TTTACTGTGGCATATGCAGTATTGTTCATATG 3656
C._elegans -----

Rat -----
Mouse CCC-----AGTGTCACTGCTCTG-AAAATGTTGACACTATAT-----ATCTGTG- 2150
Western_Clawed_Frog CT--GGTGAACGGTAAGAGCTTTTTGCCATATC-AT--TA-AT-----AACTGT-- 1870
Zebrafish TTCCGCAGAACTGTCACTGCTGTT-GTCATGAG-AGAGTA-ATGTCCAGAGATACTGTAA 2465
Chicken TT--GGTGGATAGCTA-AGATTTCC-ACCATATCCAT--TA-AT-----AACTG--- 1731
Human -----
Chimpanzee GTTGAAGAGAAACA--ATGTTTCTAATGTAAGTGTCTG-----AAAATGTTG 3297
Dog ATTGAAAAGAAACACACGTTTCCTAATGTAAGTGTCTG-----AAAATGTCG 2713
Cat -----
Cattle GTTGAAGAGAAACACAATGTTTCCTAGTGTAAAGTGTCTGAAAATGTTG--ACACTGTGT 3714
C._elegans -----

Rat -----
Mouse -----TGTGTATATATGAGCAGAGTTTGGGGGTT-TGTTTTGGGGTTTTGTT 2196
Western_Clawed_Frog -----T-----GATTGTTATAAAAAAAAAAAAAAAAAAAAAAAA-----AAA----- 1901
Zebrafish TTGCACAT-----CACTGGCATGAGGATGCTAATGGATAATCATGCTTTAGATTTCTTTT 2520
Chicken -----
Human -----
Chimpanzee ----ACAC-----TGTATATATATATATAGGATAGTTTGGGTTTTTTTGTGTTTTGGGGTT 3348
Dog ----ACAC-----TGTATATATATAGTATAGTTTGATTTTTTTTTTGTGTTTTGGGGTTTT 2764
Cat -----
Cattle GTGCGTGTGCGTCTGTGTGTGTATACACACACATGATATAGTTTGGTTTTTTTGTGTT 3774
C._elegans -----

Rat -----
Mouse TCG-----TTTTGTTTTTCAG-ATTGAAAATTAAATAAATCCTGTCTACCAGTTT 2246
Western_Clawed_Frog -----AA 1945
Zebrafish TCA-----TTTTATGGTTAAATAATTAATAAAGAATAAACAAAGTGTCTAGAAAA 2571
Chicken -----
Human -----
Chimpanzee TTT-----TTTTTCAGATTGAAAATTAAATAAATCCTACTATCTACCATTTTGT 3399
Dog TTT-----TTTGGCAGATTGAAAATTAAATAAATCCTACTATCGAC----- 2807
Cat -----
Cattle TTGGGGTTTTTTTTTTTTCAGATTGAAACTTAAATAAATCCTACTATCTGCC----- 3827
C._elegans -----

Rat -----
Mouse GCTAAAGTTTTTATG 2261
Western_Clawed_Frog AAAAAAAAAAAAAA-- 1958
Zebrafish AAAAAAAAAAAAAA-- 2584
Chicken -----
Human -----
Chimpanzee TAAA----- 3403
Dog -----
Cat -----
Cattle -----
C._elegans -----