

S1 Text. Sox9 multiple codon sequence alignment. Codon based alignment of all Sox9 sequences used for the phylogenetic inference.

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HoSapSSDR3	ATGAATCTCCTGGACCCCTTCATGAAGATGACCGACGAGCAGGAGAAG---GGCCTGTCCGGCGCCCCCAGCCCCACC
MuMusSCG1	ATGAATCTCCTGGACCCCTTCATGAAGATGACCGACGAGCAGGAGAAG---GGCCTGTCTGGCGCCCCCAGCCCCACC
CaLupS1	ATGAATCTCCTGGACCCCTTCATGAAGATGACCGACGAGCAGGAGAAG---GGCCTGTCCGGCGCCCCCAGCCCCACC
GaGalSTF2	ATGAATCTCCTAGACCCCTTTATGAAAATGACAGAAGAACAGGATAAAA---GGCCTCTCCGGCGCCCCCAGCCCCACC
CoJapSSDRY	ATGAATCTCCTAGACCCCTTCATGAAAATGACGGAAGAACAGGACAAA---TGCATCTCCGACGCCCCCAGCCCCACC
AlMisS1	ATGAATCTCCTAGACCCCTTCATGAAAATGACAGAAGAGCAGGAGAAA---TGCATCTCTGGCGCCCCCAGCCCCACT
TrScrHCC	ATGAATCTCCTTGGACCCCTTCATGAAAATGACAGAAGAGCAGGACAAA---TGCATCTCTGGCGCCCCTAGCCCCACC
LeOliS	ATGAATCTCCTTGGACCCCTTCATGAAAATGACAGAAGAGCAGGACAAA---TGCATCTCTGGCGCCCCTAGCCCCACC
AnPlaSSDRY	ATGAATCTCCTAGACCCCTTCATGAAAATGACAGAAGAACAGGACAAA---TGTATCTCCGACGCCCCCAGCCCCACC
LaChaTFS9	ATGAATCTACTCGATCCCTACATGAAAATGACAGAAGAGCAGGAGAAG---TGTATTTCTGATGCTCCAGCCCCACT
XeLaeTFS1	ATGAATCTCTTGGATCCCTTCATGAAGATGACAGAAGAGCAAGATAAG---TGCATGTCCGGGGCTCCAGCCCCAAC
BuBufTFSP	ATGAATCTCTTGGATCCCTTCATGAAGATGACAGAAGAGCAAGATAAG---TGCATGTCCGGGGCTCCAGCCCCAAC
XeSilTFS9	ATGAATCTCTTGGATCCCTTCATGAAGATGACAGAAGAGCAAGATAAG---TGCATGTCCGGGGCTCCAGCCCCAAC
BuGarS	ATGAATCTCTTGGATCCCTTCATGAAGATGACAGAAGAGCAAGATAAG---TGCCTGTCTGGGGCCCCAAGCCCTTCC
RhMarS	ATGAATCTCTTGGATCCCTTCATGAAGATGACAGAAGAGCAAGATAAG---TGCCTGTCTGGGGCCCCTAGCCCTTCC
GlRugSAA	ATGAATCTATTGGATCCTTTCTTAAAGATGACAGAAGAGCAAGATAAG---TGCCTATCTGGGGCACCAGCCCTAGC
PlWals	ATGAATCTCCTAGACCCCTTCATGAAAATGACCGAGGAGCAGGAGAAG---TGCCTGTCTGGAGCCCCCAGCCCTCC
ScCanS1	ATGAATCTCCTCAACCCCTTCGTCAAAATGACAGAGGGACACGAGAAG---ACGCTCTCCGACGTGCCAGCCCGAGC
DaRerHBTFS	ATGAATCTCCTCGACCCCTACCTGAAGATGACGGATGAGCAAGAGAAG---TGTCTGTCTGATGCACCCAGTCCGAGC
MoAlbHBTf1	ATGAATCTCCTCGACCCCTTACCTGATGATGACGGAGGAACAAGACAAG---TGTCTCTCTGATGCCCGAGCCCGAGC
OrNilTFS9a	ATGAATCTCCTCGACCCCTACCTGAAGATGACGGAGGAACAAGACAAG---TGTCTCTCTGACGCCCCGAGCCCGAGC
GaAcuTFS9a	ATGAATCTCCTCGACCCCTTACCTGAAGATGACGGAGGAACAAGACAAG---TGTCTCTCCGACGCCCCGAGCCCGAGC
XiMacTFS9a	ATGAATCTCTCTCGATCCCTACCTGAAGATGACGGAGGAACAAGACAAG---TGTCTCTCTGACGCCCCGAGCCCGAGC
TaRubTFS9b	ATGAATCTCCTCGATCCTTACCTGAAGATGACGGAGGAACAAGATAAG---GGTCTCTCTGACGCCCCGAGCCCGAGC
TeNigTFS9a	ATGAATCTCCTCGATCCTTATCTGAAGATGACGGAGGAACAAGATAAG---GGTATGTCTGACGCCCCGAGTCCGAGC
OrLatSCC1	ATGAATCTCCTCGACCCCTTACCTGAAGATGACGGAGGAACAAGACAAG---TGTCTCTCTGACGCCCCGAGCCCGAGC
AsMexTFS9a	ATGAATCTCCTGGACCCCTTCTTGAAGATGACGGACGAGCAAGACAAG---GGTCTGTCCGCCGCGCCGAGCCCCAGC
GaMorS1	ATGAATCTCCTCGACCCCTTCTTGAAGATGACGGAGGAACAAGAAAAG---TGTCTTTCGGACGTCCCGAGTCCGAGC
MoAlbHBTFS	ATGAATCTCCTCGACCCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCTGACGCTCCAGTCCAGT
OdBonTFS	ATGAATCTCCTCGATCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCCGACGCTCCAGCCCCAGC
PoRetS	ATGAATCTCCTCGACCCCTTACCTGAAGATGACCGAAGAACAGGAGAAA---TGTCACTCCGACGCTCCAGCCCCAGC
XiMacTFS9b	ATGAATCTCCTCGACCCCTTACCTGAAGATGACAGAAGAACAGGAGAAA---TGTCACTCCGACGCTCCAGCCCCAGC
EpCois2	ATGAATCTACTCGACCCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCTGACGCTCCGAGTCCAGC
TaRubTFS9a	ATGAATCTCCTCGACCCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCCGACGCTCCAGCCCCAGC
TeNigTFS9b	ATGAATCTCTCTGACCCCTACCTGAAAATGACAGAAGAACAGGAGAAG---TGTCACTCCGACGCTCCAGCCCCAGC
OrNilTFS9b	ATGAATCTCCTCGACCCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCTGACGCTCCAGCCCCAAGC
CiMonTFS9	ATGAATCTCCTCGATCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCTGACGCTCCAGCCCCAAGT
CySemSHB	ATGAATCTCCTCGACCCGTACCTGAAGATGACAGATGAACAGGAGAAG---TGTCACTCTGACGCTCCGAGCCCCTGC
OrLatSCC	ATGAATCTCCTCGATCCATACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCCGACGCTCCAGTCCAGC
GaAcuTFS9b	ATGAATCTCCTCGACCCCTTACCTGAAGATGACAGAAGAACAGGAGAAG---TGTCACTCTGACGCTCCAGTCCAGC
SaSalTFS2	ATGAATCTACTCGACCCCTTCTTGAAGATGACAGACGAACAGGAGAAG---TGTCTCTCTGACGCTCCAAGCCCCAGC
GaMorS2	ATGAATCTACTCGACCCCTTACCTTAAAATGACAGAAGAACAGGAGAAGTGTGTCACTCTGACGCTGCCAAGCCCCAGC
AsMexTFS9b	ATGAATCTCCTCGACCCCTACCTGAAGATGACCGACGACCGGGACAAG---TGTCTCCGCGACGCCCCGAGCCCCGGT
ClGarS	ATGAATCTCCTCGAGCCTTACCTGAAGATGACCGACGAGCAGGACAAA---TGTCTCTCCGACGCGCCGAGTCCGAGC
CyCarHTF13	ATGAATCTCTTGCATCCTACCTGAAAATGAGCGACGAGCAGGACAAG---GGTCTCTCCGACGCGCCAGCCCCAGC
ClGarS1	ATGAATCTCCTCGACCCCTTCTTGAAGATGACGGACGAGCAAGACAAG---AGTCTGTCCGACGCCCCGAGTCCGAGC
DaRerHBTf1	ATGAATCTCCTCCAGCGCGGGCTGAAGATG-----AGTGTGTCCGAGCTCCAGCCCCAGT

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HoSapSSDR3	ATGTCC---GAGGACTCC---GCGGGCTCGCCC---TGCCCGTCG---GGCTCCGGC-----TCGGACACC
MuMusSCG1	ATGTCC---GAGGACTCG---GCTGGTTCGCCC---TGTCCCTCG---GGCTCCGGC-----TCGGACACG
CaLupS1	ATGTCC---GAGGACTCG---GCGGGCTCGCCC---TGCCCTTCG---GGCTCCGGC-----TCGGACACC
GaGalSTF2	ATGTCC---GATGACTCC---GCGGGGTCCCC---TGCCCTTCC---GGATCCGGC-----TCGGACACG
CoJapSSDRY	ATGTCC---GATGACTCC---GCCGGGTCTCCT---TGTCCCTCC---GGATCCGGC-----TCGGACACG
AlMisS1	ATGTCC---GATGACTCT---GCAGGCTCTCCC---TGCCCTTCT---GGCTCCGGA-----TCGGACACG
TrScrHCC	ATGTCC---GACGACTCC---GCGGGGTCCCC---TGCCCTTCT---GGTTCGGGA-----TCGGACACG
LeOliS	ATGTCC---GACGACTCC---GCGGGGTCCCC---TGCCCTTCT---GGTTCGGC-----TCGGACACT
AnPlaSSDRY	ATGTCC---GATGACTCC---GCCGGGTCCCC---TGCCCTTCT---GGATCCGGC-----TCGGACACG
LaChaTFS9	ATGTCC---GAGGACTCT---GCGGGGTCCCC---TGTCACTCG---GGCTCAGGA-----TCAGACACT
XeLaeTFS1	ATGTCC---GACGACTCG---GCAGGTTCCCCA---TGTCCCTCT---GGCTCCGGC-----TCCGACACG
BuBufTFSP	ATGTCC---GAGGACTCG---GCTGGCTCCCCA---TGCCCTTCC---GGCTCTGGC-----TCCGACACG
XeSilTFS9	ATGTCC---GAGGACTCG---GCTGGCTCCCCA---TGCCCTTCC---GGCTCTGGC-----TCCGACACG
BuGarS	ATGTCT---GAGGACTCT---GCTGGCTCCCTT---TGCCCTTCT---GGCTCAGGC-----TCAGATACT
RhMarS	ATGTCT---GAGGACTCT---GCTGGCTCCCTT---TGCCCTTCT---GGCTCAGGC-----TCAGATACT
GlRugSAA	ATGTCT---GAGGACTCA---GCTGGCTCCCC---TGCCCTTCT---GGTCTGGA-----TCAGACACA

PlWals ATGTCC---GAGGACTCG---GTGGGCTCGCCC---TGCCCCTCG---GGCTCCAGC-----TCGGACGCC
 ScCanS1 ATGTCCGAGGAGGAATCT---TCCGATTCCCC---TGCGGTTC---GGGGCTGGC-----TCCGACGCC
 DaRerHBTFS ATGTCC---GAGGACTCC---GCGGGCTCGCCC---TGCCCCTCC---GCCTCGGGC-----TCAGACACT
 MoAlbHBTFS1 ATATCC---GAAGACTCC---GCGGGCTCCCC---TGCCCATCT---GGTCCGGC-----TCCGACACG
 OrNilTFS9a ATGTCT---GAGGACTCT---GCGGGCTCCCC---TGCCCCTCC---GGCTCGGGC-----TCCGACACC
 GaAcuTFS9a ATGTCC---GAGGACTCC---GCGGGATCTCCG---TGCCCCTCC---GGCTCGGGC-----TCCGACACA
 XiMacTFS9a ATGTCC---GAGGACTCG---GCGGGTCCCC---TGCCCCTCC---GGCTCGGGG-----TCCGACGCC
 TaRubTFS9b ATGTCT---GATGACTCC---GCGGGCTCTCCG---TGCCCCTCC---GGTTCGGGG-----TCAGACACG
 TeNigTFS9a ATGTCC---GAGGACTCC---CCGGGCTCTCCG---TGTACGTCT---GGCTCAGGG-----TCAGACACA
 OrLatSCC1 ATGTCC---GAGGACTCC---GCGGGATCCCCGCCAGCCCCTCC---GGTCCGGC-----TCCGACACC
 AsMexTFS9a TTGTCC---GAGGACTCC---GCGGGCTCCCC---TGCCCCTCC---GCCTCCGGA-----TCCGACCCG
 GaMorS1 ATGTCA---GAGGATTCT---ACGGGCTCGCCG---TGCCCCTCC---AGCTCGAGC-----TCCGACACC
 MoAlbHBTFS ATGTCT---GAGGACTCC---GCAGGCTCGCCG---TGCCCCTCC---GGGTCCGGT-----TCGGATAAC
 OdBonTFS ATGTCT---GAAGACTCC---GCGGGCTCGCCG---TGCCCCTCC---GGTCCGGT-----TCGGACACT
 PoRetS ATGTCT---GAAGACTCA---GCTGGCTCGCCG---TGCCCCTCC---GGTCCGGT-----TCGGACACC
 XiMacTFS9b ATGTCT---GAAGACTCA---GCGGGCTCGCCG---TGCCCCTCC---GGTCCGGT-----TCGGACACC
 EpCois2 ATGTCT---GAGGACTCC---GCAGGCTCGCCG---TGCCCCTCC---GGGTCCGGT-----TCGGACACT
 TaRubTFS9a ATGTCC---GAGGACTCC---GCGGGCTCTCCG---TGCCCCTCC---GGTCCGGC-----TCGGACACT
 TeNigTFS9b ATGTCC---GAGGACTCC---GCGGGCTCTCCG---TGCCCCTCC---GGTCCGGC-----TCGGACACT
 OrNilTFS9b ATGTCT---GAGGACTCC---GCGGGCTCGCC---TGTCCGTCC---GGGTCCGGT-----TCGGACACT
 CiMonTFS9 ATGTCT---GAGGACTCC---GCGGGCTCGCC---TGTCCGTCC---GGTCCGGT-----TCGGACACT
 CySemSHB ATGTCT---GACGACTCT---GCCGGCTCGCCC---TGTCCATCA---GGTCCGGT-----TCGGACACC
 OrLatSCC ATGTCT---GAGGACTCC---GCAGGTTCCGCT---TGTCCGTCC---GGTCCGGT-----TCGGACACC
 GaAcuTFS9b ATGTCC---GAGGACTCC---GCAGGCTCACCG---TGC---TCC---GTGTCCGGT-----TCGGACACT
 SaSalTFS2 ATGTCT---GACGATTCC---GTCGGCTCGCCG---TGCCCCTCC---GGTCCGGT-----TCGGACACC
 GaMorS2 ATGTCTGAAGAAGACTCC---GTTGGCTCTCCT---TGCCCCTCC---GGTCTGGG-----TCAGACACC
 AsMexTFS9b ATGGATTCCGAGGACTCCGGCGCCGCTCCCC---TGCCCCTCC---GGTCCGGC-----TCGGACACG
 ClGarS ATGTCC---GAAGACTCG---GCAGCCTCCCC---TGTCCGTCT---GGTTCGGC-----TCCGACACC
 CyCarHTF13 ATGTCC---GAGGATTCC---GCCGGTCTCCG---TGTCCGTCC---GGATCGGGC-----TCGGACACC
 ClGarS1 ATGTCC---GAGGATTCC---GCGGGTCTCCG---TGTCCCTCC---GCCTCCGGTTCTGGCTCGTGC---TCGGACGTTG
 DaRerHBTFS1 CTTTCC---GAGGACTCC---GCCGGCTCTCCG---TGCGCCTCCGCCGGCTCGGGA-----TCGGACAGC

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HoSapSSDR3 GAGAAC-----ACGCGG---CCCCAGGAGAACACGTTCCCCAAGGGCGAG---CCC-----GATCTGAAG
 MuMusSCG1 GAGAAC-----ACCCGG---CCCCAGGAGAACACCTTCCCCAAGGGCGAG---CCG-----GATCTGAAG
 CaLupS1 GAGAAC-----ACGCGG---CCCCAGGAGAACACGTTCCCCAAGGGCGAG---CCG-----GACCTGAAG
 GaGalSTF2 GAGAAC-----ACCCGTCCTCCTCAAGAGAAACACCTTCCCCAAGGGCGAC---CCG-----GACCTGAAG
 CoJapSSDRY GAGAAC-----ACCCGA---CCTCAAGAAAACACCTTCCCCAAGGGCGAC---CCG-----GACCTGAAG
 AlMisS1 GAGAAC-----ACCCGG---CCCCAAGAAAACACCTTCCCCAAGGGGGAC---CCG-----GACCTCAAG
 TrScrHCC GAGAAC-----ACCAGA---CCGCAAGAAAACACTTTCCCCAAGGGCGAT---CCG-----GATCTGAAG
 LeOliS GAGAAC-----ACCAGA---CCGCAAGAAAACACTTTCCCCAAGGGCGAT---CCG-----GATCTGAAG
 AnPlaSSDRY GAGAAC-----ACCAGA---CCCCAAGAAAACACCTTCCCCAAGGGCGAC---CCG-----GACCTGAAG
 LaChaTFS9 GAGAAC-----ACCAGA---CCTCAGGAGAACACCTACTCCAATGGGGAC---TTG-----GAGATGAAG
 XeLaeTFS1 GAGAAC-----ACCAGA---CCCCAAGAAAACACTTTCCCCAAGGGGGAC---CAG-----GAGCTGAAG
 BuBufTFSP GAGAAC-----ACCAGA---CCCCAAGAGAACACTTTCCCCAAGGGGGAC---CCG-----GAGCTGAAG
 XeSilTFS9 GAGAAC-----ACCAGA---CCCCAAGAGAACACTTTCCCCAAGGGGGAC---CCG-----GAGCTGAAG
 BuGarS GAGAAC-----ACCAGA---CCTCAAGAGAACACTTTCCCCAAGGGGGAT---CCT-----GACATGAAG
 RhMarS GAGAAC-----ACCAGA---CCTCAAGAGAACACTTTCCCCAAGGGGGAT---CCT-----GACATGAAG
 GlRugSAA GAGAAC-----ACCAGA---CCCCAAGAGAACACTTACCAAGGGGGAC---CAG-----GACCTGAAG
 PlWals GAGAAC-----ACCCGG---CCCATGGAGAACGGCTTCCCCAAGGGCGAGTGCAG-----GAGCTGAAG
 ScCanS1 GAGAAC-----ACGAAA---CCCGGCGAGAACCGG---CAGGGCGAC---CCGTGCGCCCAGAGCCTGGAT
 DaRerHBTFS GAGAAC-----ACGCGC---CCGGCGGAGAACAGCCTCCTGGCTGCAGACGGGACG---CTCGGAGACTTCAAG
 MoAlbHBTFS1 GAGAAC-----ACCCGG---CCGTCCGAGAACGGGCTGCTCAGAACGGACGGAACC---CTAAGCGACTTCAAG
 OrNilTFS9a GAGAAC-----ACCCGG---CCGTCCGAGAACGGGCTGCTCAGAGCGGACGGATCT---CTGGGCGACTTCAAA
 GaAcuTFS9a GAGAAC-----ACCCGG---CCATCTGAGAACGGGCTACTCGGTCTAGAT-----GGAGAGTTTAAG
 XiMacTFS9a GAGAAC-----ACGCGG---CCGTCCGAGAACCGCTGCGGCGCGGACGCGGCGCTGCTGGGCGACTTCAAG
 TaRubTFS9b GAGAAC-----ACCCGG---CCGTCCGAGAACGGGCTGATGCGGGCGGAC-----GGAGACCTAAAG
 TeNigTFS9a GAGAAC-----ACCCGG---CCGTCCGAGAACGGGCTGCTGCGGGCGGAC-----GGAGACCTAAAG
 OrLatSCC1 GAGAAC-----ACCCGG---CCGCGGGAAAACGGCCTGATGCGCGCGGACGGAGCT---CTGAGCGACTTCAAG
 AsMexTFS9a GACCGC---GCCGCC---GCCGAGAGCCGC-----CTGACGACTTCAAG
 GaMorS1 GAGAAC-----ACGAGA---CCCTCAGGAGAACGGCTTCTGCGCGGACGGGGTCAACATCGGCGACTTCAAG
 MoAlbHBTFS GAGAAC-----ACCCGA---CCGTCCGAGAACCACCTCCTCAGGGGTCCGGAC-----TACAAG
 OdBonTFS GAAAAT-----ACCCGA---CCGTCTGACAACCACCTCCTTGGAGGTCCAGAC-----TACAAG
 PoRetS GAGAAC-----ACCCGG---CCGTCCGACAACCACCTCCTCAGGGGTCCGGAC-----TACAAG
 XiMacTFS9b GAGAAC-----ACCCGG---CCGTCCGACAACCACCTCCTCAGGGGACCGGAC-----TACAAG
 EpCois2 GAGAAC-----ACCCGG---CCGTCCGACAACCACCTTCTCTAGGTCAAGAC-----TACAAG
 TaRubTFS9a GAGAAC-----ACCAGA---CCGTCCGACAACCACCTCCTTCTGGGTCCAGAC-----TACAAG
 TeNigTFS9b GAGAAC-----ACCAGG---CCGTCCGACAACCACCTCCTTCTGGGTCCAGAC-----TACAAG

OrNilTFS9b GAAAAC-----ACTCGT---CCGTCCGACAACCACCTCCTCATGGGTCAAGAC-----TATAAG
 CiMonTFS9 GAAAAC-----ACTCGT---CCGTCCGACAACCACCTCCTCATGGGTCCAGAC-----TATAAG
 CySemSHB GAGAAC-----ACCCGT---CCCACCGACAACCACCTCCTCGGGGGTCTGAC-----TACAAG
 OrLatSCC GAAAAC-----ACCCGG---CCGTCCGACAACCATCTCATCAGGGGGCCGGAC-----TACAAG
 GaAcuTFS9b GAGAAC-----ACCCGG---CCGTCCGACAACCACCTCCTCCTGGGTGCAGAC-----TACAAG
 SaSalTFS2 GAGAAT-----ACCAGG---CCGTCCGATAATCATCTCTTACTGGGTCCAGATGGCGTGCTCGGCGAATTCAAG
 GaMorS2 GAGAAC-----CACCGG---CCGTCCGACAACCACCTCCTCTTAGGACAGGACCATCCTATGGGTGAATACAAG
 AsMexTFS9b GAAAAC-----ACGCGG---CCAACCGACATCCAC-----GACGAT-----TTTAAG
 ClGarS GAGAAC-----ACGCGGCCGCCGTCCGAGAATCGG-----TTCAAG
 CyCarHTF13 GAGAAC-----ACCCGC---CCGGAGGAGCAC-----CTGGGAGAGTTTAAG
 ClGarS1 GAGACCGGCGGTGGCGTGCGC---GCGCGGACGTCGGC-----GGCGAGCTGAAA
 DaRerHBTf1 GAGACC-----CCCCGCGCGGAGCCGCCGCTG-----

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HoSapSSDR3 AAG-----GAGAGCGAGGAGGAC---AAGTTCCCCGTGTGCATCCGCGAGGCGGTGAGCCAGGTGCTC
 MuMusSCG1 AAG-----GAGAGCGAGGAAGAT---AAGTTCCCCGTGTGCATCCGCGAGGCGGTGAGCCAGGTGCTG
 CaLupS1 AAG-----GAGAGCGAGGAGGAC---AAGTTCCCCGTGTGCATCCGCGAGGCGGTGAGCCAGGTGCTC
 GaGalSTF2 AAG-----GAAAGCGACGAGGAC---AAATTCCCCGTGTGCATCCGCGAGGCGGTGAGCCAGGTGCTC
 CoJapSSDRY AAG-----GAGAACGACGAGGAC---AAATTCCCCGTGTGCATCCGCGAAGCTGTGAGCCAGGTGCTC
 AlMisS1 AAA-----GACAGCGACGAGGAC---AAGTTCCCCGTGTGCATCCGGGAGGCTGTCAGCCAGGTCTC
 TrScrHCC AAA-----GAGAGCGACGAGGAC---AAATTCCCGGTGTGCATCCGAGAGGCGGTGAGCCAGGTCTC
 LeOliS AAA-----GAGAGCGACGAGGAC---AAATTCCCGGTGTGCATCCGAGAGGCGGTGAGCCAGGTCTC
 AnPlaSSDRY AAG-----GAGAGCGACGAGGAC---AAGTTCCCGGTGTGCATCCGAGAGGCGGTGAGCCAGGTGCTC
 LaChaTFS9 AAA-----GAGACAGACGAAGAC---AAATTCCCAGTCTGCATCCGCGAAGCTGTGAGCCAGGTCTC
 XeLaeTFS1 AAG-----GAGACGGAGGATGAG---AAGTTCCCCGTGTGCATCAGAGAAGCGGTGAGCCAGGTGTTG
 BuBufTFS9 AAG-----GAGACAGAGGACGAA---AAGTTTCTGTGTGCATCAGAGAGGCGGTGAGCCAGGTGCTG
 XeSilTFS9 AAG-----GAGACAGAGGACGAA---AAGTTTCTGTGTGCATCAGAGAGGCGGTGAGCCAGGTGCTG
 BuGarS AAG-----GAAAACAGAGGATGAA---AAGTTCCCTGTCTGCATCAGAGAGGCGGTGAGCCAGGTGCTG
 RhMarS AAG-----GAAAACAGAGGATGAA---AAGTTCCCTGTCTGCATCAGAGAGGCGGTGAGCCAGGTGCTG
 GlRugSAA AAG-----GAGACAGAGGATGAG---AAGTTCCCTGTCTGCATCAGAGAGGCGGTGAGCCAGGTGCTG
 PlWals AAG-----GAGAACGAGGAAGAC---AAGTTCCCCGTGTGCATCCGCGAGGCGGTGAGCCAGGTGCTG
 ScCanS1 TCC-----AAAAAGGACGACGAC---AAGTTCCCGCGGTGTATCCGCGAGGCGGTGAGCCAGGTGCTG
 DaRerHBTFS AAG-----GACGAA---GAGGAC---AAGTTCCCGGTGTGCATCCGAGAGGCGGTGTCCAGGTGCTG
 MoAlbHBTf1 AAG-----GACGAG---GACGAT---AAGTTTCCCGCATGTATCCGCGAAGCTGTGTCCAGGTGCTC
 OrNilTFS9a AAG-----GACGAG---GAAGAC---AAGTTTCCCGCTTGCATCCGCGAAGCCGTGTCCAGGTGCTC
 GaAcuTFS9a AAG-----GATGAG---GACGAT---AAATTTCCCGCTTGCATCCGCGAGGCGGTGTCCAGGTGCTC
 XiMacTFS9a AAG-----GACGAG---GACGAT---AAGTTCCCGCGTGCATCCGCGAGGCGGTGTCCAGGTGCTG
 TaRubTFS9b AAG-----GATGAG---GAAGAC---AAGTTTCCAGCGTGCATTCGCGATGCCGTGTCCAGGTCTC
 TeNigTFS9a AAA-----GACGAG---GAGGAC---AAGTTCCAGCGTGCATCCGCGACGCGGTGTCCAGGTCTC
 OrLatSCC1 AAG-----GACGAA---GACGAC---AAGTTTCCCGCGTGCATCCGGGAGGCGGTGTCTCAGGTGCTG
 AsMexTFS9a AAG-----GACGAGGTGGACGAC---AAGTTCCCGGTGTGCATCCGCGAGGCGGTGAGCCAGGTGCTC
 GaMorS1 AAG-----GACGAG---GAGGAT---AAGTTTCCCGTGTGCATCCGCGAGGCGGTGTCCAGGTGCTC
 MoAlbHBTFS AAG-----GAGGGCGAAGAAGAA---AAGTTCCCGGTGTGTATCAGAGATGCAGTGTCCAGGTATTG
 OdBonTFS AAG-----GAGGGCGAAGAAGAA---AAGTTCCCGGTGTGTATCAGGGATGCGGTGTCCAGGTGTTA
 PoRetS AAG-----GAGGGCGAGGAAGAG---AAGTTCCCGGTGTGCATCAGAGACGCGGTGTCCAGGTGCTG
 XiMacTFS9b AAG-----GAGGGCGAGGAAGAG---AAGTTCCCGGTGTGCATAAGAGATGCGGTGTCCAGGTGCTG
 EpCois2 AAG-----GAGGGCGAAGAAGAG---AAGTTCCCGGTGTGTATCAGAGATGCGGTGTCCAGGTGTTG
 TaRubTFS9a AAG-----GAGAACGAAGAAGAG---AAGTTCCCGGTGTGCATCAGGGATGCGGTGTCCAGGTGCTG
 TeNigTFS9b AAG-----GAAAACGAAGAAGAG---AAGTTCCCGGTGTGTATCAGAGATGCGGTGTCCAGGTGCTG
 OrNilTFS9b AAG-----GAAACCGAAGAGGAA---AAGTTCCCGGTGTGTATCAGAGACGCGGTGTCTCAGGTGTTG
 CiMonTFS9 AAG-----GAAAAGCGAAGAGGAG---AAGTTCCCGGTGTGTATCAGAGATGCGGTGTCTCAGGTGTTG
 CySemSHB AAA-----GAGGGCGAAGAGGAG---AAGTTTCTGTCTGCATCAGAGATGCAGTGTCCAGGTGCTG
 OrLatSCC AAA-----GAGGGTGAAGAAGAG---AGGTTCCCGGTGTGCATTAGAGACGCGGTGTCCAGGTGCTC
 GaAcuTFS9b AAA-----GAGGGCGAAGAAGAA---AAGTTCCCGGTGTGCATCAGAGATGCGGTGTCCAGGTGTTG
 SaSalTFS2 AAG-----GCTGACCAAGAC---AAGTTCCAGTATGTATCAGAGATGCGGTGTCTCAGGTGCTG
 GaMorS2 AAG-----GAGGCGGAGGAAGAG---AAGTTCCCGGTGTGCATTAGAGATGCCGTGTCCAGGTGCTG
 AsMexTFS9b AAG-----GAC---GATGAGGAA---AAGTTCCCGTCTGCATCCGGGACGCAAGTGTCCAGGTGCTG
 ClGarS AAA-----GACGAAGAGGATGAAAACAAGTTTCCCGTCTGCATCCGCGACGCGGTGTCCAGGTGCTC
 CyCarHTF13 AAG-----GACGAGGAC---AAGTTCCCGGTGTGTATCAGGGACGCGGTGTCTCAGGTGCTG
 ClGarS1 AAGTTGGACGGGGAGGACGAGCACGAGAACAACGAGAAGTTCCCGCAGTGCATCCGCGAGGCTGTGTCCAGGTGCTC
 DaRerHBTf1 -----CACCGGGACGAGCAGGAGAAGTTCCCGGTGTGTATCCGGGACGCGGTGTCCAGGTGCTG

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HoSapSSDR3 AAAGGCTACGACTGGACGCTGGTGCCCATGCCCGTGCAGCGTCAACGGCTCCAGCAAGAACAAGCCGCACGTCAAGCGG
 MuMusSCG1 AAGGGCTACGACTGGACGCTGGTGCCCATGCCCGTGCAGCGTCAACGGCTCCAGCAAGAACAAGCCACACGTCAAGCGA
 CaLupS1 AAGGGCTACGACTGGACGCTGGTGCCCATGCCCGTGCAGCGTCAACGGCTCCAGCAAGAACAAGCCGCACGTCAAGCGG
 GaGalSTF2 AAGGGCTACGACTGGACCTGGTGCCCATGCCCGTGCAGGGTGAACGGATCCAGCAAGAACAACCCACGTGAAGCGC
 CoJapSSDRY AAGGGCTACGATTGGACCTGGTGCCCATGCCCGTGCAGGGTGAATGGATCCAGCAAGAACAACCCACGTGAAGCGT

AlMiss1 AAGGGCTACGACTGGACCCTGGTCCCCATGCCGGTCCGGGTGAATGGATCCAGTAAGAACAAGCCGCACGTGAAGAGA
TrScrHCC AAGGGTTACGACTGGACCCTGGTCCCCATGCCGGTCCGGTGTGAACGGATCCAGCAAAAAACAAGCCCCACGTGAAGAGA
LeOliS AAGGGTTACGACTGGACCCTGGTCCCCATGCCGGTCCGGTGTGAACGGATCCAGCAAAAAACAAGCCCCACGTGAAGAGA
AnPlaSSDRY AAGGGCTACGACTGGACCCTGGTGCCCATGCCGGTCCGGGTGAACGGATCCAGCAAAAAACAAGCCCCACGTGAAGAGA
LaChaTFS9 AAGGGATATGACTGGACCCTGGTGCCTATGCCAGTCAGGGTGAATGGATCCAGCAAAAAATAAGCCTCATGTCAAGAGA
XeLaeTFS1 AAGGGATATGATTGGACCCTGGTACCGATGCCAGTCAGAGTAAATGGATCCAGCAAGAACAAGCCCCATGTCAAGAGA
BuBufTFSP AAGGGATATGACTGGACCCTGGTACCGATGCCAGTCAGAGTAAATGGATCCAGCAAGAGCAAGCCTCATGTCAAGAGA
XeSilTFS9 AAGGGATATGACTGGACCCTGGTACCGATGCCAGTCAGAGTAAATGGATCCAGCAAGAGCAAGCCTCATGTCAAGAGA
BuGarS AAGGGATATGACTGGACCCTGGTGCCCATGCCAGTCAGGGTGAATGGATCCAGCAAGAACAAGCCCCACGTCAAGAGG
RhMarS AAGGGATATGACTGGACCCTGGTGCCCATGCCAGTCAGGGTGAATGGATCCAGCAAGAACAAGCCCCATGTCAAGAGG
GlRugSAA AAGGGATATGACTGGACCCTGGTGCCCATGCCAGTCAGGGTCAATGGATCCAGCAAGAACAAGCCGCATGTCAAGAGG
PlWals AAGGGCTACGACTGGACCCTGGTGCCCATGCCCGTGC GG GTGAACGGCTCCAGCAAGAACAAGCCGCACGTCAAGCGG
ScCanS1 AAAGGATACGACTGGACCCTGGTGCCCATGCCGGTCCGGTCAATGGCTCGTCCAAGAACAAGCCTCACGTCAAAAAGA
DaRerHBTFS AAGGGTTACGACTGGACGCTGGTGCCCATGCCGGTGAAGGGTGAACGGGTCCAGCAAAAAACAAGCCGCACGTCAAGAGA
MoAlbHBTf1 AAGGGTTACGACTGGACCCTCGTGCCTATGCCGGTGC GCGT TAAACGGATCTACTAAGAACAAGCCTCACGTGAAGAGA
OrNilTFS9a AAGGGTTACGACTGGACCCTCGTGCCTATGCCGGTGC GCGT TAAACGGATCTACTAAGAACAAGCCTCACGTGAAGAGA
GaAcuTFS9a AAGGGCTACGACTGGACTCTTGTGCCTATGCCAGTCGCGGTTAAACGGGTCTCTAAGAACAAGCCTCACGTGAAAAGA
XiMacTFS9a AAGGGCTACGACTGGACCCTCGTGCCTATGCCCGTGC GCGTGAACGGATCTACCAAGAACAAGCCGCACGTGAAGAGG
TaRubTFS9b AAAGGCTACGACTGGACCCTCGTCCCTATGCCAGTCGCGTAAATGGATCTTCCA AAAACAAGCCTCACGTCAAGAGA
TeNigTFS9a AAAGGCTACGACTGGACCCTCGTCCCATGCCAGTCGCGTAAATGGATCTTCCA AAAACAAGCCTCACGTCAAAAAGA
OrLatSCC1 AAGGGCTACGACTGGACGCTCGTGCCTATGCCGGTGC GCGT TAAACGGATCTACAAAGAACAAGCCGCACGTGAAGAGA
AsMexTFS9a AAGGGCTACGACTGGACGCTCGTGCCTATGCCGGTGC GCGTGAACGGCTCGAGCAAGAACAAGCCGCATGTCAAGAGG
GaMorS1 AAGGGCTACGACTGGACCCTGGTGCCCATGCCCGTGC GCGT TAAACGGATCTAGTAAGAACAAGCCGCACGTGAAGAGA
MoAlbHBTFS AAAGGCTACGACTGGACGTTGGTGCCCATGCCGGTGC GCGTCAACGGCTCAACTAAAAACAAGCCTCATGTCAAAAAGA
OdBonTFS AAGGGTTACGACTGGACTCTTGTGCCCATGCCGGTGC GCGTCAACGGCTCAAGCAAAAACAAGCCTCACGTCAAAAAGA
PoRetS AAGGGCTATGACTGGACGCTCGTACCCATGCCGGTGC GCGTCAACGGCTCCAGCAAGAGCAAGCCGCACGTAAAGAGA
XiMacTFS9b AAGGGCTATGACTGGACTCTAGTACCCATGCCGGTGC GCGTCAACGGCTCCAGCAAGAGCAAAACACACGTAAAGAGA
EpCoiS2 AAGGGCTACGACTGGACGCTGGTGCCCATGCCGGTGC GCGT TAAACGGCTCCAGTAAAAGCAAAACCTCACGTCAAAAAGA
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TeNigTFS9b AAGGGTTACGACTGGACGCTGGTGCCCATGCCGGTGC GCGTCAACGGCTCCAACA AAAATAAAACCTCACGTGAAAAGA
OrNilTFS9b AAGGGTTACGACTGGACGCTCGTGCCTATGCCGGTGC GCGTCAACGGCTCGAGTAAAAGCAAAACCCACGTCAAAAAGA
CiMonTFS9 AAGGGTTACGACTGGACGCTCGTCCCTATGCCGGTGC GGTGTCAACGGCTCGAGTAAAAGTAAACCCACGTCAAAAAGA
CySemSHB AAGGGATACGACTGGACTCTGGTGCCTATGCCAGTCGCGGTTAAACGGCTCGAGTAAAACAAGCCTCATGTGAAAAGA
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GaAcuTFS9b AAGGGCTACGACTGGACTCTGGTGCCCATGCCGGTGC GCGTCAACGGCTCGAGTAAAAGCAAAACCTCACGTCAAGAGA
SaSalTFS2 AAGGGTTACGACTGGACCTTGGTGCCCATGCCCGTCC GAGTGAACGGCTCCAGCAAAAAACAAGCCCCATGTCAAGAGA
GaMorS2 AAGGGCTACGACTGGACCCTGGTGCCCATGCCGGTGC GCGT TAAACGGTTCCAGTAAAATAAAACCCACGTGAAGAGA
AsMexTFS9b AAGGGCTACGACTGGACGCTCGTGCCTATGCCGGTGC GCGT TAAACGGCTCGAGCAAGAACAAGCCGCACGTGAAGAGA
ClGarS AAAGGCTACGACTGGACGCTCGTGCCTATGCCGGTGC GCGT TAAACGGCTCGGGGAAGAGCAAGCCGCACGTGAAGAGG
CyCarHTF13 AAGGGCTACGACTGGACCCTGGTGCCCATGCCTGTGC GAGTGAACGGCGCGCACAGAGCAAGCCGCACGTGAAGAGA
ClGarS1 AAGGGCTACGACTGGACGCTCGTGCCTGTGCCGGTGC GCGTGCACGGCGCCAGCAAAAAACAAGCCGCACGTGAAGCGG
DaRerHBTf1 AAGGGCTACGACTGGTCTCTGGTGCCCATGCCGGTGC GGGTGAAGAGCAAAACCCGCACGTCAAGAGA

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HoSapSSDR3 CCCATGAACGCCTTCATGGTGTGGGCGCAGGCGGCGCAGGAAGCTCGCGGACCAGTACCCGCACCTTGACACAACGCC
MuMusSCG1 CCCATGAACGCCTTCATGGTGTGGGCGCAGGCTGCGCGCAGGAAGCTGGCAGACCAGTACCCGCATCTGCACAACGCC
CaLupS1 CCCATGAACGCCTTCATGGTGTGGGCGCAGGCGGCGCAGGAAGCTCGCGGACCAGTACCCGCACCTTGACACAACGCC
GaGalSTF2 CCCATGAACGCCTTCATGGTGTGGGCCAGGCGGCTCGAAGGAAGCTGGCTGACCAGTACCCGCATCTGCACAACGCC
CoJapSSDRY CCCATGAACGCCTTTATGGTGTGGGCCAGGCGGCTCGAAGGAAGCTGGCTGACCAATACCCGCATCTGCACAACGCC
AlMiss1 CCCATGAATGCCTTCATGGTGTGGGCTCAGGCGCCGAGAAAAGCTGGCTGACCAGTACCCCATCTGCACAACGCC
TrScrHCC CCCATGAACGCCTTCATGGTGTGGGCGCAGGCGGCGGAGGAAGCTGGCGGACCAGTATCCGCATCTGCACAACGCC
LeOliS CCCATGAACGCCTTCATGGTGTGGGCGCAGGCGGCGGAGGAAGCTGGCGGACCAGTATCCGCATCTGCACAACGCC
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XeLaeTFS1 CCAATGAACGCCTTCATGGTCTGGGCGCAGGCTGCAAGGAGGAAGCTGGCTGATCAGTACCCCATCTGCACAATGCA
BuBufTFSP CCCATGAACGCCTTCATGGTGTGGGCGCAGGCTGCAAGGAGGAAGCTGGCCGACCAATACCCCATCTGCACAATGCA
XeSilTFS9 CCCATGAACGCCTTCATGGTGTGGGCGCAGGCTGCAAGGAGGAAGCTGGCCGACCAATACCCCATCTGCACAATGCA
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PlWals CCCATGAACGCCTTCATGGTGTGGGCGCAGGCGGCGGAGGAAGCTGGCCGACCAGTACCCGCACCTGCACAACGCC
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DaRerHBTFS CCGATGAACGCCTTTATGGTGTGGGCGCAGGCGGCGGAGGAAGCTGGCCGACCAGTACCCCATCTGCACAACGCC
MoAlbHBTf1 CCCATGAATGCCTTCATGGTGTGGGCTCAGGCTGCTCGGAGGAAGCTGGCAGATCAGTACCCACACCTGCATAACGCC
OrNilTFS9a CCAATGAACGCCTTCATGGTGTGGGCTCAGGCTGCTCGGAGGAAGCTGGCGGATCAGTACCCGCACCTTCACAACGCC
GaAcuTFS9a CCGATGAATGCCTTTATGGTGTGGGCGCAGGCGGCGGAGGAAGCTGGCTGATCAGTATCCTCACCTGCACAACGCC
XiMacTFS9a CCGATGAACGCCTTCATGGTGTGGGCGCAGGCGGCGGAGGAAGCTGGCGGACCAGTACCCGCACCTTCACAACGCC
TaRubTFS9b CCGATGAACGCCTTTATGGTGTGGGCCAGGCTGCACGGAGGAAGCTGGCGGATCAATACCCCATCTGCATAACGCC

TeNigTFS9a CCGATGAACGCGTTTCATGGTGTGGGCCAGGCCGCCGAGGAAGCTGGCCGATCAGTACCCACACTTGCATAACGCG
OrLatSCC1 CCAATGAACGCCTTTCATGGTGTGGGGCAGGCCGCGCAGGAAAGCTCGCGGATCAGTACCCACCTGCACAACGCG
AsMexTFS9a CCCATGAACGCGTTTCATGGTGTGGGGCAGGCCGCGCAGGAAAGCTGGCCGACAGTACCCACATCTCCACAACGCG
GaMorS1 CCAATGAACGCGTTTCATGGTGTGGGGCAGGCCAGCGCAGGAAAGCTCGCGGACCAGTACCCACATCTCCACAACGCG
MoAlbHBTFS CCCATGAACGCCTTTCATGGTGTGGGCTCAGGCTGCACGGAGGAAGCTGGCTGATCAATACCCACATCTGCACAACGCG
OdBonTFS CCCATGAACGCATTTTCATGGTGTGGGCTCAAGCAGCACGAAGGAAAGCTGGCCGATCAATACCCGCATCTGCACAACGCA
PoRetS CCCATGAACGCCTTTCATGGTTTGGGCTCAGGCCGCGCGGAGGAAGCTGGCCGATCAGTATCCGCATTTGCACAACGCA
XiMacTFS9b CCCATGAACGCCTTTCATGGTTTGGGCTCAGGCCGCGCGGAGGAAGCTGGCCGATCAGTATCCGCATTTGCACAACGCA
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SaSalTFS2 CCCATGAACGCTTTTCATGGTGTGGGCTCAAGCCGCCGAGGAAAGCTGGCCGACCAGTACCCACATCTCCACAATGCA
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CyCarHTF13 CCCATGAACGCGTTTTCATGGTTTGGGCTCAAGCCGCGCGCAGGAAAGCTGGCCGACCAGTATCCACACCTGCACAACGCG
ClGarS1 CCAATGAACGCGTTTCATGGTGTGGGCCAGGCCGCGCGCCGCAAGCTCGCAGACCAGTACCTCACCTGCACAACGCG
DaRerHBTf1 CCCATGAACGCGTTTTCATGGTTTGGGCTCAAGCCGCGCGGAGGAAAGCTGGCCGACCAGTACCCGCACCTGCACAACGCG

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HoSapSSDR3 GAGCTCAGCAAGACGCTGGGCAAGCTCTGGAGACTTCTGAACGAGAGCGAGAAGCGGCCCTTCGTGGAGGAGGCCGAG
MuMusSCG1 GAGCTCAGCAAGACTCTGGGCAAGCTCTGGAGGCTGCTGAACGAGAGCGAGAAGAGACCTTCGTGGAGGAGGCCGAG
CaLupS1 GAGCTCAGCAAGACGCTGGGCAAGCTCTGGAGGCTGCTGAACGAGAGCGAGAAGCGGCCCTTCGTGGAGGAGGCCGAG
GaGalSTF2 GAGCTCAGCAAGACGCTGGGCAAGCTGTGGAGGCTGCTGAATGAGAGCGAGAAGCGTCCCTTCGTGGAGGAGGCCGAG
CoJapSSDRY GAGCTCAGCAAAACGCTGGGCAAGCTGTGGAGGCTGTTGAATGAGAGCGAGAAGCGTCCCTTCGTGGAGGAGGCCGAG
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TrScrHCC GAGCTCAGCAAAACCTGGGCAAACTCTGGAGGTTGCTGAATGAGAGCGAGAAGCGCCCTTCGTGGAGGAGGCCGAG
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BuBufTFSP GAACTCAGCAAGACTCTGGGCAAGTTATGGAGACTTCTGAATGAGGGCGAGAAAAGCGCCCTTCGTGGAGGAAAGCAGAG
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OrLatSCC GAGCTCAGCAAAACTCTTTGGAAAATTTGGAGGCTCCTTAATGAGGTGAGAGAAGCGGCCGTTTCGTGGAGGAGGCTGAG
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CyCarHTF13 GAGCTCAGCAAGACCCTCGGAAAACCTCTGGAGGTTACTGAACGAGGGCGAGAAGCGTCCGTTTCGTGGAGGAGGCCGAG
ClGarS1 GAGCTGAGCAAAACCCCTGGGCAAGTTATGGAGATTGCTGAACGATACAGAGAAGCGTCCATTCGTAGAAGAGGCTGAG
DaRerHBTf1 GAGCTCAGCAAAACACTCGGCAAACCTCTGGAGACTGCTGAACGAGGGCGAGAAGCGTCCGTTTGTGGAGGAGGCCGAG

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HoSapSSDR3 CGGCTGCGCGTGCAGCACAAGAAGGACCACCCGATTACAAGTACCAGCCCGCGGCGGAGGAAAGTCGGTGAAGAACGGG
MuMusSCG1 CGGCTGCGCGTGCAGCACAAGAAAGACCACCCGATTACAAGTACCAGCCCGCGGCGGAGGAAAGTCGGTGAAGAACGGA
CaLupS1 CGGCTGCGCGTGCAGCACAAGAAAGACCACCCGATTACAAGTACCAGCCCGCGGCGGAGGAAAGTCGGTGAAGAACGGC
GaGalSTF2 CGGCTGCGGGTGCAGCACAAGAAGGACCACCCGACTACAAGTACCAACCACGCAGGAGGAAAGTCGGTGAAGAACGGG
CoJapSSDRY CGGCTGCGGGTGCAGCACAAGAAGGACCACCCGACTACAAGTACCAACCACGCAGGAGGAAAGTCAGTGAAGAACGGG
AlMisS1 CGGCTGCGGGTGCAGCACAAGAAGGACCACCCGACTACAAGTACCAGCCCGGAGGAGAAAAGTCGGTGAAGAACGGG
TrScrHCC AGGCTGCGGGTGCAGCACAAGAAGGACCATCCCGACTACAAGTACCAGCCCGGAGGAGAAAAGTCAGTGAAGAAATGGG
LeOliS AGGCTGCGGGTCCAGCACAAGAAGGACCATCCCGACTACAAGTACCAGCCCGGAGGAGAAAAGTCAGTGAAGAACGGG
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LaChaTFS9 CGACTGAGGGTCCAGCACAAGAAAGACCACCCGATTACAAGTACCAGCCCGGAGGAGAAAAGTCGGTCAAGAACGGG
XeLaeTFS1 AGGCTGAGGGTCCAACACAAGAAGGATCATCCCGACTACAAGTATCAGCCACGGCGCAGAAAAGTCGGTTAAGAATGGG
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XeSilTFS9 AGGCTGCGAATCCAACATAAGAAGGATCATCCAGACTACAAGTACCAGCCACGGCGCAGAAAAGTCGGTAAAGAATGGG
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PlWalS AGACTGCGTGTCCAGCACAAGAAGGACCACCCGACTACAAGTACCAGCCCGCAGGCGGAAAGTCGTGAAGAACGGC
ScCanS1 CGCCTGAGAGTGC AACACAAGGAGGACCACCCGATTACAATAACCAGCCAGGCGGAGAAAAGTCGGTGAAGAACGGG
DaRerHBTfS CGCCTTCGGGTGCAGCACAAGAAAGATCACCCGACTATAAGTACCAGCCCGCGGCGGAGGAAAGTCGGTGAAGAACGGG
OrAlbHBTfS CGCTCCGGGTGCAGCACAAGAAGGATCATCCCGACTACAATAATCAGCCCGCGGCGGAGGAAAGTCGGTGAAGAACGGT
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XiMacTFS9a AGGCTCCGGGTGCAGCACAAGAAGGACCACCCGACTACAAGTACCAGCCCGCGGCGACGGAAGTCGGTGAAGAACGGC
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OdBonTfS CGACTCAGAGTGC AACATAAGAAGGATCACCCGACTACAATAATCAGCCAAGGCGGAGAAAATCTGGTCAAGAATGGT
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CiMonTFS9 CGTTTGAGAGTGC AACATAAGAAGGATCACCCGATTACAATAATCAGCCAAGGCGGAGAAAATCTGTCAAGAACGGG
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GaAcuTFS9b CGTTTGAGAGTCCAGCACAAGAAGGACCACCCGACTACAATAATCAGCCAGGCGGAGAAAATCTGGTAAAAACGGG
SaSalTFS2 CGCTTGAGGGTGC AACACAAGAAAGATCACCCGACTACAAGTACCAGCCAGAAAGGAGAAAATCCGTGAAGAACGGG
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ClGarS1 CGCCTACGCGTGC AACACAAGAAAGATCATCCCGACTACAAGTACCAGCCACGGCGAAGGAAATCAGCCAAGAACGGT
DaRerHBTf1 CGGCTGCGGGTCCAGCATAAGAAGGATCATCCAGACTACAATAACCAGCCAGACGAGGAAATCAGTGAAGAGCGGC

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HoSapSSDR3 CAGGCGGAGGCAGAGGAGGCCACGGAGCAGACGCACATCTCCCCCAACGCCATCTTCAAGGCGCTGCAG---GCCGAC
MuMusSCG1 CAAGCGGAGGCCGAAGAGGCCACGGAACAGACTCACATCTCTCCTAATGCTATCTTCAAGGCGCTGCAG---GCCGAC
CaLupS1 CAGGCGGAGGCCGAGGAGGCCACCGAACAGACGCACATTTCCCCCAACGCCATCTTCAAGGCGCTGCAG---GCCGAC
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CoJapSSDRY CAGTCGGAGCAGGAGGAAAGGCTCCGAGCAGACCCACATCTCCCCCAATGCCATCTTCAAGGCGCTGCAG---GCCGAC
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TrScrHCC CAGTCGGAGCAGGAGGAGGGCTCCGAGCAAACACACATCTCCCCCAATGCCATTTTCAAGGCGCTGCAG---GCCGAT
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LaChaTFS9 CAGAACGAGCAAGAGGAGGGCACCAGCAGACCCACATCTCCCCCACTGCTATCTTCAAGGCGCTACAG---GCTGAC
XeLaeTFS1 CAGACAGAACAAGAGGATGGTGCTGAGCAAACCCACATCTCCCCCAATGCAATTTTCAAGGCGCTACAG---GCTGAC
BuBufTFSP CAGTCAGAACAAGAGGACGGCGCTGAGCAAACCCACATCTCCCCCAATGCCATTTTCAAGGCGCTGCAG---GCTGAT
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GlRugSAA CAGTCTGAGCAAGAGGACGGTCCGACCAGACCCACATCTCTCCCAACGCCATCTTCAAGGCTCTGCAG---GCCGAC
PlWals CAGGCGGAGACGGAGGAGGGCTCCGAGCAAACGCACATCTCTCCCAACGCCATCTTCAAGGCGTGCAG---GCCGAC
ScCanS1 CAGGGGGAGAGCGAGGAGGGAGCCGAGCAGACGCACATCACCCCCAACGCCCTCTTCAAAGCCCTGCAG---GCGGAT
DaRerHBTFS CAGAGCGAATCTGAAGACGGCAGCGAAACAGACCCACATCTCGCCCAACGCCATCTTCAAAGCGCTCCAGCAGGCGGAC
MoAlbHBTf1 CAGAGCGAGCCTGAGGACGGCAGCGAGCAGACGCAC-----AATGCCATCTTCAAAGCGCTCCAACAGGCGGAC
OrNilTFS9a CAAAGCGAGGGCGAGGACGGGAGCGAGCAGACGCACATTTCCCAACGCCATCTTCAAAGCTCTCCAGCAGGCGGAC
GaAcuTFS9a CAGAGCGAGTCCGAGGACGGCAGTGCAGCAGACGCACATTTCCCAACGCCATCTTCAAAGCTCTCCAGCAGGCGGAC
XiMacTFS9a CAGAGCGAGGCGGAGGACGGCGGGCAGCAGACGCACATCTCCACCAACGCCATTTTCAAAGCCCTCCAGCAGGCTGAC
TaRubTFS9b CAGAACGAGTCCGACGACGGCAGCGAGCAGACGCACATTTCCCAACGCCATTTTCAAAGCTCTCCAACAGGCGGAC
TeNigTFS9a CAGAACGAGTCCGACGACGGCGGGCAGCAGACGCACATTTCCCAACGCCAATTTTCAAAGCTCTCCAGCAGGCGGAC
OrLatSCC1 GGGAGCGAGGCGGAGGACGGCGGGGAG-----CACATCTCCACCAACGCCATCTTCAAAGCTCTGCAGCAGGCGGAC
AsMexTFS9a TCTGGCGAGGGGGAGGACGGCTCCGACCATGCTCAGTGTGCCTAACGCCATCTTCAAAGCCCTCCAGCAGGCGGAC
GaMorS1 CAGGGAGAGTCCAGAGACGGCGGGAGCAGACGCACATCACGCCCAACGCCATATTCAAAGGCGTGCAGCAGGCGGAC
MoAlbHBTFS CAAAACGAGCCCGAGGACAGC---GAGCAAACCTCACATCTCTCCAAATGCGATCTTCAAAGGCGTACAGCAGGCGGAC
OdBonTFS CAAAGCGAGCCCGAGGACAAC---GAGCAAACCTCACATCTCTCCAAATGCGATCTTCAAAGCACTTTCAGCAGGCGGAC
PoRetS CAAAATGAATCCGAGGATGGC---GAACAGACGCACATCTCTCCGAACGCAATTTTCAAAGGCGTGCAGCAAGCGGAC
XiMacTFS9b CAAAATGACTCCGAGGATGGC---GAACAGACGCACATCTCTCCGAACGCAATTTTCAAAGGCGTGCAGCAAGCGGAC
EpCois2 CAAAACGACCCCGAGGACGGC---GAGCAAACCCACATCTCTCCAAATGCCATATTCAAAGGCGTGCAGCAGGCGGAT
TaRubTFS9a CAAAACGACCCCGAGGACGGA---GAGCAAACCCACATCTCACCCAATGCCATCTTCAAAGGCGTGCAGCAGGCGGAC
TeNigTFS9b CAAAACGACTCCGAGGACGGA---GAGCAAACCCACATCTCACCCAATGCCATTTTCAAAGGCGTGCAGCAGGCGGAC
OrNilTFS9b CAAAGCGAACCAGGAGGACAAC---GACCAAACCTCATATCTCTCCAAATGCCATTTTCAAAGGCGTGCAGCAGGCGGAC
CiMonTFS9 CAAAGCGAAGCGGAGGACAGC---GAACAACTCACATCTCTCCAAATGCCATTTTCAAAGGCACTGCAGCAGGCGGAC
CySemSHB CAAAATGAAGCAGACGACGGC---GAGCAGACGCACATTTCTCCGAATGCGATCTTCAAAGCCCTGCAGCAGGCGGAT
OrLatSCC CAAAGCGAAGCGGAGGACAGC---GAACAACTCACATCTCTCCAAATGCGATCTTCAAAGGCGTGCAGCAGGCGGAC
GaAcuTFS9b CAAAACGACCCCGAGGACGGC---GAGCAAACCCACATCTCTCCAAATGCCATTTTCAAAGGCTGCAGCAGGCTGAT
SaSalTFS2 CAGAGCGAGCCAGAGGACGGC---GAGCAAACCCACATCTCTCCGGTGACATCTTAAAGCTCTCCAGCAAGCGGAC
GaMorS2 CAGAGCGAGTCCGAAGACGGC---GAGCAAACACACATATCTCCAAATGCCATCTTCAAAGGCGTGCAGCAAGCGGAC
AsMexTFS9b CAGTCCGAGTCCGAGGACGGC---GAGCAGACCCACATCTCGCCCAACGCCATCTTCAAAGCCCTGCAGCAAGCGGAC
ClGarS CAGGGTGAACCCGAGGATAACC---GAGCACACCCACATTTCCCAACGCCATCTTCAAAGCCCTACAGGAGCGGAC
CyCarHTF13 CAGAGCGAGAGCGAGGACGGC---GAGCAGACCCACATCTCACCCAACGCCATCTTCAAAGCCCTGCAGCAGGCGGAC
ClGarS1 CAGGGCGAGGGGGAAGAGGGTCCCGAGCAGACGCACGTCTCCACCAACGCCATCTTCAAAGCACTGCAACAAGCGGAT
DaRerHBTf1 TCAGCAGAGTCTGAAGATGGA---GAGCAGACGCAGATCTCCACCAATGCGCTGTTCAAGCCCTGCAGCGGGCAGAA

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HoSapSSDR3 TCGCCACACTCCTCCTCCGGCATGAGCGAGGTGCACTCCCCCGGGCAGCACTCG---GGGCAATCCCAGGGCCCACCG
MuMusSCG1 TCCCCACATTCTCCTCCTCCGGCATGAGTGAGGTGCACTCCCCGGGGCAGCACTCT---GGGCAATCTCAGGGTCCGCCG
CaLupS1 TCGCCGCACTCCTCCTCCGGCATGAACGAGGTGCACTCCCCCGGCAAGCACTCG---GGGCAATCCCAGGGCCCAGCG
GaGalSTF2 TCCCCGCACTCCTCCTCCAGCATCAGCGAGGTGCACTCCCCCGGGGAGCACTCA---GGGCAGTCCGAGGGCCCCCG
CoJapSSDRY TCCCCACAGTCATCCTCCAGCATCAGCGAGGTGCACTCCCCAGGGGAGCACTCA---GGGCAGTCCAGGGCCCCCTCT
AlMisS1 TCCCCGCACTCCTCCTCCAGCATGAGCGAGGTGCACTCCCCCGGGGAGCACTCT---GGGCAGTCCCAGGGCCCCCG
TrScrHCC TCTCCTCAGTCTTCTCCTCCAGCATGAGCGAGGTGCACTCTCCCGGGGAGCACTCT---GGGCAGTCCCAGGGCCCCCG
LeOliS TCTCCTCAGTCTTCTCCTCCAGCATGAGTGAGGTGCACTCTCCAGGAGAGCATTCA---GGGCAGTCCCAGGGCCCCCG
AnPlaSSDRY TCCCCGCACTCCTCCTCCAGCATCAGCGAGGTGCACTCCCCCGGGGAGCACTCG---GGGCAATCCGAGGGCCCCCG
LaChaTFS9 TCGCCCCACTCTGCTTCAAGTATGAGCGAGGTCCACTCTCCTGGGGAACACTCA---GGCCAGTCCCAGGGCCCCCG
XeLaeTFS1 TCCCCGCACTCCTCCTCCAGCATGAGCGAAGTCCACTCTCCTGGAGAACATTC---GGTCAATCCCAGGGCCCACCA
BuBufTFS9 TCCCCACATTCTGCCTCCAGCATGAGCGAAGTCCACTCTCCTGGAGAACATTC---GGTCAATCCCAGGGCCCACCA
XeSilTFS9 TCCCCACATTCTGCCTCCAGCATGAGCGAAGTCCACTCTCCTGGAGAACATTC---GGTCAATCCCAGGGCCCACCA
BuGarS TCCCCACATTCTGCCTCCAGCATGAGCGAGGTGCACTCCCCAGGGGAGCACTCA---GGTCAATCCCAGGGCCCACCA
RhMarS TCCCCACATTCTGCCTCCAGCATGAGCGAGGTGCACTCCCCCGGGGAGCACTCA---GGTCAATCCCAGGGGCCACCA
GlRugSAA TCGCCGCACTCTGCTTCCAGCATGAGCGAAGTGCATCTCCAGGAGAACACTCA---GGGCAGTCCGAGGGTCCACCA
PlWals TCACCGCACTCATCCTCCGGCATGAGCGAGGTGCACTCGCCCGGAGAGCACTCT---GGCCAGTCCCAGGGTCCACCC
ScCanS1 TCCCCGCACTCCGCCTCCAGCATGAGCGACGTGCACTTCCCCAGGGGAACATTC---GGACAATCTCAAAGGACCACCA
DaRerHBTFS TCGCCC-----GCGTCCAGCATGGGAGAAGTGCATCTCGCCAGCGAACACTCA---GGCCAGTCCCAGGGGCCGCC
MoAlbHBTf1 TCTCCG-----GCCTCCAGCATGGGAGAGGTGCACTTCTCCGAGTGAGCACTCA---GGC---TCCCAGGGGCCCCCT
OrNilTFS9a TCCCCCT-----GCATCCAGCATGGGAGAGGTGCACTTCTCCTGGAGAGCACTCA---GGC---TCCCAGGGTCCCCCT
GaAcuTFS9a TCCCCA-----GCCTCCAGCATGGGAGAGGTGCACTCACCGGGTGAGCACTCA---GGC---TCCCAGGGGCCCCCT
XiMacTFS9a TCCCCC-----GCCTCCAGCATGGGAGAGGTGCACTCCCCCGGGGAGCACTCA---GGC---TCCAGGGTCCCCC
TaRubTFS9b TCCCCA-----GCCTCCAGCATGGGAGAGGTGCACTTCCAGGTGAGCACTCA---GGC---TCTCAGGGCCCTCT
TeNigTFS9a TCCCCG-----GCCTCCAGCATGGGAGAGGTGCACTCTCCAGGTGAGCACTCA---GGC---TCTCAGGGTCTCTC
OrLatSCC1 TCCCCC-----GCCTCCAGCATGGGAGAGGTGCACTCCCCCGGGGAGCACTCA---GGC---TCCAGGCACTCCCCA
AsMexTFS9a TCCCCG-----GCGTCCAGCATGGGAGAGGTGCACTCGCCAGCGAACAAGGA---GGCCAGTCCCAGGGTCCCCCG
GaMorS1 TCCCCG-----GCCTCCAGCATGGGGGACGTGCACTCACCTGGCGAGCACTCA---GGC---TCCCAGGGGCCCCCG
MoAlbHBTFS TCTCCG-----GCGTCCAGTATGGGCGAGGTGCACTCTCCAGGCGACCATTCA---GGTCAATCCCAGGGTCCGCCA
OdBonTFS TCTCCA-----GCGTCCAGTATGGGCGAGGTGCACTCTCCTGGAGAACATTC---GGTCAATCCCAGGGTCCGCCA
PoRetS TCTCCT-----GCGTCCAGCATGGGCGAGGTGCACTCACAGGAGAACATTCG---GGTCAATCCCAGGGACCACCA
XiMacTFS9b TCTCCT-----GCGTCCAGCATGGGCGAGGTGCACTCTCCGGGAGAACATTCG---GGTCAATCCCAGGGACCACCA

EpCois2 TCTCCT-----GCGTCCAGTATGGGCGAGGTGCATTCTCCAGGAGAGCACTCA---GGTCAGTCCCAGGGCCACCG
TaRubTFS9a TCCCCA-----GCCTCGAGTTTGGGCGAAGTTCATTCTCCAGGCGATCACTCA---GGTCAGTCCCAGGGCCCGCCG
TeNigTFS9b TCCCCA-----GCCTCGAGTTTGGGCGAAGTTCATTCTCCAGGCGAGCACTCA---GGTCAGTCCCAGGGCCACCG
OrNilTFS9b TCTCCG-----GCTTCAAGTATGGGCGAGGTGCATTCTCCGGGAGAGCAATTCA---GGTCAGTCCACAGGGTCCACCA
CiMonTFS9 TCTCCG-----GCTTCAAGCATGGGCGAGGTGCATTCTCCAGGAGAGCACTCA---GGTCAGTCCACAGGGTCCACCG
CySemSHB TCCCCCT-----GCGTCCAGTATGGGCGAGGTGCATTCTCCA---GAACATTCA---GGTCAATCCCAAGGTCCACCC
OrLatSCC TCTCCT-----GCGTCCAGCATGGGCGAGGCGACTCTCCAGGAGAACATTCA---GGTCAGTCCACAGGGCCACCA
GaAcuTFS9b TCTCCA-----GCTTCAAGTTCGGGCGAGGTGCATTCTCCAGGAGAGCAATTCA---GGTCCGTCCCAGGGCCCTCCA
SaSalTFS2 TCACCC-----GCGTCCAGCATGGGCGAAGTGCATTCTCCCGGTGAACATTTCAGCAGGCCAGTCCCAGGGCCACCT
GaMorS2 TCCCCA-----ACCTCTAGCATGGGGGAGGTGCATTCTCCCCGGGAGCACTCA---GGTCAGTCCCAAGGCCACCG
AsMexTFS9b TCGCCC-----GCCTCCAGCATGGGCGAAGTGCATTCTCCCCCTCAGACCACTCA---GGTCAATCCCAAGGTCTCTCCA
ClGarS TCTCCC-----GCTTCCAGCATGGGTGAGGTACTCTCTCCGGAGACCACTCA---GGTCAGTCCCAGGGCCCTCCA
CyCarHTF13 TCCCCC-----GCGTCCAGCATGGGCGAAGTGCATTCTCCGGGAGACCACTCA---GGTCAGTCCCAGGGTCCCCCG
ClGarS1 TCTCCA-----GCATCCAGCATGGGAGAGGTGCATTCTCCCCAGCGAGCAGTCA---GGCCAGTCCCAGGGTCCCCCG
DaRerHBTf1 ACACCC-----GACTCCAGCACCGGCGAGCTGCATTCTCTGGAGAACACTCC---GGTCAGTCTCAGGGCCCCCCC

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HoSapSSDR3 ACCCCACCCACCACCCCAAAAACCGACGTG---CAGCCGGGCAAGGCTGAC---CTGAAGCGAGAG-----GGG---
MuMusSCG1 ACCCCACCCACCACCTCCCAAAAACCGACGTG---CAAGCTGGCAAAGTTGAT---CTGAAGCGAGAG-----GGG---
CaLupS1 ACGCCCCCACCACCCCGAAAACCGACGTG---CAGCCGGGCAAGGCTGAC---CTGAAGCGCGAG-----GGC---
GaGalSTF2 ACGCCCCCACCACCCCAAAAACCGACGCTCAGCAGCCGGGCAAGCAGGAC---CTGAAGCGCGAG-----GGC---
CoJapSSDRY ACACCCCCACCACCTCCCAAGACGGACGCTCAGCAGCCGGGCAAGCAGGAC---CTGAAGCGCGAG-----GGC---
AlMisS1 ACACCACCCACGACCCCAAAAACAGACGTC---CAGCCTGGCAAGCAAGAC---CTGAAGCGAGAA-----GGA---
TrScrHCC ACCCCTCCTACTACACCAAAAACAGATGTC---CAGCCTGGGAAGCAAGAC---CTGAAGCGAGAA-----GGG---
LeOliS ACTCCTCCTACTACACCAAAAACAGATGTC---CAGCCTGGGAAGCAAGAC---CTGAAGCAAGAA-----GGG---
AnPlaSSDRY ACGCCCCCACCACCCCAAGACGGACGCG---CAGCCGGGCAAGCAGGAC---CTGAAGCGCGAG-----GGC---
LaChaTFS9 ACTCCCCCTACTACTCCCAAAAACAGATGTC---CAGCCAGGAAAACAGAT---CTGAAACGAGAG-----GTA---
XeLaeTFS1 ACTCCTCCAACTACTCCCAAGACAGATATC---CAGCCTGGAAAAGCCAGAC---CTAAAAGAGGGAG-----GGC---
BuBufTFSP ACTCCTCCAACTACCCCAAGACAGACGTC---CAGCCTGGAAAAGCCAGAC---CTGAAGAGGGAG-----GGC---
XeSilTFS9 ACTCCTCCAACTACCCCAAGACAGACGTC---CAGCCTGGAAAAGCCAGAC---CTGAAGAGGGAG-----GGC---
BuGarS ACTCCACCAACCACCCCTAAAACAGATGTG---CAGCCCGGCAAGCCAGAC---CTGAAGCGCGAA-----GGA---
RhMarS ACTCCACCGACCACCCCTAAAACAGATGTC---CAGCCCGGCAAGCCAGAC---TTGAAGCGTGAA-----GGA---
GlRugSAA ACTCCGCGGACCACCCCTAAAACAGATGTG---CAGCCCGGCAAGCCAGAT---CTGAAACGCGAA-----GGT---
PlWalS ACACCTCCAACTACCCCAAAAACCGACGTT---CAGCCAGGGAAAACCTGAC---CTGAAGCGGGAA-----GGA---
ScCanS1 ACGCCCCCACCACCTCCCAAAAACAGAGGTT---CAGCCTGTAAAACAGAT---CTGAAACGTGAA-----GGT---
DaRerHBTfS ACTCCTCCCACCACCCCGAAAACAGACTGATGTACCTCA---GGCAAAGCTGGAC---CTGAAACGAGAGGCC-----
MoAlbHBTf1 ACCCCTCCCACCACCCCAAGACTGATGTACCTCA---GGCAAAGCTGGAC---CTAAAAGCTGAAGGGGGGCTC---
OrNilTFS9a ACCCCTCCCACCACCCCAAGACTGATGTACCTCA---GGCAAAGCTGGAC---CTAAAAGCTGAAGTAGGCCCTC---
GaAcuTFS9a ACTCCTCCCACCACCCCAAGACTGATGTACCTCG---GGCAAAGCTGGAC---CTAAAAGCTGAAGGTGGCCTC---
XiMacTFS9a ACCCCTCCCACCACCCCTAAGACCGACTTGGCTCA---GGTAAAGACGGAC---CTGAAGCGGAGGGCGGGGCTC---
TaRubTFS9b ACCCCTCCCACCACCCCAAGACTGATGTACCTCA---GTCAAAGATGGAT---CTAAAAGCTGAAGGGCGGCTC---
TeNigTFS9a ACCCCTCCCAGTACCCCAAGACTGATGTACCTCA---GTCAAAGATAGAT---CTCAAACGTGAAGGCAGCCTT---
OrLatSCC1 ACCCCTCCCACCACCCCAAGACGGACTGC---TCA---GCAAAGATGGAC---CTAAAAGCTGAGGGGGGGCTG---
AsMexTFS9a ACTCCCCCACCACCCCAAAAACAGACGTCATCTCA---GGCAAAGCTGGAC---CTTAAAGCGGAGGGC-----
GaMorS1 ACTCCTCCCACCACCCCAAAAACAGACGTCATCTCA---GGCAAAGCTGGAC---CTGAAGCGGAGGCGGGCCTG---
MoAlbHBTfS ACACCCCAACCACCCCAAAAACAGACCTTCTCTCC---AGCAAAGCTGAT---CTGAAGCGTGAG-----GGA---
OdBonTfS ACACCCCAACAACCCCAAGACAGACGTCCTCCACC---AGTAAAGCTGAC---CTAAAAGCTGAG-----GGA---
PoRetS ACACCCCGACAACCCCAAGACAGATCTTCCCTCC---AGTAAAGCTGAC---CTGAAGCGTGAG-----GGC---
XiMacTFS9b ACACCTCCGACAACCCCAAGACAGATCTTCCCTCC---AGCAAAGCTGAC---CTGAAGCGTGAG-----GGC---
EpCois2 ACCACCCCAACCACCCCAAGACAGACTTCCCTCC---AGCAAAGCTGAC---CTGAAAGCTGAG-----GGG---
TaRubTFS9a ACACCCCGACCACCTCCCAAGACGGACTTGGTCTCC---AGCAAAGCTGAT---CTGAAACGTGAG-----GGG---
TeNigTFS9b ACACCCCGACCACCTCCCAAGACAGACCTGGTCTCT---GGCAAAGCTGAT---CTGAAACGAGAG-----GGC---
OrNilTFS9b ACACCCCAACCACCCCAAGACAGACCTTCCCTCC---AGCAAAGCTGAT---CTGAAACGTGAG-----GGG---
CiMonTFS9 ACACCCCAACCACCCCGAAGACAGACCTTCCCTCC---AGCAAACCTGAC---CTGAAGCGTGAG-----GGG---
CySemSHB ACACCCCGACCACCCCTAAAACAGACATGCCCTCC---AATAAAGCCGAA---CTGAAGCGTGAA-----GGG---
OrLatSCC ACACCCCAACAACCCCAAGACAGATCTTCCCTCC---AGCAAAGCTGAC---CTGAAGCGCGAG-----GGC---
GaAcuTFS9b ACACCCCAACCACCCCAAGACAGACCTGCCCTCC---AGCAAAGCTGAC---CTGAAGCGGAGAG-----GGT---
SaSalTFS2 ACACCACCGACCACCCCAAAAACAGACCTGGCTGCG---GGCAAAGCCGAC---CTGAAGCGTGAG-----GGC---
GaMorS2 ACGCCCCCACCACCCCAAGACCGACTGCCCTCAGGGGGCAAGGGGGGAGATCCTGAAGCGCGAGGCTTCCGGG---
AsMexTFS9b ACGCCACCGACAACCCCTAAAACAGACCTTCCCGG---AGCAAACAGAC---CTAAAAGCGCGAG-----GGA---
ClGarS ACTCCCCCACAACCTCCCAAAAACAGATGTTCCAAGT---GTGAAAACCGGAC---CTGAAGCGGAGAG-----GGC---
CyCarHTF13 ACTCCTCCCACGACCCCAAAAACCGACTGCCCTCC---AGCAAAGCGGAT---CTGAAAGCGCGAG-----GGC---
ClGarS1 ACTCCACCCACCACCCCAAAAATTGATGTCTAGGCA---GGCAAAGCTGAG---CTAAAAGCTGAG-----GGA---
DaRerHBTf1 ACACCACCCACCACCCCTAAAACAGATCTGCCGGTGTGAGTAAAGCGGAT---CTGAAGCGGGAGCGGGAGCGGGAC

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HoSapSSDR3 -----CGCCCTTGCCAGAGGGG-----GGCAGACAGCCCCCT---ATCGACTTC
MuMusSCG1 -----CGCCCTCTGGCAGAGGGG-----GGCAGACAGCCCCC---ATCGACTTC

CaLupS1	-----CGCCCCCTGCCCCGAGGGG-----GGCCGACAGCCCCC---ATCGACTTC
GaGalSTF2	-----CCTTTGGCGGAAGGC-----GGCCGCCAACCTCCCCACATCGATTTT
CoJapSSDRY	-----CGCCCTTTGGCAGAAGGT-----GGCCGCCAACCTCCCCACATCGATTTT
AlMisS1	-----CGCCCCCTGCAAGAGGGA-----GGCGCCAGCCGCCCCACATTGACTTT
TrScrHCC	-----CGCCCTTTGCAGGAAGGA-----GGAAGACAGCCGCCCCACATTGACTTC
LeOliS	-----CGCCCTTTGCAGGAAGGG-----GGAAGACAACCGCCACACATTGACTTC
AnPlaSSDRY	-----CGCCCTTTGCAAGAAGGC-----GGCCGGCAGCCGCCCCACATCGACTTC
LaChaTFS9	-----CGCCCCCTACAGGAAGGT-----GGAAGGCAG---CCACACATTGACTTT
XeLaeTFS1	-----AGGCCACTGCAAGAGAAC-----GGTAGGCAGCCACCTCACATTGATTTT
BuBufTFSP	-----AGGCCACTGCAGGAGAGC-----GGTAGGCAGCCACCTCACATCGATTTT
XeSilTFS9	-----AGGCCACTGCAGGAGAGC-----GGTAGGCAGCCACCTCACATCGATTTT
BuGarS	-----CGCACCTGCAAGAGAGC-----GGCCGCCAGCCCCCTCATATTGATTTT
RhMarS	-----CGCACCTGCAAGAAAGC-----GGCCGCCAGCCCCCTCACATTGATTTT
GlRugSAA	-----CGCCCCCTGCAGGAGAGC-----GGCCGCCAGCCACCCACATCGATTTT
PlWalS	-----CGCCCTCTCCAGGAGGAA-----GGGAGACAGCTCCCCACATTGACTTC
ScCanS1	-----CGCCCCCTGCAGGAAGGC-----GGGAGACAG---CCTCACATTGATTTT
DaRerHBTFS	-----CGTCCTCTTCAGGAAAAC-----ACC-----GGACGTCCG---CTCAGCATCAACTTC
MoAlbHBTf1	-----CGCTCTCTGCCCCGATGGG-----TCTGGT-----GGGCGCCAG---CTCGACATCGACTTC
OrNilTFS9a	-----CGCTCCCTGCCTGATGGT-----CCCGGT-----GGGCGACAG---CTCAACATCGACTTC
GaAcuTFS9a	-----CGCTCCCTGTCCGACGGC-----ACCGGC-----GGCCGCCAG---CTCAACATCGACTTC
XiMacTFS9a	-----CGCGCTCTGCCCCGACGGC-----AATGTT-----GGGCGCCAG---CTCAACATCGACTTC
TaRubTFS9b	-----CGCTCTCTGAACGATGGC-----CCCGGA-----GGACGTCAG---CTCAACATCGACTTC
TeNigTFS9a	-----CGCACTCTGACCGATGGC-----CCCGGC-----GGACGTCAG---CTCAACATCGACTTC
OrLatSCC1	-----CGCCCCTGCCGGACGGC-----GCCCCC-----GGACGCCAG---CTCAACATCGACTTC
AsMexTFS9a	-----CGGCCGCTCCAGGAAGGCGTCAGCAGTGGC-----GGACGGCAG---CTCAACATCGACTTC
GaMorS1	-----CGCCCCGCTCAGGACGGCCCCCTCCCCCTCCGCCGCCGCCGCGTGGGCCGCCAG---CTCAACATCGACTTC
MoAlbHBTFS	-----CGCCCCATGCAGGAGGGGCACC-----AGTCGCCAG---CTTAACATTGACTTC
OdBonTFS	-----CGGCCCATGCAGGAGGGGCACC-----AGCCGCCAG---CTCAACATTGACTTTT
PoRetS	-----CGCCCCATTCAAGAGGGGCAGC-----AGTCGGCAG---CTCAACATAGACTTTT
XiMacTFS9b	-----CGCCCCATTCAAGAGGGGCAGC-----AGTCGGCAG---CTCAACATCGACTTTT
EpCois2	-----CGCCCCATGCAGGAGGGGCACC-----AGTCGCCAG---CTCAACATCGACTTTT
TaRubTFS9a	-----CGCCCCATGCAGGAGGGGCACC-----AGCCGCCAG---CTCAACATCGACTTC
TeNigTFS9b	-----CGGCCACGCAGGAGGGGCACA-----AGCCGTCAG---CTCAACATCGACTTC
OrNilTFS9b	-----CGGCCCATGCAGGAGGGGCACT-----AGCCGCCAG---CTCAACATTGATTTT
CiMonTFS9	-----CGGCCCATGCAGGAGGGGCACT-----AGTCGCCAG---CTCAACATTGATTTT
CySemSHB	-----CGACCCATGCAGGAGGGGCACC-----AGTCGTCAG---CTCAACATCGACTTTT
OrLatSCC	-----CGCCCCAGTGAAGAGGGGCACC-----AGCCGCCAG---CTCAACATAGACTTTT
GaAcuTFS9b	-----CGCCCCATGCAGGAGGGGCACC-----AGCCGCCAG---CTCAACATCGACTTTT
SaSalTFS2	-----CGCCCCCTGCAAGAGGGGCAGC-----GGCCGCCAG---CTCAACATCGACTTC
GaMorS2	-----CGTCCCGCGCCGGAGGGC-----CGCCAG---CTCAACATCGACTTTT
AsMexTFS9b	-----CGCCCCCTGCAGGATGGTGCC-----GGTCGCCAG---CTCAACATCGACTTC
ClGarS	-----CGTCCACTTCCCAGGGGCACA-----GGCCGCCAA---CTTAACATCGACTTC
CyCarHTF13	-----CGTCCGCTGCAGGAGGGC-----ATTGACTTC
ClGarS1	-----CGCCCATTGCAGGATGGCACCGCAGTTACCGTTGGCTCTGGCGGGCAGCGTCAG---CTTAACATCGACTTTT
DaRerHBTf1	CGAGAGCGCCCCCTGCAGGACGGC-----ATTGACTTC

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HoSapSSDR3	CGCGACGTGGACATCGGGGAGCTGAGCAGCGACGTCATCTCCAACATCGAGACCTTTCGATGTCAACGAGTTTGACCAG
MuMusSCG1	CGCGACGTGGACATCGGTGAAGCTGAGCAGCGACGTCATCTCCAACATTCGAGACCTTCGACGTCAATGAGTTTGACCAA
CaLupS1	CGCGACGTGGACATCGGGGAGCTGAGCAGCGACGTCATCTCCAACATAGAGACCTTCGACGTCAACGAAATTCGACCAG
GaGalSTF2	CGAGACGTGGACATCGGGGAGCTGAGCAGCGACGTCATCTCCAACATCGAAACCTTCGACGTCAACGAGTTTGACCAA
CoJapSSDRY	CGAGACGTGGACATCGGTGAAGCTGAGCAGCGACGTCATCTCCAACATCGAAACCTTTGACGTCAACGAGTTTGACCAA
AlMisS1	CGAGACGTGGACATCGGGGAGCTGAGCAGCGATGTCATCTCCAACATCGAGACCTTCGACGTCAACGAGTTTGACCAG
TrScrHCC	CGGGATGTGGACATTGGGGAAGCTGAGCAGCGACGTCATCTCCAACATAGAGACCTTTGATGTCAATGAGTTTGACCAG
LeOliS	CGGGATGTGGACATTGGGGAAGCTGAGCAGCGACGTCATCTCCAACATAGAGACCTTTGACGTAAATGAGTTTGACCAG
AnPlaSSDRY	CGAGACGTGACATCGGGGAGCTGAGCAGCGACGTCATCTCCAACATCGAAACCTTCGACGTCAACGAAATTCGACCAG
LaChaTFS9	AGAGATGTGGACATAGGAGAGCTAAGCAGTGATGTCATCTCCAACATAGAAAGCTTCGATGTCAATGAGTTTGACCAG
XeLaeTFS1	CGAGATGTGGACATTGGTGAGCTGAGCAGTGAGGTTCATCTCCACCATTGAAACCTTTGATGTCAATGAATTTGACCAA
BuBufTFSP	CGAGATGTAGATATTGGTGAAGCTGAGCAGTGAGGTTCATCTTACCATCGAAACCTTTGATGTCAATGAATTTGACCAA
XeSilTFS9	CGAGATGTAGATATTGGTGAAGCTGAGCAGTGAGGTTCATCTTACCATCGAAACCTTTGATGTCAATGAATTTGACCAA
BuGarS	CGGGACGTGGACATTGGAGAGCTGAGCAGCGAGGTGATCTCCAATATTGAGGCCTTTGATGTCAATGAATTCGACCAG
RhMarS	CGGGACGTGGACATTGGAGAGCTGAGCAGCGAGGTGATCTCCAACATTCGAGGCCTTTGATGTCAATGAATTCGACCAG
GlRugSAA	CGCGACGTGGACATCGGAGAGCTGAGCAGCGAGGTTCATCTCCAACATCGAGACCTTCGACGTCAACGAGTTTGACCAG
PlWalS	GGGGATGTGGACATCTCGGTGCTGAGCAGTGACGTCATCTCTAACTTTACTCCCATCGACATCCAGGAGTTTGATCAA
ScCanS1	AGCAATGTGGACATTGGGGAAGCTGAGCAGCGAAGTCATGTGGAACATGGAAACCTTCGACGTCAACGAGTTTGACCAG
DaRerHBTFS	CAGGACGTGGATATCGGGGAGCTGAGCAGCGATGTT-----ATCGAAACATTCGACGTCAATGAGTTTGACCAG
MoAlbHBTf1	CATGATGTGGACATTGGTGAGTTGAGCAGCGATGTCATCTCCACATTCGAAACCTTTGATGTCAATGAGTTTGACCAG
OrNilTFS9a	CGCGACGTGGACATCGGGGAGCTGAGCAGTGATGTCATCTCCCATATTGAGACCTTCGATGTCAACGAGTTTGACCAG

GaAcuTFS9a CGCGACGTGGACATCGGGCAGCTGAGCAGCGACGTCATCTCCCACATCGAGACCTTTCGACGTCAACGAGTTTCGACCAG
 XiMacTFS9a CGGGACGTGGACATCGGGCAGCTGAGCAGCGACGTCATCTCCCACATCGAGACCTTTCGATGTCAACGAGTTTCGACCAG
 TaRubTFS9b CGTGACGTGGATATTGGCGAGCTGAGCAGTGACGTCATCTCCCACATCGAGACCTTTCGATGTCAACGAGTTTCGACCAG
 TeNigTFS9a CGTGACGTGGATATTGGCGAGCTTAGCAGCGACGTCATCTCCCACATCGAGACCTTTCGATGTCAACGAGTTTCGACCAG
 OrLatSCC1 CGTGACGTGGACATCGGGCAGCTGAGCAGTGACGTCATCTCCCACATCGAGACCTTTCGACGTCAACGAGTTTCGACCAG
 AsMexTFS9a CGTGATGTGGACATCGGGCAGCTGAGCAGTGACGTCATCTCACACATGGAGAGCTTTCGACGTGGCTGAGTTTCGACCAG
 GaMorS1 CGCGACGTGGACATCGGGCAGCTGAGCAGCGACGTCATCTCCCACATCGAGACCTTTCGACGTCAACGAGTTTCGACCAG
 MoAlbHBTFS GGAGCTGTGGATATTGGTGAGCTGAGCAGCGATGTTCATCTCCAACATGGGGAGCTTTCGATGTGGATGAGTTTCGATCAG
 OdBonTFS GGAGCTGTGGACATCGGGCAGCTGAGCAGCGAAGTCATCTCCAACATGGGAAGCTTTCGATGTTCGATGAGTTTCGATCAG
 PoRetS GGAGCTGTGGACATTGGTGAGCTTAGCAGCGACGTCATCTCCAACATCGGCAGCTTTCGATGTTCGATGAGTTTCGACCAG
 XiMacTFS9b GGAGCTGTGGACATTGGTGAGCTTAGCAGCGACGTCATCTCCAACATCGGGAGCTTTCGATGTTCGATGAGTTTCGACCAG
 EpCois2 GGAGCTGTGGACATTAATGAGCTGAGCAGCGAGGTCATCTCCAACATCGGGAGCTTTCGATGTTCGACGAGTTTCGATCAG
 TaRubTFS9a GGAGCCGTGGACATTGGCGAGCTGAGCAGCGAGGTCATTTCCAACATGGGCAGCTTTCGACGTGGACGAGTTTCGACCAG
 TeNigTFS9b GCGCGCGTGGACATCGGGCAGCTGAGCAGCGAGGTCATTTCCAACATGGGGAGCTTTCGACGTGGACGAGTTTCGACCAG
 OrNilTFS9b GGAGCTGTGGACATTGGTGAGCTGAGCAGCTGATGTTCATCTCCAATATAGGAAGCTTTCGATGTTCGATGAGTTTCGATCAG
 CiMonTFS9 GGAGCTGTGGACATTGGTGAGCTGAGCAGTGATGTTCATCTCCAACATGGGAAGCTTTCGATGTTCACGAGTTTCGATCAG
 CySemSHB GGAGCGGTGGACATCGGGCAGTTGAGCAGCGACGTCATCTCCAACATGGGGAGCTTTCGACGTTCGATGAGTTTCGATCAG
 OrLatSCC GGCAGTGTGGACATCGGTGAGCTGAGCAGCGACGTCATCTCCAACATCGGCAGCTTTCGACGTTCGATGAGTTTCGATCAG
 GaAcuTFS9b GGAGCTGTGGACATCGGGCAGCTGAGCAGCGAGGTCATCTCCAACATGGGCAGCTTTCGACGTTCGATGAGTTTCGATCAG
 SaSalTFS2 CGGGACGTGGATATCGGGCAGCTGAGCAGCGACGTCATCTCCAACATCGAGGCTTTCGATGTCAATGAGTTTCGACCAG
 GaMorS2 GCGCGGTGGACATCGGGCAGCTGAGCAGCGACGTCATCTCCAACATGGGCAGCTTTCGACGTGGACGAGTTTCGACCAG
 AsMexTFS9b AGGGACGTGGACATTGGCGAGCTGAGCAGCGACGTCATCTCCAACATCGAGACCTTCGACGTCAACGAGTTTCGACCAG
 ClGarS CGTGATGTGGACATTGGTGAGCTGAGCAGTGACGTCATCTCCAACATGGAGGCTTTCGATGTGAATGAGTTTCGACCAG
 CyCarHTF13 GCGCGCGTAGACATCGGGCAGCTGAGCAGCGACGTCATCTCCAACATGGAGCCATTCGACGTCAACGAGTTTCGACCAG
 ClGarS1 CGCGATGTGGACCTGGGGGAAGTGGAGCAGTGACGTCATCTCGACATGGAGAGCTTTCGATGTGGCCGAGTTTCGACCAG
 DaRerHBTf1 GGTGCGGTGGACATCGGTGAGCTGAGCAGTGATGTTCATCTCCAACATAGAGGCTTTCGATGTTCGATGAGTTTCGACCAG

1015

HoSapSSDR3 TACCTGCCGCCAACCGGCCACCCGGGGGTGCCGCCACG-----CACGGC-----CAGGTCACCTACACG
 MuMusSCG1 TACTTGCCACCCAACCGGCCACCCAGGGGTTCCGGCCACC-----CACGGC-----CAGGTCACCTACACT
 CaLupS1 TACCTGCCGCCAACCGGGCACCCGGGGGTGCCGCCACG-----CACGGC-----CAGGTCACCTACACG
 GaGalSTF2 TACCTGCCCCCAACCGGCCACCCGGGGGTCCCAGCCACC-----CACGGCCAG-----GTCACCACCTACAGC
 CoJapSSDRY TACCTGCCCCCAACCGGCCACCCGGGGGTCCCAGCCACC-----CACGGCCAA-----GTCACCACCTACAGT
 AlMisS1 TACCTCCCACCGAATGGGCACCCCTGGAGTCCCAGCCACT-----CACGGGCAGCCTGGCCAGGTGACCTACACC
 TrScrHCC TACCTCCCACCCAACCGGTCACCCCTGGAGTCCCAGCCACT-----CATGGGCAACCCGGTCAAGTCACTATAGT
 LeOliS TACCTCCCACCCAACCGGTCACCCGGGAGTCCCAGCCACC-----CACGGCCAACCCGGTCAAGTCACTACAGC
 AnPlaSSDRY TACCTCCCACCCAACCGGCCACCCGGGGGTCCCAGCCACC-----CACGGCCAACCCGGCCAGGTCACTACACC
 LaChaTFS9 TATCTGCCACCCAATGGCCACCCAGGTGTCCCTGTCCACC-----CATGGCCAGAGTGGCCAGGTTACCTACACT
 XeLaeTFS1 TACCTGCCGCCAACATGGCCACCCAGGGGTTGGCTCCACT-----CACGGCCACCCGGTCAAGTCACTACACA
 BuBufTFS9 TACCTGCCACCCAATGGCCACCCAGGTGTTGGCTCCACA-----CACGGCCACCCGGTCAAGTCACTACACA
 XeSilTFS9 TACCTGCCACCCAATGGCCACCCAGGTGTTGGCTCCACA-----CACGGCCACCCGGTCAAGTCACTACACA
 BuGarS TACCTGCCACCCAACCGGCCACCCGGGAGTGCCTCCACA-----CACGGCCACCCGGTCAAGTCACTACACC
 RhMarS TACCTGCCACCCAACCGGCCACCCGGGAGTGCCTCCACA-----CACGGCCACCCGGTCAAGTCACTACACC
 GlRugSAA TACCTGCCGCCAACCGGCCACCCGGGAGTGGCCTCCACG-----CACGGCCACCCGGTCAAGTCACTACACG
 PlWalS TACCTTCCGCCAACAGCCACCCCTGGTGTGCCACAACC-----CATGGGCAGGCTGGACCAGGTACCTATACC
 ScCanS1 TACCTCCCACCCAACCGGGCACCCAGGGGCCCCAGTCACCCACACGGGCCATGGACAGAGTGCTCAGGCCACCTACACC
 DaRerHBTFS TACCTCCCAGCGAACCGGTCACCCAGAACGCACCC-----CACGGCCACCCGGTCAAGTCACTACACC
 MoAlbHBTf1 TACCTCCCACCCAACCGGGCACCCAGGCACCCAGC-----CACGGCCACCCGGTCAAGTCACTACACC
 OrNilTFS9a TATCTCCCTCCCAACCGGCCACCCGGGCTCCACC-----AACGCAGCGCCAGTAAGTTACACT
 GaAcuTFS9a TACCTTCCGCCAACCGGGCACCCGGGCTTAGCG-----GGCGCCGCC-----AACGCAGCGCCAGTAAGTTACACT
 XiMacTFS9a TACCTCCCGCCAACCGGCCACCCGGGGCCCGCTC-----GGCGCCACTCCGGTCAAGTCACTACAGC
 TaRubTFS9b TACCTCCCAGCCTAACCGGCATCCCGGCTCTGCT-----AACGCCACCCGGTCAAGTCACTACAGT
 TeNigTFS9a TACCTCCCACCCAACCGGGCATCCAGGCTCAGCC-----AACGCCACCCAGTCAAGTCACTATAGC
 OrLatSCC1 TACCTCCCCCAACCGGGCACCCCTGGCGCCGCCCTGGG-----AGCACCCGCCCGTCAAGTCACTACAGC
 AsMexTFS9a TACCTTCCACCCAACCGGGCATCCGGGCGCTGCC-----TACGTT-----TACGTT
 GaMorS1 TACCTGCCCCCAACCGGCCACCCGGGCGGCGCT-----GGGGT-----GGGGT
 MoAlbHBTFS TACCTGCCACCTCACAGCCATGCTGGGGTGACTGGC-----ACAGTTCAGACAGGCTATACC
 OdBonTFS TACTTGCCACCGCACAGCCACGCTGGGATGACAGGT-----CCAGCCCCAGCTGGCTACACT
 PoRetS TACCTGCCGCCTCACAGCCACGCTGGGGTGCCTGGT-----GCAGCCCAGGCTGGCTACACA
 XiMacTFS9b TACCTGCCACCTCACAGCCACGCTGGGGTGTCTGGT-----GCAGCCCAGGCTGGCTACACA
 EpCois2 TACCTGCCACCTCACAGCCATGCTGGGGTGACCGGA-----GCGGCCAGGCTGGCTACACC
 TaRubTFS9a TACCTCCCAGCCTCACAGCCACGCTGGGGTGAGCGGC-----GCCCCAGGCTGGCTACACC
 TeNigTFS9b TACCTCCCTCCTCACAGCCACGCGGGGTGAGCGGC-----GTCCCGCAGGCTGGCTACACC
 OrNilTFS9b TACCTGCCACCTCACAGCCATGCTGGGGTGAATGGC-----GCAGCGCAGGCTGGCTACAGC
 CiMonTFS9 TACCTGCCACCTCACAGCCATGCTGGGGTGAATGGT-----GCAGCACAGGTTGGCTATACC
 CySemSHB TACCTGCCACCTCACAGCCATGCTGGATTGCCAGT-----GGAGCCCAGGCTGGCTACACC
 OrLatSCC TACCTGCCCCCTCACAGCCACGCTGGGATGACCGGC-----ACAGCCCAGGCTACTTCC
 GaAcuTFS9b TACCTGCCACCTCACAGCCACATTGGAGTGACNGG-----AGCAGCTCAGGCGCTACGCC

SaSalTFS2 TACCTGCCACCCACGGGCACCCCGGCATGCCTGGCGTC-----AACGGCGCCAGACGGGGCTACACG
GaMorS2 TACCTGCCGCCCCACAGCCACGCCCACGCCCAC-----CTGACGGCCGGCGGCTACACG
AsMexTFS9b TACCTGCCGCCGCACGGTCATCCGGGGCTTCCC-----GCCAAGCTCAAGCCTACTCA
ClGarS TACTTGCCGACGCAC-----GGGGCTCAGGTCTACTCTCTCC
CyCarHTF13 TACCTGCCCCCTCGCGACACCCGGGGGTGAGC-----GGCGGCATGCAGGGCTATCCC
ClGarS1 TACCTGCCACCTAACGGGCACCCCGGGCACGGA-----
DaRerHBTf1 TACCTGCCTCCGCACGGGGCCCCGGGGCCGGCC-----GGTGCAGGGTTCTCC

1093

HoSapSSDR3 GGCAGCTACGGCATCAGC-----AGCACCGCGGCCACCCCGGCGAGC---GCGGGCCACGTGTGGATGTCCAAG---
MuMusSCG1 GGCAGTTACGGCATCAGC-----AGCACCGCACCCACCCCTGCGACC---GCGGGCCACGTGTGGATGTCCAAG---
CaLupS1 GGCAGCTACGGCATCAGC-----AGCACCGCGGCCACCCCGGCGGGC---GCGGGCCACGTGTGGATGTCCAAG---
GaGalSTF2 GGTACCTACGGCATCAGC-----AGCTCGGCCAGCTCTCCGGCGGGC---GCCGGGCACGCCTGGATGGCCAAAG---
CoJapSSDRY GGTACCTACGGCATCAGC-----AGCTCGGCCAGCTCTCCGGCAGGC---GCAGGGCATGCCTGGATGGCCGAA---
AlMisS1 GGCAGCTACGGGATCAGC-----AGCACTGCCGCCACCCCGACCGGG---GCCGGGCACGTGTGGATGTCCAAG---
TrScrHCC GGCAGCTACGGAATCAGT-----AGCACGTACGCCACTCAAGCTGGA---GCCGGGCCCGTTTGGATGTCCAAG---
LeOliS GGCAGCTATGGGATCAGC-----AGCACGCCTGCCACTCAAGCTGGA---GCCGGGCACGTGTGGATGTCCAAG---
AnPlaSSDRY GGCAGCTACGGCATCAGC-----AGCTCGGCCGGCTCACC GGCCGGT---GCCGGGCACGTGTGGATGTCCAAG---
LaChaTFS9 GGCAGTTATGGCATCAGC-----AGTACAGCGGTCACTCAGGCAGGT---GGTAGCCATCCTTGGATGTCCAAG---
XeLaeTFS1 GGCAGTTATGGCATCAGC-----AGCACCCCTAGTGCAACCACAGGT---GCTGGCCCTGCCTGGATGTCTAAA---
BuBufTFSP GGCAGTTATGGCATCAAC-----AGCACCCCCAGCGCTACTCCGGGT---GCTGGCCCTGCCTGGATGTCTAAA---
XeSilTFS9 GGCAGTTATGGCATCAAC-----AGCACCCCCAGCGCTACTCCGGGT---GCTGGCCCTGCCTGGATGTCTAAA---
BuGarS GGCAGTTACGGCATCACC-----AATACAAACAGTGCTACCACGGGCGCCGCCGGGCACACATGGATGTCCAAA---
RhMarS GGCAGTTACGGCATCACC-----AATACAAATAGTGCCACCACCGGC---GCCGGGCACACATGGATGTCCAAA---
GlRugSAA GGCAGCTACGGCATCAGC-----AGCGCCCGCGGGCTCCTGCCGGG---GCTGGGCACGCCTGGATGCCCAAAG---
PlWals AACAGCTACGGGCTGGC-----AACACAGCAGCTCCCCAACCTGGGGCTCCAGCCCATGCCTGGCTGGCCAAA---
ScCanS1 GGCAGCTATGGGATTTGC-----AGCACTTCAGTCACCCAG-----GCCGCCACCCCTTGGTTGTCCAAG---
DaRerHBTfS GGAGGATACGCC-----GCCCTGGATGACCAAAA---
MoAlbHBTf1 GGCAGCTACAGCATCAGCAGC---AGTGACCCGTCAGTCCACAGCCAGGAGGTGCCACAGCCTGGATGGCTAAG---
OrNilTFS9a GGCAGCTACAGCATCAGCAGCGGGCGGCTCCAGTCAGCCCCAGTCAGGAGGC-----GCCTGGATGGCTAAA---
GaAcuTFS9a -----GCG-----GCTTGGCTGGCGAAA---
XiMacTFS9a GGCAGCTACAGCATAAGCGGC---GGGGCGCCGCTCAGCCCGCAGCCG-----GCCTGGATGTCTAAA---
TaRubTFS9b GGCAGTTACAGCATCAGTAGC---AGCGGCCCTGTGAGCCACAGACGGGAGGCGTGGCAGCCTGGCTGACTAAACCC
TeNigTFS9a GGCAGCTACAGCATCAGCAGC---AGTGCCCCGTCAGCCACAGGCGGGAGGCGTGGCAGCCTGGCTGACCAAACCC
OrLatSCC1 GGCAACTACAGCATCAGCGGC---GCCCCGCTCTGAGCCCGCAGGCAGGCGGGGGCCGGCCTGGATGGCTAAG---
AsMexTFS9a GGCAGCTACAGCCTGGCCGGTCCCGGCACAGTTGGTCAGGCGGCGGCAGGAGGT-----GTCTGGATGAGCAAAG---
GaMorS1 GCCGCCTTCTGCCCGTCC-----GCCTGGATGGGCAAG---
MoAlbHBTfS AACAGCTAC---AACATCAGCAGCCCTTCAGTCTGTCAGGCAGCCAATGCTGGAGCCACACCTGGGTGTCCAAG---
OdBonTfS AACAGCTAC---GGTATCAACAGCTCCTCAGTCAGCCAGGCTACCAATGTTGGAGCCACGCCTGGATGTCCAAG---
PoRetS GGTAGCTAC---GGTATTAGCACCCGCTCAGTCGGTCAGGGAGCCGGTGTGGGAGCTCATGCTTGGATGTCCAAG---
XiMacTFS9b GGCAGCTAC---GGTATTAGCACCTCCTCAGTCGGTCAGGGAGCCGGTGTGGGAGCTCATGCTTGGATGTCCAAG---
EpCois2 AGCAGCTAC---GGCATCAGCAGCTCCTCAGTCAGCCAGGCGGCAATGTCGGAGCCACACCTGGATGTCCAAA---
TaRubTFS9a GGCAGTTAC---GGCATCAGCAGCTCCTCCGTGAGCCAGGCGGCGGCGTGGGGGCCAACGCTGGATGTCCAAG---
TeNigTFS9b GGCAGTTAC---GGCATCAGCGGCTCCTCCGTTAGCCAGACGGGCAGCGTTGGGACCCAAAGCCTGGATGTCCAAG---
OrNilTFS9b AGCGGCTAC---CCTATCAACAGCTCCTCTGTGCGCCAGCCAGCCAGTGTGGAGCCACGCCTGGATGTCCAAG---
CiMonTFS9 AGCAGCTAT---CCCATCAACAGTTTCTCAGTCGGCCAGCCACCCAGTGTGGAGCCACGCCTGGATGTCCAAA---
CySemSHB GGCAGCTAT---GGCATGGGCAGCTCCTCTTAGGCCAGGCAGCTAATGTTGGGGTCCATGCTTGGATGTCCAAG---
OrLatSCC AACAACTAC---GTTATCAACAGCTCTGCCGTTGGCCAGACAGCCAATGTTGGAGCCCATGCCTGGATGCCAAA---
GaAcuTFS9b AGCGGCTAT---GGCATCGGCGGCTCCTCAGTCGGCCACGCGGCAATGTCGGGGCCACGCCTGGATGTCCAAG---
SaSalTFS2 AGCAGCTACCGCGGCATCAGCGCCAGCTCCATTGGCCAG---GTGGGTGCTGGAGGACATGGCTGGATGTCCAAG---
GaMorS2 GGGAGCTAC-----GGCCAGTCGGCTAGCCCCGGGCGCCACGCCTGGATGTCTGAAG---
AsMexTFS9b GCCAGCTAC---GGTCTGTCCCTCTCAGCT-----GGTGGATGTCCAAG---
ClGarS TCTGGGTAT-----GGCATGGGCCAGACAGCAGGCACCAGCGGGCATGGCTGGATGGGCAAAA---
CyCarHTF13 GCCGGGTAC-----GGTGGCACCTGGATGTCCAAA---
ClGarS1 -----TGGATGAGCTCAGCGCCAGCGGTTGGATGACCAAAG---
DaRerHBTf1 AGCGGGTAC-----GGCAGCGCAGCCTGGATGCACAAA---

1171

HoSapSSDR3 -----CAGCAGGCG-----CCGCCGCCACCCCGCAGCAG
MuMusSCG1 -----CAGCAGGCG-----CCGCCCTCCTCCGCGCAGCAG
CaLupS1 -----CAGCAGGCGCCGCGCCGCGCCGCGCCGCGCCGCGCCGCGCAGCAG
GaGalSTF2 -----CAG-----CAGCCGACGCCCCACAGCCC
CoJapSSDRY -----CAG-----CAGCCACAGCCCCACAACCC
AlMisS1 -----CAGCCGACGCCGCGCAGCAGCCGACGCGCCGCGCAGCCG
TrScrHCC -----CAACCG---CCGACGCCCCAACAGCAGCCG-----CCG
LeOliS -----CAACAGCACAGCACAGCACGCGCCGCGCC-----AGG
AnPlaSSDRY -----CAG-----CAGCCTCAACCCCAACCACAG
LaChaTFS9 -----CAG-----CAGCAGCAG-----

XeLaeTFS1	-----CAACAG-----CAACAG-----
BuBufTFSP	-----CAACAA-----CAGCAGCAGCAGCAACAACCA
XeSilTFS9	-----CAACAA-----CAGCAGCAGCAGCAACAACCA
BuGarS	-----CAGCAGCAGCCGCAGCAGCCG
RhMarS	-----CAGCAG-----CAGCAGCAGCCGCCAGCCG
GlRugSAA	-----CAGCCC-----CAACAGCAACCTCAACAGCCC
PlWals	-----CAG-----CAACAGCAG-----
ScCanS1	-----CAG-----
DaRerHBTFS	-----CCCCAAAACGGCAGCCCTCAA-----
MoAlbHBTFS1	ACTCAG-----AACCACAGGGA-----CAG-----
OrNilTFS9a	AGCCCG-----AACCAGCAGGGACAACAGCAGCAG-----
GaAcuTFS9a	AGCCAA-----AACCAGCAGGGA-----CAGCAG-----
XiMacTFS9a	AGCCAG-----AACCAGCAGGGA-----CAGCAGCAG-----
TaRubTFS9b	AACCAG-----AACCAGCAGGGA-----
TeNigTFS9a	AACCAG-----AACCAGCAGGACAGCAGCAGCAG-----
OrLatSCC1	GCCAC-----AGTCAGCAG-----CAG-----
AsMexTFS9a	ACCCAGAGTGGGAACCCTCAGGGTGGGCCACAGCCGTCAAATCAGCAGCAGCAACAGCAGCAG-----
GaMorS1	-----GGCCAGAGCCTGCAGCAGCAG-----
MoAlbHBTFS	-----CAGCAGCAGCAGCAGCAGCAG-----
OdBonTFS	-----CAGCAGCAACAG-----
PoRetS	-----CAGCAGCAACAGCAG-----
XiMacTFS9b	-----CAGCAGCAG-----
EpCoiS2	-----CAGCAGCAGCAG-----
TaRubTFS9a	-----CAGCAGCAGCAGCAGCAGCAGCAG-----
TeNigTFS9b	-----CAGCAGCAGCAGCAGCAGCAGCAGCAG-----
OrNilTFS9b	-----CAGCAGCAGCAGCAGCAGCAGCAACAG-----
CiMonTFS9	-----CAGCAACAGCAGCAACAGCAGCAC-----
CySemSHB	-----CAGCAGCAGCAGCAGCAACAGCAGCAGCAGCAG-----
OrLatSCC	-----CAG-----
GaAcuTFS9b	-----CAGCAGCAGCAGCAGCAG-----
SaSalTFS2	-----CAGCAGCAG-----
GaMorS2	-----CAGCATCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAG-----
AsMexTFS9b	-----CAGCATCAGCAACAACATCAGCAGCAGCAGCCACAGCAGCCGCCACAGTCGCAATCGCAGCCACAGCAG-----
ClGarS	-----CAACAGCCACAG-----
CyCarHTF13	-----
ClGarS1	-----
DaRerHBTFS1	-----

1249

HoSapSSDR3	CCCCCACAGGCCCGCCG---GCCCGCAGGCGCCCCCGCAGCCCGAGGCGGCCCCACAGCAGCCGGCGGCCACCC
MuMusSCG1	CCTCCGAGGCCCGCAA---GCCCGCAGGCGCCTCCGAG---CAGCAAGCACCCCGCAGCAGCCGCGAGGCA---
CaLupS1	TCCCCGAGGCGCCCCCGCAGCCCCCGCAGGCGCCCCCGCAGGCGGCCCGCAGCCGCAGCCCGCGCCC
GaGalSTF2	CCAGCACAG-----CCC-----
CoJapSSDRY	CCAGCACAG-----CCC-----
AlMisS1	CCGCCGAGGCTCAGCCC-----
TrScrHCC	CCGCCCCAGGCCCGCCC-----
LeOliS	CCAGCGCAG-----
AnPlaSSDRY	CCCCCCCAG---CAGCCC-----
LaChaTFS9	-----
XeLaeTFS1	CAGCCTCAA-----
BuBufTFSP	CAGCCTCCC-----
XeSilTFS9	CAGCCTCCC-----
BuGarS	CCCCAGCAG-----
RhMarS	TCCCAGCAG-----
GlRugSAA	CAGCAGCAG-----
PlWals	-----
ScCanS1	-----
DaRerHBTFS	-----AGC-----
MoAlbHBTFS1	-----CAG-----
OrNilTFS9a	-----CAG-----
GaAcuTFS9a	-----CAG-----
XiMacTFS9a	-----CAG-----
TaRubTFS9b	-----CAG-----
TeNigTFS9a	-----CAG-----
OrLatSCC1	-----CAG-----
AsMexTFS9a	-----CAA-----
GaMorS1	-----AGG-----
MoAlbHBTFS	-----CAG-----

OdBonTFS -----CAG-----
 PoRetS -----CAG-----
 XiMacTFS9b -----CAG-----
 EpCoiS2 -----CAG-----
 TaRubTFS9a -----CAG-----
 TeNigTFS9b -----CAG-----
 OrNilTFS9b -----CAG-----
 CiMonTFS9 -----
 CySemSHB -----CAG-----
 OrLatSCC -----CAG-----
 GaAcuTFS9b -----CAG-----
 SaSalTFS2 -----CAG-----
 GaMorS2 -----CAG-----
 AsMexTFS9b CCACCACAG-----
 ClGarS -----CAA-----
 CyCarHTF13 -----CAG-----
 ClGarS1 -----
 DaRerHBTF1 -----

1327

HoSapSSDR3 CCGCAGCAGCCACAGGGCGCACACGCTGACCACGCTG-----AGCAGCGAGCCGGGCCAGTCCCAG
 MuMusSCG1 CCCCAGCAGCAGCAGGCACACACGCTCACCACGCTG-----AGCAGCGAGCCAGGCCAGTCCCAG
 CaLupS1 CCGCAGCCCGCAGGGCGCGCACACGCTGACCCCGCTG-----AGCAGCGAGCCGGGCCAGGCCAG
 GaGalSTF2 -----CCGGCACAGCACACACTGCCAAGCACT-----GAGCGTGAGCAGGGTCCGGGCACAG
 CoJapSSDRY -----CCGGCGCAGCACACACTGCCAGCACTG-----AGCGGTGAGCAGGGCCCGACACAA
 AlMisS1 -----CAAGCGGCGCACACGATGACCCCCCTG-----AGTGGCGAGCAGGGGCAGTCCCAG
 TrScrHCC -----CAGCCGCCGCATACCATGACCACCCTG-----AGCAGCGAACAGGGCCAGTCCCAG
 LeOliS -----CATGCGATGACCACCCTG-----AGCAGCGAACAGGGCCAGTCCCAG
 AnPlaSSDRY -----CCGGCGCAGCACGGGTTGCCGGCGCTG-----AGCAGCGAGCAGGGCCAGGCGCAG
 LaChaTFS9 -----CACTCAATAACCACCCTG-----AGCAGCGAACAGGGCAGGCCAG
 XeLaeTFS1 -----CAACATTCACTGTCAACCCTA-----AACAGCGAGCAAAGCCAGTCCCAG
 BuBufTFSP -----CAACACTCACTGTCAACCATA-----AACAGCGAGCAAAGCCAGTCCCAG
 XeSilTFS9 -----CAACACTCACTGTCAACCATA-----AACAGCGAGCAAAGCCAGTCCCAG
 BuGarS -----CCGCACACATTGTGCGACTCTG-----AGCAGCGAGCAGAGCCAGTCCCAG
 RhMarS -----CCGCACGCATTGTCCACTCTG-----AGCGGCAGCAGAGCCAGTCCCAG
 GlRugSAA -----CAGCACGGTTTACCGACTCTG-----AGCAACGAGCAGAGCCAAAGCCAA
 PlWals -----CACACGTTGACCACACTG-----GGCAGCGAGCAGAGCCAGGGCGCAG
 ScCanS1 -----CATTGATGACGGGCCCTC-----ACCAGCGCAGGGACAG---CAG
 DaRerHBTF5 -----AGCCAGCTGACCCCGCTG-----AACCCGCGAGAACCAGCCAGCAG
 MoAlbHBTF1 -----CAGACTCTGACCACCCTG-----GGGAGCAGTGGTGGCTCAGAGGCAGCTTCTGCCAG
 OrNilTFS9a -----CACACCCTGACCACCCTG-----GGGAGCAGCGGGGCTTCAGACGCCGCTCAGACCCAG
 GaAcuTFS9a -----CATACTCTGACCCCACTG-----GGGGGAGGGGGCGCC-----GAG
 XiMacTFS9a -----ATCACCCCTCACCACGTTG-----GGCGGCGGCGGCGGAGGCTCGGACGCTGCCAGGGCGCAG
 TaRubTFS9b -----CACACCCTGACCACCCTG-----GTGGGCAGCAGC-----ACAGAAGCCAG
 TeNigTFS9a -----CACACCCTGACCACCCTG-----GTGGGCAGCGGC-----TCAGAAGCCAG
 OrLatSCC1 -----CACAGCCTGACCCCCCTG-----GGGACCAGCGGGGTTTCAGAGGCCGCC-----CTG
 AsMexTFS9a -----CATTCCCTGACCCAGCTG-----GGTACTGGCAATGGTGGGGATCAGGGTCCAGCAGAGG
 GaMorS1 -----
 MoAlbHBTF5 -----CACTCTCTGACCACCCTG-----GGTGGAGGAGGAGAGCAAGGCCAGCAGGGTCAACAG---
 OdBonTFS -----CATTCTTTGACCACCCTG-----GGTGGAGCAGGAGAGCAAGGCCAGCAGGGTCCAGCAG---
 PoRetS -----CATACTCTGACCACCCTT-----GGTGGAGCAGGAGAGCAAGGTCAACAGGGCCAGCAG---
 XiMacTFS9b -----CATACTCTGACCACCCTT-----GGTGGAGCAGGAGAGCAAGGTCAACAGGGCCAGCAG---
 EpCoiS2 -----CACTCTCTGACCACCCTG-----GGTGGAGGAGGAGAGCCAGTCCAGCAGGGTCAACAG---
 TaRubTFS9a -----CACTCCTTGACTGCCCTG-----AGTGGGGGAGGAGAGCAAAGCCAGCAGGGTCCAGCAG---
 TeNigTFS9b -----CACCCCTGACCACCCTG-----GGTGGGGGAGGAGAGCAAAGCCAGCAGGGTCCAGCAG---
 OrNilTFS9b -----CTCTCTCTGACCACCCTG-----GGTGGAGGAGGAGAGCAAAGCCAGCAGGGTCAACAG---
 CiMonTFS9 -----TCTCTGACCACCCTG-----GGTGGAGGAGGAGAGCAAGGCCAACAGGGTCAACAG---
 CySemSHB -----CACTCTCTGACCACACTG-----GGCGGAGGAGGTGAGCAAGGTTCAGCAAGGTCAACAA---
 OrLatSCC -----CATTCTTTGGCCACCCTC-----GGTGGGGGTGGAGATCAAAGCCAACAGGGTCAACAG---
 GaAcuTFS9b -----CACTCTTTGACCACCCTG-----GGCGGAGGAGGAGAGCAAGGCCAGCAGGGTCAACAG---
 SaSalTFS2 -----CACTCCATCTCCGCCCTGAGTGGAGGTGGAGGTATTGGGGGAGAGCAAGGCCAGAGCCAG
 GaMorS2 -----CACTCTCTGACCACGCTG-----GGCGGAGACGGCGAGCAG-----
 AsMexTFS9b -----CACTCCCTGACCACGCTGACCCCGGCAGACCAGGCCAGTCCCAACAA-----
 ClGarS -----CACTCTCTGACCACACTT-----GGCACAGCTGGCGAGCAGGGGCAGACCCAACAG-----
 CyCarHTF13 -----CACTCGATGGCCAGC-----GGTGGCGAGCAGAGCCAAGGCCAGCAG-----
 ClGarS1 -----AGCCCCAGTTCCAGCCCTCAGGTGGGTGCTACCAGCCCTGGTGAGGATCAGAGCCAG
 DaRerHBTF1 -----CCACTC-----GCGAGCAGCTCCATGGCTAATGCCGGCGAGCAGCACCAG

1405

HoSapSSDR3 ---CGA---ACGCACATCAAGACGGAGCAGCTGAGCCCCAGCCACTACAGC-----
 MuMusSCG1 ---CGA---ACGCACATCAAGACGGAGCAGCTGAGCCCCAGCCACTACAGC-----
 CaLupS1 ---CGA---ACGCACATCAAGACGGAGCAGCTGAGCCCCAGCCACTACAGC-----
 GaGalSTF2 CAGCGG---CCGCACATCAAAAACAGAGCAGCTGAGCCCCAGCCATAACAGC-----
 CoJapSSDRY CAGCGG---CCGCACATCAAAAACGGAGCAGCTGAGCCCCAGCCACTACAGC-----
 AlMisS1 CAGCGG---CCGCACATCAAGACGGAGCAGCTGAGCCCCAGCCATTACAGC-----
 TrScrHCC CAGAGG---ACACACATCAAGACAGAACAACACTCAGTCCGAGCCATTACAGC-----
 LeOliS CAGAGG---ACACACATCAAGACAGAGCAGCTCAGTCCCAGCCATTACAGC-----
 AnPlaSSDRY CAGCGG---ACGCACATCAAGACGGAGCAGCTGAGCCCCAGCCACTACAGC-----
 LaChaTFS9 CCCAGG---ACACACATCAAGACTGAGCAGCTAAGCCCCAAGTCACTACAGC-----
 XeLaeTFS1 CAAAGG---ACACACATCAAGACCGGAGCAACTGAGTCCAAGTCATTACAGTGAC-----
 BuBufTFSP CAAAGG---ACACACATCAAGACTGAACAACACTGAGCCCTAGCCATTACAGTGAC-----
 XeSilTFS9 CAAAGG---ACACACATCAAGACTGAACAACACTGAGCCCTAGCCATTACAGTGAC-----
 BuGarS CAGAGG---ACACACATCAAGACCGGAGCAGCTTAGTCCAAGTCATTACAGCGAC-----
 RhMarS CAGAGG---ACACACATCAAGACTGAGCAGCTTAGTCCAAGTCATTACAGCGAC-----
 GlRugSAA CAGAGG---ACACACATCAAAAACCGGAGCAGCTCAGCCCCGAGTCACTACAGCGAC-----
 PlWals CAGAGG---ACACACATCAAGACCGGAACAACACTTAGCCCCACACACTACAGC-----
 ScCanS1 CAGAGG---ACACACATCAAGACCGGAGCAGTTGAGCCCCAGCCATTACAAT-----
 DaRerHBTFS CCCCCAAGCAGCATATTTAAAACCGAACAGCTCAGCCCCAGCCATTACAACGAG-----
 MoAlbHBTf1 CACAGG---ACCCAGATCAAGACAGAGCAACTGAGCCCCAAGTCACTACAGCGAG-----
 OrNilTFS9a CATAGG---ACCCAGATCAAGACCGGAGCAGCTGAGCCCCAGCCACTACAGCGAG-----
 GaAcuTFS9a CACCGG---ACCCAGATAAAGACTGAGCAGCTGAGCCCCGAGCCACTACACCGAG-----
 XiMacTFS9a CACAGG---ACCCAGATCAAGACCGGAGCAGCTGAGCCCCGAGTCACTACAGCGAG-----
 TaRubTFS9b CACAGG---ACCCAGATCAAGACAGAACAGCTGAGCCCCGAGCCATTACAACGAC-----
 TeNigTFS9a CACAGG---ACCCAGATCAAGACCGGAACAGCTGAGCCCCGAGCCATTACAACGAT-----
 OrLatSCC1 CGCAGG---ACCCAGATTAAGACCGGAGCAGCTGAGCCCCAGTCACTACAGCGAG-----
 AsMexTFS9a ACCCCG---ACACACATCAAGACAGAGCAGCTGAGTCCCAGCCACTACAGTGAG-----
 GaMorS1 -----ACCCACATCAAGACCGGAGCAGCTGAGCCCCGGGTCACTACTCGGAGCAGCTCAGCCCCGGGCACTACTCT
 MoAlbHBTFS ---AGAACCGCCAGATCAAGACAGAACAGCTAAGTCCCAGCCACTTACAGCGAA-----
 OdBonTFS ---AGAACCACCCTGATTAAGACAGAGCAGCTGAGCCCCAAGCCACTACAGCGAG-----
 PoRetS ---AGAACCACCCAGATCAAGACAGAGCAGCTCAGCCCCGAGCCACTACAGTGAC-----
 XiMacTFS9b ---AGAACCACCCAGATCAAGACCGGAGCAGCTCAGCCCCGAGCCACTACAGTGAC-----
 EpCois2 ---AGAACCACCCAGATCAAAAACAGAGCAGCTGAGCCCCAGCCACTACAGCGAG-----
 TaRubTFS9a ---AGGCCCGCCAGATCAAGACAGAGCAGCTGAGTCCGAGCCACTACAGCGAG-----
 TeNigTFS9b ---AGGCCCGCCAGATCAAGACCGGAGCAGCTGAGTCCGAGCCACTACAGCGAG-----
 OrNilTFS9b ---AGAACCACCCAGATTAAGACCGGAGCAGCTGAGCCCCAGCCACTACAGCGAG-----
 CiMonTFS9 ---AGAACCACCCAGATTAAAAACAGAGCAGCTGAGCCCCAGCCACTACAGCGAG-----
 CySemSHB ---AGAACCACACAGATCAAGACAGAGCAGCTGAGTCCCAGTCACTACAGTGAG-----
 OrLatSCC ---AGAACCACCTCAGATCAAGACCGGAGCAGCTGAGCCCCAGCCACTACAGCGAG-----
 GaAcuTFS9b ---AGAACCACCCAGATCAAGACCGGAGCAGCTGAGCCCCAGCCACTACAGCGAG-----
 SaSalTFS2 GGGAGAACCCTCACATCAAGACCGGAGCAGCTGAGCCCCAGCCACTACAGTGAG-----
 GaMorS2 ---AGGACCACCCAGATCAAGACCGGAGCAACTGAGCCCCAGCCACTACCGCGAG-----
 AsMexTFS9b ---CGCCCCACACAGATCAAGACAGAGCAGCTGAGCCCCAGCCACTACAGCGAC-----
 ClGarS ---CGGCCAGCACACATCAAGACAGAGCAGCTCAGCCCCAAGCCACTACAGTGAG-----
 CyCarHTF13 ---CGG---ACGCAGATCAAGACCGGAGCGGCTGAGCCCCAGCCACTACAGCGAG-----
 ClGarS1 CAGAGAACAACGCACATCAAAAACAGAGCAGCTGAGTCTTAGCCAT-----
 DaRerHBTf1 CAGAGG---GCGCAGATCAAGACCGGAGCAGCTGAGCCCCGGGCCACTACAGC-----

1483

HoSapSSDR3 -----GAGCAGCAGCAGCACTCG---CCC-----
 MuMusSCG1 -----GAGCAGCAGCAGCACTCC---CCG-----
 CaLupS1 -----GAGCAGCAGCAGCACTCG---CCG-----
 GaGalSTF2 -----GAGCAGCAGCAGCATCCC-----GAGCAGCAGCAGCAGCAG
 CoJapSSDRY -----GAGCAGCAGCAGCACTCC---CCGCAACAACAGCAGCAGCAGCAG
 AlMisS1 -----GAGCAGCAGCAGCATTCG---CCG-----
 TrScrHCC -----GAGCAGCAGCAGCACTCC---CCT-----
 LeOliS -----GAGCAACAGCAGCACTCC---CCA-----
 AnPlaSSDRY -----GAGCAGCAGCAGCACTCG---CCG-----
 LaChaTFS9 -----GAG---CAGCAGCATTCG---CCC-----
 XeLaeTFS1 -----CAACAGCAACAGCATTC---CCC-----
 BuBufTFSP -----CAGCAGCAACAGCACTCC---CCC-----
 XeSilTFS9 -----CAGCAGCAACAGCACTCC---CCC-----
 BuGarS -----CAGCAGCAGCAACTCT---CCG-----
 RhMarS -----CAGCAGCAGCAACTCC---CCA-----
 GlRugSAA -----CAGCAGCAACAGCATTC---CCG-----
 PlWals -----GAGCAGCAGCAGCACTCC---CCC-----
 ScCanS1 -----GAGCAGCAGCACTCA---CCC-----

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DaRerHBTFS -----CAG-----CAGGGCTCT--CCG-----
MoAlbHBTf1 -----CAG-----CAGGGCTCC--CCG-----
OrNilTFS9a -----CAG-----CAGGGCTCC--CCG-----
GaAcuTFS9a -----CAG-----CAGGGTTCC--CCG-----
XiMacTFS9a -----CAG-----CAGAGTTCC--CCG-----
TaRubTFS9b -----CAG-----CAGAGCTCG--CCG-----
TeNigTFS9a -----CAG-----CAGGGCTCG--CCG-----
OrLatSCC1 -----CAG-----CAGGGCTCC--CCC-----
AsMexTFS9a -----CAG-----CAGGGCTCG--CCG-----
GaMorS1 GAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAG-----CAGAGCTCC--CCC-----
MoAlbHBTFS -----CAA-----CAGGGCTCC--CCC-----
OdBonTFS -----CAG-----CAGGGCTCC--CCA-----
PoRetS -----CAA-----CAGGGATCC--CCG-----
XiMacTFS9b -----CAA-----CAGGGATCC--CCG-----
EpCois2 -----CAG-----CAGGGCTCC--CCA-----
TaRubTFS9a -----CAG-----CAGGGCTCC--CCC-----
TeNigTFS9b -----CAG-----CAGAGCTCC--CCG-----
OrNilTFS9b -----CAG-----CAGGGCTCC--CCA-----
CiMonTFS9 -----CAG-----CAGGGCTCC--CCA-----
CySemSHB -----CAG-----CAGGGCTCT--CCT-----
OrLatSCC -----CAG-----CAAAGCTCC--CCA-----
GaAcuTFS9b -----CAG-----CAGGGCTCC--CCG-----
SaSalTFS2 -----CAG-----CAGAGCTCCCCTCCC-----
GaMorS2 -----CAG-----CAGGGCTCGCCTCCG-----
AsMexTFS9b -----CAAGGC--CAGGGTTCCT--CCT-----
ClGarS -----CAGAGC--CAGGGCTCA--CCC-----
CyCarHTF13 -----CAGCAGCGGCAGGGCTCT--CCG-----
ClGarS1 -----
DaRerHBTf1 -----CAGCAGCCG--CCG-----
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1561

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HoSapSSDR3 ---CAACAGATCGCC---TACAGCCCCTTCAACCTCCCACACTACAGCCCCTCC-----
MuMusSCG1 ---CAACAGATCTCC---TACAGCCCCTTCAACCTTCCCTCACTACAGCCCCTCC-----
CaLupS1 ---CAGCAGATCGCC---TACAGCCCCTTCAAGCTCCCAGCAGTACAGCCCGTCC-----
GaGalSTF2 CAACAGCAGCTGGGC---TACGGCTCCTTCAACCTGCAGCACTACGGCTTCTCG-----
CoJapSSDRY CAACAGCAGCTGGGC---TACGGCTCCTTCAACCTGCAGCACTACGGCTCCTCG-----
AlMisS1 ---CAGCAGATCAAC---TACAGCTCCTTCAACCTCCAGCACTACAGTTCATCC-----
TrScrHCC ---CAGCAGCTCAAT---TATAGCTCCTTCAACCCCCAGCACTACAGTTCCTCC-----
LeOliS ---CAGCAGCTCAAT---TATAGCTCCTTCAACCTTCCAGCACTACAGTTCCTCC-----
AnPlaSSDRY ---CAGCAGCTCAAC---TACAGCTCCTTCAACCTGCAGCACTACGGCTCCTCC-----
LaChaTFS9 ---CAGCACATCAAC---TACGCTCCTTCAACCTTCAACTACAGCTCCTCT-----
XeLaeTFS1 ---CAGCAGCTGAAC---TACAGCTCCTTCAACCTGCAGCATTACAGCTCTTCA-----
BuBufTFSP ---CAGCAGCTGAAC---TACAGCTCCTTCAACCTGCAGCATTACAGCTCTTCC-----
XeSilTFS9 ---CAGCAGCTGAAC---TACAGCTCCTTCAACCTGCAGCATTACAGCTCTTCC-----
BuGarS ---CAGCAGCTCAGC---TACAGCTCCTTCAACCTCAACCATTACGGCTCTTCC-----
RhMarS ---CAGCAGCTCACC---TACAGCTCCTTCAACCTCAACCATTACGGCTCTTCC-----
GlRugSAA ---CAGCAGCTCAAC---TACACCTCCTTCAACCTCCAGCATTACGGGTCCACC-----
PlWals ---CAGCAGCTGAGC---TACAGCCCCTTCAACCTGCAGCACTACAACCTTACC-----
ScCanS1 ---CAGCAGCTCAAC---TACGGCTCCTTCAATATGCAACTACAGTTCATCT-----
DaRerHBTFS ---CAGCACATCAGC---TACGGTTTCCTTCAACCTTCCAGCATCTCCAGCATTACAGC-----
MoAlbHBTf1 ---CAGCACGTGACC---TACAGCCCCTTCAACCTGCAGCACTACAGTCCCCTTCC-----
OrNilTFS9a ---CAGCACGTGAGC---TACAGCCCCTTCAACCTGCAGCACTACAGC---CCCTCC-----
GaAcuTFS9a ---CAACACGTGCTCCTACAACAGCCCCTTCAACCTGCAGCACTACAGCCCCCTTCC-----
XiMacTFS9a ---CAGCACGTGACC---TACAGCCCCTTCAACCTTCCAGCACTACAGCCCCCTGTC-----
TaRubTFS9b ---CAGCACGTGACC---TACAGCCCCTTCAATCTGCAGCACTACAGCCCCCTTCC-----
TeNigTFS9a ---CAGCACATCACC---TACAGCCCCTTCAATCTGCAGCACTACAGCCCCCTGTC-----
OrLatSCC1 ---CAGAACGCCCC---TACAGCCCCTTCAACCTGCAGCACTACAGCCCCCTTCC-----
AsMexTFS9a ---CAACACGTGACC---TACGGTTTCCTTCAACCTCCAGCACTACACC-----GCC-----
GaMorS1 ---CAGCACCTGTCC---TACGGCTCCTTCAACCTGCAGCACTACAGCAGCTCCTCCGGGGGTCCGTCAACGCCCC-----
MoAlbHBTFS ---CAGCATGTGACC---TATGGGTCTTCAACCTGCAGCACTACAGCACCTCTCT-----
OdBonTFS ---CAACATGTGACC---TATGGCTCCTTCAACCTGCAGCACTACAGCGCCTCTCT-----
PoRetS ---CAGCACATCACC---TATGGCTCATTCAACCTTCCAGCACTACAGCCCCCTCTTCT-----
XiMacTFS9b ---CAGCACATCACC---TATGGCTCATTCAACCTTCCAGCACTACAGCCCCCTCTTCT-----
EpCois2 ---CAGCATGCCACC---TATGGGTCTTCAACCTGCAGCACTACAGCACCTCTCT-----
TaRubTFS9a ---CAGCACGTGACA---TACGGGTCTTCAACCTGCAGCACTACAGCACCTCTTCC-----
TeNigTFS9b ---CAGCACGTGACC---TACGGCTCCTTCAACCTGCAGCACTACAGCGCGCCTTCC-----
OrNilTFS9b ---CAGCATGTGACC---TATGGGTCTTCAACCTCCAGCACTACAGCACCAATTCT-----
CiMonTFS9 ---CAGCATGTGACC---TATGGGTCTTCAACCTTCCAGCACTACAGCACCAACTCT-----
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CySemSHB ---CAGCACATCACC---TACGGGTCCTTCAACCTGCAGCACTACAGCACCTCCTCC-----
 OrLatSCC ---CAGCACGTGAGC---TACGGGTCCTTCAACCTGCAGCACTACAGCACCTCCTCT---
 GaAcuTFS9b ---CAGCACGTGACC---TATGGGTCCTTCAACCTGCAGCACTACAGCGCCTCATCC-----
 SaSalTFS2 ---CAGCATGTCACC---TATGGTTCATTCAACCTGCAGCACTACAGCGCCTCATCC-----
 GaMorS2 ---CAGCACGTGGCC---TACGGGTCCTTCAACCTGCAGCACTACAGCCCGCCTCC-----
 AsMexTFS9b ---CAACACGTAGCG---TACGGTTCCTTCAACCTGCAGCACTACAGCACCTCGTCC-----
 ClGarS ---CAGCATGTGGCA---TATGGTTCCTTCAATCTACAGCATTACACTGCCACCTCC-----
 CyCarHTF13 ---CAGCATGTGGCC---TACGGGTGCTTCAACCTGCAGCACTACAGCAGCAGCGGC-----
 ClGarS1 -----TATGGGTCCTTCAACCTGCAGCACTACACCACGTCCACT-----
 DaRerHBTf1 ---CAGCAG-----CAGTTCTACAGCGCCCC-----

1639

HoSapSSDR3 -----TACCCG---CCCATCACCCGC-----TCA---
 MuMusSCG1 -----TACCCG---CCCATCACCCGC-----TCG---
 CaLupS1 -----TACCCG---CCCATCACCCGC-----TCG---
 GaGalSTF2 -----TACCCC---CCCATCACCCGC-----TCG---
 CoJapSSDRY -----TACCCC---CCCATCACCCGC-----TCG---
 AlMisS1 -----TACCCA---ACCATCACCCGC-----TCG---
 TrScrHCC -----TACCCG---ACCATCACCCGC-----TCG---
 LeOliS -----TACCCG---ACCATCACCCGC-----TCG---
 AnPlaSSDRY -----TACCCC---CCCATCACCCGC-----TCC---
 LaChaTFS9 -----TACCCA---ACCATCACCCGT-----TCC---
 XeLaeTFS1 -----TACCCA---ACTATCACCCGT-----GCA---
 BuBufTFS9 -----TACCCA---ACCATTACCCGT-----GCC---
 XeSilTFS9 -----TACCCA---ACCATTACCCGT-----GCC---
 BuGarS -----TACCCG---ACCATCACACGC-----TCA---
 RhMarS -----TACCCG---ACCATCACACGC-----TCA---
 GlRugSAA -----TACCCA---ACCATCACCCGC-----TCA---
 PlWals -----TACCCCT---ACTATTACACGT-----GCG---
 ScCanS1 -----TACCCCT---TCCATTCTCTCGC-----ACC---
 DaRerHBTfS -----ACTTCATTTCCT---TCCATCACCAGA-----GCG---
 MoAlbHBTf1 -----TCC---TACCCA---GCCATCTCCAGG-----GCG---
 OrNilTFS9a -----TCTTCCTACCCG---GCCATCTCCAGG-----GCACAG
 GaAcuTFS9a -----TCCGCCTACCCGGCCGCCATCTCCAGA-----GCG---
 XiMacTFS9a -----ACC---TACCCG---GCCATCTCCAGG-----CCG---
 TaRubTFS9b -----CCT---TACCCC---GGCATCTCCAGA-----GCC---
 TeNigTFS9a -----CCT---TACCCG---GCCATCTCCAGG-----GCC---
 OrLatSCC1 -----TCCTCGTACCCG---CCCATCTCCCGA-----GCG---
 AsMexTFS9a -----TCCTCCTTCCCC---TCCATCAGCCGG-----GCG---
 GaMorS1 GCCCTCTCCTCCGCCTCCGTGTGCGCCGCCGCGGCTCCTCCGTCTACCCG---ACGACGACGCGG---ACG---
 MoAlbHBTfS -----TACCCC---TCCATCACAAGA-----GCA---
 OdBonTFS -----TACCCC---TCCATCACAAGA-----GCA---
 PoRetS -----TATCCG---TCCATCACAAGA-----GCA---
 XiMacTFS9b -----TATCCG---TCTATCACAAGA-----GCA---
 EpCoiS2 -----TACCCC---TCCATCACAAGA-----GCA---
 TaRubTFS9a -----TACCCC---TCCATGACCAGA-----GCG---
 TeNigTFS9b -----TACCCC---TCCATG---AGA-----GCG---
 OrNilTFS9b -----TACCCC---TCCATCACCAGA-----TCA---
 CiMonTFS9 -----TACCCC---TCCATTACCAGA-----TCA---
 CySemSHB -----TACCCC---TCCATCACCAGA-----GCA---
 OrLatSCC -----TACCCC---TCCATCACAAGA-----GCA---
 GaAcuTFS9b -----TACCCC---TCGATCACGAGA-----GCA---
 SaSalTFS2 -----TACCCC---TCCATTACCCGC-----GCC---
 GaMorS2 -----TACCCC---TCCATCACCAGCGGGCCGTCC-----
 AsMexTFS9b -----TACCCG---TCGGTCGCACGC-----ACC---
 ClGarS -----TCCACATACCCA---TCCATTGCTCGT-----ACT---
 CyCarHTF13 -----GGCAGC---AGTGGCAGCGGC-----TCG---
 ClGarS1 -----TCGTCTCTGCCTTCCCATCATGCATCAGCCGG-----CCT---
 DaRerHBTf1 -----TACAGC-----CGA-----GCG---

1717

HoSapSSDR3 -----CAGTAC---GACTACACC---GAC---CACCAGAACTCCAGC-----
 MuMusSCG1 -----CAATAC---GACTACGCT---GAC---CATCAGAACTCCGGC-----
 CaLupS1 -----CAGTAC---GACTACACT---GAC---CACCAGAACTCCGGC-----
 GaGalSTF2 -----GAGTAC---GATTACACC---GAG---CACCAGAACTCCGGC-----
 CoJapSSDRY -----CAGTAT---GATTACACC---GAG---CACCAGAACTCCGGC-----
 AlMisS1 -----CAGTAC---GACTACACA---GAC---CACCAGAGCTCCAAC-----
 TrScrHCC -----CAGTAC---GACTACACA---GAC---CACCAGAGTTCCAAC-----

LeOliS -----CAGTAT--GACTACACA--GAC--CACCAGAGTTCCAAC-----
 AnPlaSSDRY -----CAGTAT--GATTACGGC--GAG--CACCAGAACTCCGGT-----
 LaChaTFS9 -----CAGTAC--GACTACACA--GAC--CACCAGAGCACC AAC-----
 XeLaeTFS1 -----CAGTAT--GACTACACC--GAG--CACCAGGGTTCTAGT-----
 BuBufTFSP -----CAGTAT--GACTACACA--GAG--CACCAAGGCTCCAAC-----
 XeSilTFS9 -----CAGTAT--GACTACACA--GAG--CACCAAGGCTCCAAC-----
 BuGarS -----CAGTAC--GACTACACC--GAG--CACCAAGGTTTGAAC-----
 RhMarS -----CAGTAC--GACTACACC--GAG--CACCAAGGTTTGAAC-----
 GlRugSAA -----CAGTAC--GACTACACC--GAG--CACCAAGGCTCAAAC-----
 PlWalS -----CAGTAT--GACTACACC--GAC--CACCAGAGCTCTAAC-----
 ScCanS1 -----CAGTAC--GAATATTCA--GAC--CACCAGAGTAGCAAT-----
 DaRerHBTFS -----CAGTAC--GACTATTCC--GACAGCCACCAGGGCGGGC-----AGC-----
 MoAlbHBTf1 ---CAGCAGTAC--GACTACTCC--GAC--CATCATGGGGGCGAGC--AGC-----ACCACCGCC-----
 OrNilTFS9a CAGCAGCAGTAC--GACTACCCC--GAC--CACCAGGGGGGAGGCACTGCA-----ACTGCCTCC-----
 GaAcuTFS9a ---CAGCAGTAC--GACTACTCC--GAC--CACCAAGGGGGCGGG-----GCCGCC-----
 XiMacTFS9a ---CAGCAGTACTCCGAATACTCT--GAG--CACCAGGGGGGAGGC-----GCC-----
 TaRubTFS9b ---CAACAGTAC--GACTTCTCT--GAG--CACCAGGCAGCGAACAACAGC-----GGTACGAATGCC-----
 TeNigTFS9a ---CAACAGTAC--GACTACTCC--GAG--CACCAGGGAGCAAACAACAGTGGCGGGCGCACAAAACACC-----
 OrLatSCC1 ---CAGCAGTAT--GATTACCCC--GAC--CCCAGGGAGGGGGC-----
 AsMexTFS9a -----CAGTAC--GACTACGGT--GAC--CAGCAGGGAGCCGCC-----ACCGCCGCC-----
 GaMorS1 -----CAGTAC--GACTACTCGGTGACCCCCAGCAAGGGGGCGGC-----GCCGCCCC-----
 MoAlbHBTFS -----CAGTAT--GACTACTCA--GAC--CACCAAGGTGGTGCCAAC-----
 OdBonTFS -----CAGTAT--GACTATTCA--GAC--CACCAAAGTAGCGCCAAC-----
 PoRetS -----CAGTGT--GACTATTCA--GAA--CACCAGAGCAGTGCCAAC-----
 XiMacTFS9b -----CAGTAT--GACTATTCA--GAA--CACCAGAGCAGTGCCAAC-----
 EpCois2 -----CAGTAT--GACTATTCA--GAC--CACCAAGGTGGTGCCAAC-----
 TaRubTFS9a -----CAGTAT--GACTATTCA--GAC--CACCAAGGTGGAGCCAAC-----
 TeNigTFS9b -----CAGTAC--GATTATTCA--GAC--CACCAAGGTGGCGCCAAC-----
 OrNilTFS9b -----CAATAT--GACTATTCA--GAC--CACCAAAGTGGTGCCAAC-----
 CiMonTFS9 -----CAGTAT--GACTATTCA--GAC--CACCAAAGTGGTGCCAAC-----
 CySemSHB -----CAGTAT--GACTATTCA--GAC--CACCAAAGTGGTGCCAAC-----
 OrLatSCC -----CAGTAT--GACTATTCA--GAC--CACCAAAATAGTGCCAAC-----
 GaAcuTFS9b -----CAGTAT--GACTATTCA--GAT--CACCAAGGCGGGCGCCAAC-----
 SaSalTFS2 -----CAGTAT--GACTATTCT--GAT--CACCAGGGCGGGCGCCAAC-----
 GaMorS2 -----CAGTAC--GACTACTCA--GAA--CACCAGGCGGGCGCAAACCTCCTCCAGCGGCACCGCTAACTCCTCC-----
 AsMexTFS9b -----CAGTAC--GACTACGCC--GAC--CACCACAGC-----AAC-----
 ClGarS -----CAGTAT--GATTACAGT--GAC--CACCAGGGCAGTGCTGCC-----
 CyCarHTF13 -----TACTAC--AACTACACC--GAG--CACCAGAGCCCCCGCCGGC-----
 ClGarS1 -----CAGTAC--GACTACACC--GAGCAGCCAGCCGGCTCCGCG-----
 DaRerHBTf1 -----CAGTATACAGAGTACAGC--GAGCAGCACAGC-----

1795

HoSapSSDR3 -----TCCTACTACAGCCAC-----GCGGCAGGCCAGGGC---ACCGGC
 MuMusSCG1 -----TCCTACTACAGTCAC-----GCAGCCGGCCAGGGC---TCAGGG
 CaLupS1 -----TCCTACTACAGCCAC-----GCGGCGGGCCAGGGC---TCCAGC
 GaGalSTF2 -----TCCTACTACAGCCAC-----GCCGCCGGCCAGAGC---GGAAGC
 CoJapSSDRY -----TCCTACTACAGCCAC-----GCTGCCGGGCAGAGC---GGAGGG
 AlMisS1 -----TCCTACTACAGCCAC-----GCTGCCGGCCAGAGC---ACCAGC
 TrScrHCC -----TCCTACTACAGCCAT-----GCGGCCAGCCAGAGC---ACCAGT
 LeOliS -----TCCTACTACAGCCAT-----GCGGCCAGCCAGAGC---ACCAGC
 AnPlaSSDRY -----TCCTACTACAGCCAC-----GCCGCCGGGCAGAGC---AGCAGC
 LaChaTFS9 -----TCTTACTACAGCCAT-----GCGGCAGGCCAGAGT---TCCAAC
 XeLaeTFS1 -----ACCTATTACAGTCAT-----GCAAGTGGCCAGAAT---TCTGGT
 BuBufTFSP -----TCTTATTACAGTCAC-----GCAAGCGGTCAGAAT---TCTGGT
 XeSilTFS9 -----TCTTATTACAGTCAC-----GCAAGCGGTCAGAAT---TCTGGT
 BuGarS -----ACCTACTATAGCCAT-----GCTGCAGGCCAGAGC---TCCAAC
 RhMarS -----ACCTACTATAGCCAT-----GCTGCAGGCCAGAGC---TCCAAC
 GlRugSAA -----TCTTATTACAGCCAC-----GCCGCTGGCCAAAGC---TCAAGC
 PlWalS -----ACCTACTACAGCCAC-----GCTGCTGGCCAGAGC---TCCAAC
 ScCanS1 -----TCCTATTACAGCCAT-----GCTGGGGGGCAAACC---ACAGGC
 DaRerHBTFS -----TCCTATTACAGCCAT-----GCTGGA--GGTCAGAGC---TCCGGG
 MoAlbHBTf1 -----TCCTACTACAGTCAT-----GCGGGGGCGGGGCAGAGT---CCGGGG
 OrNilTFS9a -----TCCTACTACAGCCAC-----GCGGGGGCGGGGCAGAGC---TCGGGG
 GaAcuTFS9a -----GGCTACTACAGCCAC-----GCGGGGGCGGGGCAAGGC---TCAGGG
 XiMacTFS9a -----TCCTACTACAGCCACCGGGGGGCGGGGCGGGTCAGGGC---TCCGGT
 TaRubTFS9b -----TCCTACTACAGCCAC-----GCAGGGGGCGGGGCAGGGG---GTCGGG
 TeNigTFS9a -----TCCTACTACAGCCAC-----GCCGGGGCGGGTCAGGCC---TCGGGG
 OrLatSCC1 -----TTCTACAGCCCT-----GCAGGGGGCGGGGCAGGGT---TCTGGG

AsMexTFS9a -----TCATACTACAGCCAC-----GCCGCAGGTCAAGGC---TCCGGG
 GaMorS1 -----TCGTACTACGGCCAG-----GGC
 MoAlbHBTFS -----TCCTACTACAGCCAT-----GCAGCTGGCCAAGGC---TCCGGC
 OdBonTFS -----TCCTACTACAGCCAT-----GCAGCTGGCCAAGGC---TCCAGC
 PoRetS -----TCTTACTACAGCCAT-----GCAGCTGGCCAAGGT---TCCAGC
 XiMacTFS9b -----TCTTACTACAGCCAT-----GCAGCTGGCCAAGGT---TCCAGC
 EpCois2 -----TCCTACTACAGCCAC-----GCGGCGGGCCAAAGC---TCCGGC
 TaRubTFS9a -----TCCTACTACAGCCAC-----GCAGCGGGCCAGGGC---TCTGGG
 TeNigTFS9b -----TCCTACTACAGCCAC-----ACGACGGGCCAGGGC---TCCGGG
 OrNilTFS9b -----TCCTACTACAGTCAT-----GCAGGTGGCCAAGGC---TCAAGC
 CiMonTFS9 -----TCCTACTACAGCCAT-----GCAGCTGGCCAAGGC---TCAAAC
 CySemSHB -----TCCTACTACAGCCAT-----GCAGCCGGTCAGGGC---TCCGGT
 OrLatSCC -----TCTTACTACAGCCAT-----GCAGCTGGTCAAGGC---TCCAAC
 GaAcuTFS9b -----TCCTACTACAGCCAG-----AGC-----CAGGGC---TCCGGC
 SaSalTFS2 -----TCTTATTATAGCCAT-----GCAGGTGCCCAAGGC---TCAGGG
 GaMorS2 TCCGCCGCCGCCGCGACCGCCGCCGCGTCCCTCTACTAC-----GGCGGGCAGGGCTCCTCCGGC
 AsMexTFS9b -----TCGTACTACAGCCAC-----GCCGCCGGCCAAGGC---TCCGGC
 ClGarS -----TCCTACTACAAC-----CAAGGT---TCAGGG
 CyCarHTF13 -----TCCTACTACAGCCAG-----
 ClGarS1 -----TCCTATTACTCGGTG-----GGCCAGGGC-----TCG
 DaRerHBTf1 -----GCCTACTACAGCCCG-----

1873

HoSapSSDR3 CTCTACTCCACCTTCACCTACATG-----AACCCC-----GCTCAGCGCCCCATGTACACCCCCATC
 MuMusSCG1 CTCTACTCCACCTTCACCTACATG-----AACCCC-----GCGCAGCGCCCCATGTACACCCCCATC
 CaLupS1 CTCTACTCCACCTTCACCTACATG-----AACCCC-----GCGCAGAGGCCCATGTACACCCCCATC
 GaGalSTF2 CTTTACTCCACCTTCACCTACATG-----AACCCC-----ACGCAGCGCCCCATGTACACCCCCAATC
 CoJapSSDRY CTCTACTCCACCTTCACCTACATG-----AACCCC-----ACGCAGCGTCCATGTACACCCCCATT
 AlMisS1 CTCTACTCCACCTTCACCTACATG-----AACCCC-----ACCCAGAGGCCGATGTACACCCCCATT
 TrScrHCC TTCTATTCCACCTTCACGTACATG-----AACCCC-----GCCCAAAGGCCATGTACACGCCCATT
 LeOliS TTCTATTCCACCTTCACGTACATG-----AAC-----CACCAAAGGCCATGTACACGCCCATT
 AnPlaSSDRY CTGTACTCCACCTTCACCTACATG-----AACCCC-----ACGCAGCGCCCCATGTACACCCCCATC
 LaChaTFS9 CTATACTCGACTTTTACCTATATG-----AGCCCC-----ACCCAGCGTCCAATGTACACCCCCATT
 XeLaeTFS1 CTCTACTCCACCTTTAGCTACATG-----AATCCA-----AGCCAACGCCCTTGTACACCCCTATT
 BuBufTFSP CTCTACTCCAACCTTTAGCTACATG-----AATCCA-----AGCCAGCGCCCCATGTACACGCCATT
 XeSilTFS9 CTCTACTCCAACCTTTAGCTACATG-----AATCCA-----AGCCAGCGCCCCATGTACACGCCATT
 BuGarS CTCTACTCTACCTTCAGCTACATG-----AACCCA-----AGCCAGCGTCCCATGTACACTCCTATC
 RhMarS CTCTACTCCACCTTCAGCTACATG-----AACCCA-----AGCCAGCGTCCCATGTACACTCCTATC
 GlRugSAA CTCTACTCAACGTTTCAGCTACATG-----AACCCC-----AGTCAACGCCCATGTACACCCCCATT
 PlWalS CTCTACTCCACTTTCTCCTACATG-----AACCCC-----ACTCAGCGCCCCATGTATACCCCTATT
 ScCanS1 CTGTACTCCACCTTTGCCTACACG-----AGTCCA-----GCCCAGCGTCCCATGTACACACCCATT
 DaRerHBTFS CTGTACTCCACCTTCAGCTACATG-----AGTCCA-----AGCCAGAGGCCCATGTACACACCCATT
 MoAlbHBTf1 CTATACTCGACTTTTCAGCTACATG-----AGCAGCCCC-----AGCCAGAGGCCCATGTACACACCCATA
 OrNilTFS9a CTGTACTCAACTTTTCAGCTACATG-----AGCAGCCCC-----ACCCAGAGGCCCATGTACACGCCATA
 GaAcuTFS9a CTGTACTCGACTTTTCAGCTACATG-----AGTAGCCCC-----AGCCAGAGGCCCATGTACACGCCGATA
 XiMacTFS9a CTGTACTCGACTTTTCAGCTACATG-----GGCAGCCCC-----AACCAGAGGCCCATGTACACGCCCATC
 TaRubTFS9b CTGTACTCAACTTTTCAGCTACGTG-----AGCAGCCCC-----AGCCAGAGGCCCATGTACACACCCATC
 TeNigTFS9a CTGTACTCAACGTTTCAGCTATGTG-----AGCAGCCCC-----AGCCAGAGGCCCATGTACACACCCATC
 OrLatSCC1 CTGTACTCGACTTTTCAGTTACATG-----AGCAGCCCC-----AGCCAGAGGCCCATGTACACCCCCATC
 AsMexTFS9a CTCTACTCCACCTTTTCAGCTACGTG-----AGCCCC-----AGCCAGCGGCCCATGTACACCCCCAATC
 GaMorS1 ATGTTCTCGGCCTTCGGCTACATGCTCCCCGGCAGCCCCCCCCGCGGCCAGAGCCAGAGGCCCATGTACACGCCCATC
 MoAlbHBTFS CTCCATTCAACCTTCAGCTACATG-----AACCCA-----AACCAGAGGCCCATGTACACCCCCAATC
 OdBonTFS CTGTACTCCACTTTTCAGTTACATG-----AGCCCC-----AGCCAGAGGCCGATGTACACCCCCAATT
 PoRetS CTGTACTCCACCTTCAGCTACATG-----AGCCCC-----AGCCAGAGGCCGATGTACACCCCCAATA
 XiMacTFS9b CTGTACTCCACCTTCAGCTACATG-----AGCCCC-----AGCCAGAGGCCGATGTACACCCCCAATA
 EpCois2 CTGTACTCCACCTTCAGCTACATG-----AGCCCA-----AGCCAGAGGCCGATGTACACCCCCGATC
 TaRubTFS9a CTTTACTCCACCTTCAGCTACATG-----AACCCC-----AGCCAGAGGCCCATGTACACCCCCATC
 TeNigTFS9b CTCTACTCCACCTTCAGCTACATG-----AACCCC-----AGCCAGAGGCCCATGTACACCCCCATT
 OrNilTFS9b TTGTACTCCACCTTTAGCTACATG-----AGCCCC-----AACCAGAGGCCGATGTACACCCCCAATT
 CiMonTFS9 CTGTATTCCACCTTTAGCTACATG-----AGCCCC-----AGCCAGAGGCCCATGTATACCCCCGATT
 CySemSHB CTCTACTCCACCTTCAGCTACATG-----AGTCC-----AGCCAGAGGCCCATGTACACCCCCGATC
 OrLatSCC ATGTACTCCACCTTCAGCTACATG-----AGCCCC-----AGCCAGAGGCCCATGTATACCCCCATC
 GaAcuTFS9b CTGTATTCCACT---TCGGCTACA-----TGCCCC-----AGCCAGAGGCCGATGTACACCCCCATC
 SaSalTFS2 CTCTATTCCCTTCAGCAGCTATATG-----AGCCCC-----AGCCAGAGGCCCATGTATACCCCCATC
 GaMorS2 CTCTACGCCGGCTTCGGCTACATG-----AACCCC-----AGCCAGAGGCCCATGTACACCCCCATC
 AsMexTFS9b CTCTACTCCACCTTCAGCTACATG-----AGTCCGGGA-----GCACAGAGGCCCATGTACACCCCCGATC
 ClGarS CTCTACTCCACATTTAGCTACATG-----AGTTCT-----ACCCAGAGGCCCATGTACACTCCTGTC
 CyCarHTF13 ---TACCCCGCCTTCAGCTAC-----CAGAGGCCCATGTACACCCCCGATC

ClGarS1 CTTTATTCCACCTTTAACTACATG-----AGTTCT-----AGCCAGAGGCCCATGTACACCCCCATC
DaRerHBTf1 ---TACCCACATTTCAGCTACAGC-----AGACCCCGTACACCCCTGCA

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HoSapSSDR3 GCCGACACCTCTGGGGTCCCTTCCATCCCG---CAGACCCACAGCCCC---CAGCACTGGGAA-----CAACCCGTC
MuMusSCG1 GCTGACACCTCCGGGGTCCCTTCCATCCCG---CAGACCCACAGCCCC---CAGCACTGGGAA-----CAACCAGTC
CaLupS1 GCCGACACCTCCGGGGTCCCCTCCATCCCG---CAGACGCACAGCCCC---CAGCACTGGGAA-----CAGCCTGTC
GaGalSTF2 GCAGACACGTCTGGGGTGCCTTCCATCCCG---CAGACCCACAGCCCCGCAACAGCACTGGGAA-----CAGCCGGTC
CoJapSSDRY GCAGACACGTCTGGGGTGCCTTCCATCCCG---CAGACCCACAGCCCC---CAGCACTGGGAA-----CAGCCGGTC
AlMisS1 GCAGACACTTCTGGGGTCCCCTCCATCCCC---CAGACCCACAGCCCCA---CAGCACTGGGAA-----CAGCCAGTC
TrScrHCC GCAGACACTACCGGAGTCCCTTCCATTCCC---CAGACCCACAGCCCCA---CAGCACTGGGAA-----CAGCCGGTC
LeOliS GCAGACACTACCGGAGTCCCTTCCATTCCC---CAGACCCACAGCCCCG---CAGCACTGGGAA-----CAGCCTGTC
AnPlaSSDRY GCAGACACTTCTGGGGTCCCCTCCATCCCC---CAGACCCACAGCCCCG---CAGCACTGGGAA-----CAGCCGGTC
LaChaTFS9 GCAGACACCGCGGGGTGCCCTCTATCCCC---CAGACCCATAGCCCCA---CAACTGGGAA-----CAGCCAGTC
XeLaeTFS1 GCAGACACAACAGGGGTTCCATCAATCCCC---CAGACACACAGCCCCA---CAACTGGGAG-----CAGCCGGTC
BuBufTFS9 GCAGACACGACGGGAGTCCATCCATCCCC---CAGACACACAGCCCCA---CAACTGGGAG-----CAGCCTGTC
XeSilTFS9 GCAGACACGACGGGAGTCCATCCATCCCC---CAGACACACAGCCCCA---CAACTGGGAG-----CAGCCTGTC
BuGarS GCAGACACGACGGGGTCCCATCCATTCCC---CAGACACATAGCCCC---CAACTGGGAG-----CAACCAGTC
RhMarS GCAGACACGACGGGGTCCCATCCATTCCC---CAGACACATAGCCCC---CAACTGGGAG-----CAACCAGTC
GlRugSAA GCAGACACGACGGGGTCCCATCCATCCCC---CAAACCCACAGCCCC---CAACTGGGAG-----CAACCGTC
PlWals GCTGACACAACAGGGGTTCCCTCCATTCCA---CAGACCCACAGCCCC---CAGCACTGGGAG-----CAGCCAGTC
ScCanS1 GCTGACACCACAGGAGTCCCTTCCATCCCC---CAAACCCACAGTCCA---CAGCACTGGGAG-----CAACCCGTC
DaRerHBTfS GCTGACTCTACAGGGGTGCCCTCCATCCCTCAATCCAACCACAGTCCG---CAGCATTGGGAC---CAGCAGCCGGTC
MoAlbHBTf1 GCCGACACCACGGGGTGCCCTCCATCCCCCAGAAC-----AGCCCG---CAGCACTGGGAG---CAGGCTCCGGTT
OrNilTFS9a GCCGACAACACAGGGGTGCCCTCCATCCCGCAGAAC-----AGCCCG---CAGCACTGGGAT---CCAGCGCCGGTT
GaAcuTFS9a GCCGACACCACGGGGTCCCCTCCATCCCGCAGAGC-----AGCCCG---CAGCACTGGGAG---CAGGCTCCGGTC
XiMacTFS9a GCCGACAACGCGGGGTGCCCTCCATCCCCAGAGG-----AGCCACAGCAGCACTGGGAG---CAGGCTCCGGTT
TaRubTFS9b GCCGACAACACGGGTGTGCCACCATCCCGCAGAGC-----AGCCCG---CAGCACTGGGAG---CAGGCGCCAGTT
TeNigTFS9a GCTGACAACACGGGTGTGCCACCATCCCGCAGAGC-----AGCCCG---CAGCACTGGGAG---CAGGCGCCAGTT
OrLatSCC1 GCCGACAACGCGGGGTGCCCTCCATCCCCAGGGC-----AGCCCG---CAGCACTGGGAG---CAGGCGCCGGTC
AsMexTFS9a ACCGATTCCGCGGGGTGCCCTTCCATTCTTTCAGCTGGCCACAGCCCC---CAGCACTGGGAC---CAGCAGCCTGTC
GaMorS1 GCCGACACCACGGGGTGCCCTCCGTTGCCCCAGAGCAGCCACAGCCCC---CAGCACTGGGAGCACCAGACCCCGTC
MoAlbHBTfS GCCGACACCACGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCA---CAGCACTGGGAA---CAGCAGCCATT
OdBonTfS GCTGACAGCGCTGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCA---CAGCACTGGGAG---CAGCAGCCCATC
PoRetS GCCGACAGCACCAGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCA---CAGCACTGGGAG---CAGCAGCCTGTG
XiMacTFS9b GCCGACAGCACTGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCA---CAGCACTGGGAG---CAGCAGCCGATT
EpCois2 GCTGACACCACGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCG---CAGCACTGGGAG---CAGCAGCCATT
TaRubTFS9a GCCGACAACGCGGGTCCCCTCCGTTCCC---CAGACCCACAGTCCG---CAACTGGGAG---CAGCAGCCATT
TeNigTFS9b GCCGACAATGCCGGGTCTCCTCCGTTCCC---CAGACCCACAGTCCG---CAGCACTGGGAG---CAGCAGCCATT
OrNilTFS9b GCTGACACCACGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCG---CAGCACTGGGAG---CAGCCATT
CiMonTFS9 GCTGACACCACGGGGTGCCCTCTGTGCC---CAGACCCACAGTCCG---CAGCACTGGGAT-----CAGCCATT
CySemSHB GCTGACACCACGGGGTGCCCTCCGTTGCC---CAGACCCACAGCCCT---CAGCACTGGGAT---CAGCAGCCATT
OrLatSCC GCTGACAGTACTGGGGTGCCATCTGTGCCA---CAGACCCACAGTCCA---CAGCACTGGGAG---CAGCAGCCATA
GaAcuTFS9b GCCGACACCACGGGGTGCCCTCCGTTGCC---CAGACCCACAGTCCG---CAGCACTGGGAG---CAGCAGCCCATC
SaSalTFS2 GCCGACCCACCGGAGTGCCCTCCGTTGCCA---CAGACCCACAGTCCA---CAGCACTGGGAG---CAGCAGCCTGTC
GaMorS2 GCCGACCCACCGGAGTGCCCAGCGTGCC---CAGACCCACAGTCCG---CAGCACTGGGAG---CAGCAGCCGTC
AsMexTFS9b GCCGACACCACGGGGTACCCTCCGTTGCC---CAGACCCACAGTCCC---CAACTGGGAG---CAGCAACCCGTC
ClGarS ACTGATACCAGTGGTGTTCGAATGTGCCT---CAGACCCACAGTCCC---CAG---TGGGAG---CAGCAGCCAGTC
CyCarHTf13 GCCGACACG-----CTGCCG---CAGGCGCACAGTCCG---CAGCACTGGGAG---CAGCAGCCGTC
ClGarS1 ACCGAGACCCAG-----TCAGGCCACAGCCCC---CAGCACTGGGAC---CAGCAGCCGGTC
DaRerHBTf1 GCGGCGCGGAT-----ACTGCACACACA-----CACCCTGGGAC---CCGACCCGTC

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HoSapSSDR3 TACACACAGCTCACTCGACCT
MuMusSCG1 TACACACAGCTCACCAGACCC
CaLupS1 TACACACAGCTCACCAGGCCT
GaGalSTF2 TACACGCAGCTCACCCGGCCT
CoJapSSDRY TACACGCAGCTCACCCGGCCT
AlMisS1 TACACACAGCTCACTAGGCCA
TrScrHCC TACACACAGCTTACTAGGCCA
LeOliS TACACACAGCTCACTAGGCCA
AnPlaSSDRY TACACACAGCTCACCAGACCC
LaChaTFS9 TATACACAACCTCACCAGGCCT
XeLaeTFS1 TACACACAGCTCACAAGACCC
BuBufTFS9 TATACACAGCTCACCAGGCC
XeSilTFS9 TATACACAGCTCACCAGGCC
BuGarS TACACACAGCTCACCAGGCCA
RhMarS TACACACAGCTCACCAGGCCA

GlRugSAA	TACACACAGCTGACCAGGCCA
PlWals	TATACACAGCTCACCCGGCCT
ScCanS1	TACACCACCCTGACCCGACCT
DaRerHBTFS	TACACGCAGCTGTCCAGACCA
MoAlbHBTf1	TACACCCAGCTCACCAGACCC
OrNilTFS9a	TACACCCAGCTCACCAGACCC
GaAcuTFS9a	TACACCCAACTCCCCAGGCC
XiMacTFS9a	TACACCCAGCTAACCCGACCC
TaRubTFS9b	TACACCCAGCTCACCAGACCC
TeNigTFS9a	TACACCCAGCTCACCAGACCC
OrLatSCC1	TACACGCAGCTGACCCGGCCC
AsMexTFS9a	TACACACAGCTGACGAGACCC
GaMorS1	TACACCCAGCTCACCAGGCC
MoAlbHBTFS	TACACACAGCTGTCCAGGCCA
OdBonTFS	TACACACAACCTGTCCAGGCC
PoRetS	TATACCCAGCTGACCCGGCCC
XiMacTFS9b	TACACACAACCTGTCCAGGCC
EpCois2	TACACACAGCTCTCCAGGCCA
TaRubTFS9a	TACACGCAGCTCTCCAGGCCA
TeNigTFS9b	TACACGCAGCTCTCCAGGCCA
OrNilTFS9b	TACACACAACCTTTCCAGGCC
CiMonTFS9	TACACACAACCTCTCCAGGCC
CySemSHB	TACACACAACCTGTCCAGACCG
OrLatSCC	TACACCCAGCTGTCCAGACCG
GaAcuTFS9b	TACACACAGCTCTCCAGGCCT
SaSaltFS2	TACACCCAGCTCTCCAGGCC
GaMorS2	TACACGCAGCTGTCCCGGCC
AsMexTFS9b	TACACCCAGTTGTCTCGACCT
ClGarS	TATACCCAGCTCTCCCGGCCT
CyCarHTF13	TACACCCAGCTGTCCAGGCC
ClGarS1	TACACACAGCTCTCCGGACCC
DaRerHBTf1	TACACACAGCTGTCCAGACCC