A

Acyrthosiphon_pisum
Ades_aegyptii
Anopheles_arabiensis
Anopheles_gambiae
Anopophlora_glabripennis
Apis_mellifera
Atta_cephalotes
Bombyx_mori
Ceratitis_capitata
Culex_quinquefasciatus
Daphnia_pulex
Daphnia_pulicaria
Diaphorina_citri
Drosophila_grimshawi
Drosophila_melanogaster
Drosophila_pseudoobscura
Drosophila_virilis
Ephemera_danica
Glossina_morsitans
Heliconius_melpomene
Lepeoptitherius_salmonis
Litopenaeus_vannamei
Lutzomyia_longipalpis
Mayetiola_destructor
Nasonia_vitripennis
Pediculus_humanus
Phlebotomos_papatasi
Rhodnius_prolixus
Tribolium_castaneum
Consensus

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                    310       320       330       340       350       360       370       380       390
Acyrthosiphon_pisum GAAGGTCTGAGGCAAAATC------GCT-------------------------------------------------------TA-CCCT
Ades_aegyptii       GAAGGTCTGAGAG-GAAG---------CAATTT-----------------------------------------------------ATGTC
Anopheles_arabiensis GAAGGTCTGAGAT-AAGG---------CATGCGAA-----------------------------------------------------TATGCC
Anopheles_gambiae   GAAGGTCTGAGAT-AAGG---------CATGCGAA-----------------------------------------------------TATGCC
Anopophlora_glabripennis GAAGGTCTGAGGCAGG--C------AAC-------------------------------------------------------TACC-CC
Apis_mellifera      GAAGGTCTGAGATTAAACC------AAT-------------------------------------------------------AAACATT
Atta_cephalotes     GAAGGTCTGAGATAAGATT------GTT-------------------------------------------------------AAACGTT
Bombyx_mori         GAAGGTCTGAGTAAAAGCCACCAGTGTTTTGTG-----------------------------------------------------TA-CATT
Ceratitis_capitata  GAAGGTCTGAGAGTTGGTC---AAAGTTCATT-----TCA-------AACATG--CTGTGGTG-----------CGTGTGAACTTAAACCGATGCATTTT
Culex_quinquefasciatus GAAGGTCTGAGAG-TAAG---------CATGTGGA-------------------------------------------------AAGGCC
Daphnia_pulex       GAAGGTCTGAGACGAGG--------CTTTT-----------------------------------------CTCATTGTCGGAGAGTG-----ATGCT
Daphnia_pulicaria   GAAGGTCTGAGAAAAAG---------CTGTG-----------------------------------------CTCTTGTTTGTAGAGTTC---CATGTT
Diaphorina_citri    GAAGGTCTGAGTTTTGGAT-------TCAAATGT-----------------------------------------------------ACTTT
Drosophila_grimshawi GAAGGTCTGAGAATTGGTC---AAAGCTCCCTTGT--TTGTGTGCACAACAAGCGATTTGCTGTTAAAGGTGATCGTTTGTCGCGGAGT---TTCATTTC
Drosophila_melanogaster GAAGGTCTGAGAATCGGCC---GA-GCCAGCT-GT--TTGT---TGC-----------------------------------GGC---TTCATTTC
Drosophila_pseudoobscura GAAGGTCTGAGATTTGGCC---AA-GCCTCCTTGT-GTTGT---TACAACATGCAGTGCATCG--AGAGGTGCCTGTGTGTCG-GAGGC---TTAATTTC
Drosophila_virilis  GAAGGTCTGAGATATGGTC---AAAGCTCCCTTGTTGCTGT---AACAACATACAAAA-GCCG--AGAGGTGATTGTGTGTCGCGGAGC---TTCATTTT
Ephemera_danica     GAAGGTCTGAGG--TAGGG-------CCAACTG-----------------------------------------------------ACACT
Glossina_morsitans  GAAGGTCTGAGAATTGGTC---AAAGTTCGCT-----TCA-------AACGTGTCCCGTGTTGTTTCTTAGGGGCATGTGAACTTAAACTAATCAATTTC
Heliconius_melpomene GAAGGTCTGAGTAAAGGTC-TAATTGTTCTTTA-----------------------------------------------------TA-CATT
Lepeoptitherius_salmonis GAAGGTCTGAGAGAAGAGC-----CG-C--ATA-----------------------------------------------------TA---CC
Litopenaeus_vannamei GAAGGTCTGAGAG-AGGAG-------TCATGT-----------------------------------------------------ATGCT
Lutzomyia_longipalpis GAAGGTCTGAGATAAGGT-----GGGCCCTCG-----------------------------------------ATTTGTGGGAGGGT---TTA-TGTT
Mayetiola_destructor GAAGGTCTGAGAAAAGGT-----GTGCTTCAT-----------------------------------------GTTGAAGTGTGTGT---TTAACATT
Nasonia_vitripennis GAAGGTCTGAGATAAGGTC------ATT-----------------------------------------------------GAACGCT
Pediculus_humanus   GAAGGTCTGAGA-AAGGGC-----CGTC--ATA-----------------------------------------------------TAACATT
Phlebotomos_papatasi GAAGGTCTGAGTGAAGGT-----GGATTCTCG-----------------------------------------GTCTG--GGAGGGT---CTA-TGTT
Rhodnius_prolixus   GAAGGTCTGAGATCAGGA--------CTGTCTTTC-----------------------------------AACCTCTTAATTGGAGGGT--------GTT
Tribolium_castaneum GAAGGTCTGAGATGTG--T------CTT-----------------------------------------------------TAATGCT
Consensus           GAAGGTCTGAGATAAGGTC---AAAG+TATCTGGT-GTTGT---TACAACATGCA+TGTG+TGTTAGAGGTG+CTGTTTGTCGGAGAGTT-ATTAATGTT

                    410       420       430       440       450       460       470       480       490
Acyrthosiphon_pisum CCAGCCGGGGGCCTTCT---TAATAAAGTTGGGCAGGAGAACCAGAAA---TTGGT---CCAGTTCTAA-----------------------GATTTT
Ades_aegyptii       TCAGCAAGACAGCCTTTT---GA--CAGGGGCGTTGTACAACTAGAAA---TGCAGTGTGCGTCTTGGA-----TTTG-----GAGTTGT----AGTGTC
Anopheles_arabiensis TCAGCAAGGCAGCTCTTT---GAG--AAGAGCGTT-CGCTACCAGCAA---TACATCA---GTTGTGGA-------TG--------ACGC----AGTGTC
Anopheles_gambiae   TCAGCAAGGCAGCTCTTT---GAG--AAGAGCGTT-CGCTACCAGCAA---TACATCA---GTTGTGGA-------TG--------ACGC----AGTGTC
Anopophlora_glabripennis CTAGCTGGGGGCTCGC------ATATTGCGAGACAAGGGAACCAGAAA---TATGT---CAAC--GAAG-----------------CATCAA
Apis_mellifera      CTAGACGGATGATACC------ATAAGGGTATGTACGGGAACCAGAAA---TAGCT---TTA---CGTT-----------------GC-CAA
Atta_cephalotes     CTAGCCGGACGGCATC------ATAATGATGCGTACGAGAACCAGAAA---TAGCT---TTG---CGTT-----------------TTTCAA
Bombyx_mori         CTAGCCGGATGCTTCCT---TAACAAGGATGAAGAGG-GAACCAGAAA---TTA------TGGTACAAT-----------------TTCT--
Ceratitis_capitata  CTAGCAGGAAACTTGTAT-----GATTAAGAGGCGAAGGGACAAGAAA---TTC------TGAAA-----------------------
Culex_quinquefasciatus TCAGCAAGGTCCCCTCTT---GAACTCGGGGGATTTCGCTACCAGAAAACGTGCGTGGCACGATTTGAAGCGGGTCTGTCCAAAGGTCGT----CGTGGC
Daphnia_pulex       CTAGCCGGGCAGCCATTT-----CGCGAAGGCGCAGGGGAATAGAAG---AATATCGATTGGAGTGTC-----------------GTTTAG
Daphnia_pulicaria   CTAGCCGGACAACCTTCT-----TGCGAAGGTGCAGGGGAATAGAAG---AGTATCGAATGGAATGTT-----------------ATCTG-
Diaphorina_citri    CTAGCCGGAAGTCTCTCT---CACCAGAGAGAGTGAGGGAACCAGAAA-----TAGCGCACGCTCCGGGC----------CCCATT--TAAACCC
Drosophila_grimshawi CCAGCAGGAAACCTGTGT-----GATCGCAGGGCGAAAGTACCAGAAA---TCC------TGCCTCGCT-----------------GCT---
Drosophila_melanogaster CCAGCAGGAAACCTGTGT-----GATTGCAGGGCGAAAGTACCAGAAA---TCC------TGCTACCAG-----------------GT----
Drosophila_pseudoobscura CTAGCAGGAAACCTGTGT-----GATTGCAGGACGAAAGTACCAGAAA---TAC------TGCGGCTTG-----------------GC----
Drosophila_virilis  CTAGCCGGAAACTTGTGT-----AATCACAAGGCGAAAGTACCAGAAA---TGC------TGCAGTATG-----------------GCT---
Ephemera_danica     CTAGCAGGGTGCCCCCAT---AGTTTAGGGGGGTGGGGGAGCAGAAAA-----T-----------------------CCTGTC--TAGTGGC
Glossina_morsitans  CTAGCAGGAAACTTGTAT-----AATTAAGAGGCAAAAGGACAAGAAA---TTC------TGCA-----------------------
Heliconius_melpomene CTAGCCGGTAGTCTTTCTTT---TTATAAGAAAGGCAAGG-GAACCAGAAA---TTA------CAATGCCAA-----------------GTTT--
Lepeoptitherius_salmonis CTAGCAGGGTACTTTCTTTGTTATAAGGAAGAGAAGG--GATCAGAAA---CAAGG---TCAAAGTGAG-----------------TATGCA
Litopenaeus_vannamei CTTGCAGGGCAACCTCCA---AA---AGGAGGGACAGGACAACAGAAAG---GCCCTG-----ACTGGA--------G-------GTCATCAAGGACACC
Lutzomyia_longipalpis CTAGCAGGACACTCAACT-----AATGAGA-GATGGGGGGACCAGAAA---TTC------CTGTGT-----------------GG
Mayetiola_destructor CTAGCTGGATGCTTTTAT-----AGTTAGAAGGTGGGGGGACCAGAAA---TTC------TGTTATTAT-----------------TTTAAT
Nasonia_vitripennis CCAGCCGGGCGATGCC------GTGATGGCATGCGCGAGAACCAGAAA---CAGCC---CGAG--CGCG-----------------TCCTAA
Pediculus_humanus   CTAGCAGGATGACGT----GATAATAGCGTGCGAGGG--AACCAGAAA---CA-GT---CCGAATTCAG-----------------AAT---
Phlebotomos_papatasi CTAGCTGGACACTTAATT-----AACAAGA-GATAGGGGGACCAGAAA---TTT------CTGTGC-----------------A-
Rhodnius_prolixus   CC--CTAAATAA---------------GGGGCGCGGGGTAACAGAAAA---AGCA----ATGACATATC-----------------CTTGG-
Tribolium_castaneum CCAGAAGGGCGCTTGC------ATTTTGCAAGGCGAGAACACCAGAAA---TCTG----CGAT--GAGG-----------------TTTCAA
Consensus           CTAGCAGGACACCTTTTT-GT+ATAT+GGAGGGCGGGGGAACCAGAAA---TACATCG+CTG+TGTGAG-----T-TG-------GTCGTC--TGTTGAC

                    510       520       530       540       550       560       570       580       590
Acyrthosiphon_pisum TGGGTCTGAGATGCCT-------CTG-------GTTGAGAC-------TACAATCT-----TGGTTACTGT-----------------TGGAAC--CTCC
Ades_aegyptii       CCAATCTGGGTTTC----CCGGGGATA--CTC-----AAGA---ATGCCCGATTTC----ACTACAGTTGC-CGATTCC----CAAGTTGGAA--ATGTA
Anopheles_arabiensis CTGGCC---GCTAC----------------TT----GAAAG---GTG-CAAACCTC----TCGGTTTCGGCTCGGGCAC----TGATTGAAAACAGCGGA
Anopheles_gambiae   CTGGCC---GCTTC----------------TT----GAAAG---GTG-CAAACCTC----TCGGTTTCGGCTCGGGCAC----TGATTGAAAACAGCGGA
Anopophlora_glabripennis --AGCCAAGGAT-----------T-AC---TTACGT-ATAGG--TGA-TATGCCTA---------GTTGGT-----------------TGGAAG--CCCT
Apis_mellifera      TTAGCCCAGGAAACT--------TCAT---TTGAAGTAGAGG--TACTTGGAAACG---------AAAAGA-----------------TGGAAA--CCCG
Atta_cephalotes     AATGCTGAGGACGCT--------TTTT---TAAAAGCAGAGG--CGACTGGAAACG---------TGAAGT-----------------TGAAAT--CTCG
Bombyx_mori         --AGTCTAGGATTCCTT----GTCTGT---GTTGATAGGGAA--GAGACATAGTTA-----TTGTTACTAT-----------------TGGAAA--CCCT
Ceratitis_capitata  ATTCCAATAGGTTTT--------------------AGGAC---------CTTACG----AATATT--CAT-----------------TGAAAT--CCTT
Culex_quinquefasciatus GCCATCAACAATTCATCGCCTTAGATGAGCTTGTTGGAATC---ATGGTGTATCGG----ACGACTTTGGC-CAGGTCCGCCTCAATTGAGAA--GCGAA
Daphnia_pulex       ACCCATGATGTCCATTA--------------------GGACT--AGGCGGAGAACT----CCATTT-CGAT-----------------TGGAACTGCTTC
Daphnia_pulicaria   -CCCATGATGCCCTTTGT-------------------GGGTT--AGGCGTAAACTT----CCAAATACGAT-----------------TGGAACAGCCTC
Diaphorina_citri    CCGTCTGTGAAACC----------------TCCTCGTAGGGCCTGAGACGAAGTCC----GGAGT--GGGC----------------GATGGAACCTCTCA
Drosophila_grimshawi GTTATTGTATTGTTGTTG----------TTGCCAACGACG--ATGACGACGACG----CGCGTTG-CAT-----------------TGAAAT--CTTT
Drosophila_melanogaster GTTGCCGTTGCCCCC----------------GG----TGAC-------CGCCG-C-----CTGGTTGGCAT-----------------TGAAAC--CTTT
Drosophila_pseudoobscura GTTGCCATCGGCGCT----------------CGCGTCTGAC-------TGCCG-C-----CTTGTTG-CAT-----------------TGAAAA--CTTT
Drosophila_virilis  GTTGCCG-CACCGCT----------------TGCCGTTTGC-------CGCCGGC-----CATGTTG-CAT-----------------TGAAAA--CTTT
Ephemera_danica     TAGCCTG-GGATCC----------------TCTTTG-AGGG---GAGGTGCAGCCG----CTATT--CAGT-----------------TGAAACCTCCCA
Glossina_morsitans  -CTCCA-----TTTT----------------ATGGC----------------GCGTG--CAT-----------------TGGAAA--CTTT
Heliconius_melpomene --AGCTTGGGATACCT-----AACCGA---GTGGTTAAGGAG--TAGGTGTA-TCC-----TTGGTATTGT-----------------TGGAAA--CTCT
Lepeoptitherius_salmonis -TAACTGTTGATATAAG----TATTTTCAACTTATTGAGG--------TTCTGTGC-----TTTTCTTTGAA-----------------TGAAAA--CTCT
Litopenaeus_vannamei TTGGACACTAATCT----------------AAAG---GTGGAGATTCCT----CCAGTCTTGGT-----------------TGGGAGTCCTGTG
Lutzomyia_longipalpis CATCCTTTTGTTGC----------------------------------------ACAT-----------------TGAAAT--CTCC
Mayetiola_destructor TTTGATTTTGGTGTC----------------ACAGCC--AAAACGAATTTA----AATAATAACAT-----------------TGAAAT--CTCC
Nasonia_vitripennis --AGCCGGGGATGCTCAGATGCCTTTT---TTTATAAAGAGG--CGAGCGGAGGCGGCGCTTGGCTTGGGA-----------------TGGAAA--CTCG
Pediculus_humanus   -TAGTCGGGGACATCAT----TCTTGT-GATTGATTGAGA--------CAAAGTTC-----TGTAATTCGT-----------------TGGAAC--CCCT
Phlebotomos_papatasi -----TTTAG--AC----------------------------------------ACAT-----------------TGAAAT--CTTC
Rhodnius_prolixus   ---CAAGA-GTTTAATGC----------------GGA-T-AAGTGG----------TT---GG-----------------TGGGATAGCC-C
Tribolium_castaneum --AGCCAAGGAT-----------TCGC---TCTGGCGATAGG--TGG-TGGAGCTT---------TATCGT-----------------TGGAAT--TTCT
Consensus           +T+GCCG+GGATGCTT++CCGTATT+T-G+TTGATT+AGA+G--AAGGCGAAG+C+----CTTGTTTTCGTTCGGG++C----++ATTTGGAA+AGCTCT
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                                 610       620       630       640       650       660       670       680       690
Acyrthosiphon_pisum     TGTGATTCGCATT-TTTAGTTCAATTTGCAAGGTTCTA---------GCTTATG-----------------------------------CTAGTG--
Ades_aegyptii           CTTTGCTGGCATT-TTGAGCAAAATCTGCGAGCTGT-----------ATTTA----TG------TGCTGTTG-------------------CACAAA---
Anopheles_arabiensis    --TTGCCAGCCAT-ATGAGTCAAATATGCGAGCTAT---------CAACCTG----TGG-----GGGGG-------------TCCGTCCTCTCCATGG--
Anopheles_gambiae       --TTGCCAGCCAT-ATGAGTCAAATATGCGAGCTAT---------CAACCTG----TGG-----GGGGGGGGG---------TCCGTCCTCCCCATGG--
Anopophlora_glabripennis TGTTGCCAGCATT-TTGAGTGTAATTTGCAGGCTGGAA--------AATTTCTT-----------------------------------CCAG----
Apis_mellifera          TATGGTTCGCTGT-TTGAGTACAATCCGCAAGCCAGAA--------AATTTATCTT-----------------------------------CTGG----
Atta_cephalotes         TATAATCCGCAAG-TTCAGTCTAATCCACAAGCCTGGT--------AGTC-ATAC-----------------------------------CTGG----
Bombyx_mori             CATGGCTGGCAGT-TTTAGCACAATTTACGAGAT---G---------GTCATAG-----------------------------------CCA-----
Ceratitis_capitata      TGTGACCAGCAAT-TTTAGTGCGATGTGCTTGCTGC----------ATTCTAT-----------------------------------GCAG----
Culex_quinquefasciatus  --TTGCTAGCATT-TTCAGTACAATCTGCGAGCTGTGG-------CGATTTGGCTTTGGTCCGATGGTGTTGG---------CCCCAACGCCCCAAGACT
Daphnia_pulex           TGTAGCTTGCTAT-TTGAGTACAATTTGCGGGTTGTGGT-----TTGCCCTTTT--ACGGGTT-----------------------GACTGCAA----
Daphnia_pulicaria       TGTAGCTTGCTTT-TTGAGTACAATCTGCGAGTTGTGGT-----TGGCAC------ATAGCT-----------------------ACTGCAA----
Diaphorina_citri        --CAATCGGCCAA-GTTAGCTCAATGTGCGAGACTC--------CCCCTCA-------------GCG-----------------CGCGGGG--
Drosophila_grimshawi    CGTGACCAGCAAT-TTTAGTGCGATGTGCTTGCTGC--------AAATCCCTC-------CTCGGAGGTGGT-----------------GCGCAG----
Drosophila_melanogaster CGTGGCCAGCGTT-TTTAGTGCGATGTCTTGCTGC-------------CT---------CT-----AAG-------------------GCAG----
Drosophila_pseudoobscura CGTGGCCGGCTGT-TTTAGTGCAATGTGCTTGCTGC--------AGAACCT---------CC-----GGGCA-------------------ACGCAG----
Drosophila_virilis      CGTGACCAGCAAT-TTAAGTGCGATGTGCTTGCTGC--------AAACCTTGC-------CT-----GAGGT-------------------GCGCAG----
Ephemera_danica         --CGGCCAGCAAT-TTTAGTTCAATGTGCGAGGTGG---------CTACTT-----------------------------------GTAG--
Glossina_morsitans      TGTGACCAGCGAT-TTTAGTGCGATATGCTTGCTACTCAAAAATATATTCTTTTGCTTGCCTTCTTGGTGATAATAAGGAAGATATTGGCGAGTAG----
Heliconius_melpomene    TGTGACCAGCAAT-TTGAGCATAATCTACGAGGT---G---------ACTAAGG-----------------------------------TCA-----
Lepeoptheriius_salmonis TCTGGCTGGCAAA-TGTAGCAAGATGTCTAGGGTGATT---------TTTTAAA-----------------------------------ATCA-----
Litopenaeus_vannamei    ----ACTAGCTTAATTAAGTGTGATGAGTGAGGTGGC---------ATCT-----TAG-----------------------------CCAT----
Lutzomyia_longipalpis   CATTACCGGCTTT-TTGAGTCTAATGTACAAGTTTACCC-TTCAAATTTTCATCAAAAATATC----GAGA-------------ATTTGGGGTGAA----
Mayetiola_destructor    CATCACCGGCAAT-TTTAGTGCAATGTGCAAGTTGGAT-----GTGATTTC--TCATTATGTG----GAAA---------------TTCGCATTCAA----
Nasonia_vitripennis     CGTGACCCGCTGT-TTTAGTACAATCTGCGAGCCGCATC-------AATTCCTTTG-----------------------------ATCGG----
Pediculus_humanus       CGTGGCCAGATAT-TTAAGTGCAATCCGTAAGGTGGTC---------TCTCATATT-----------------------------GACCA-----
Phlebotomos_papatasi    TATTACTTGCCTT-TTTAGTCCAATGTATAAGGTAATC--TTCATGATTTCATTGATAA-AT-----GAAAT-----------TGTTGAGGGTTAA----
Rhodnius_prolixus       CGTAGTCGGCGAT-TTGAGTGCAATCT-----CTACGGC-----GTAACC-----------TC-------------------------TAAAGCGT----
Tribolium_castaneum     CGTGACCGGCTGT-TTTAGTTCAATTTGCGGGCTAGTG-----------TTTTA-----------------------------------CTAG----
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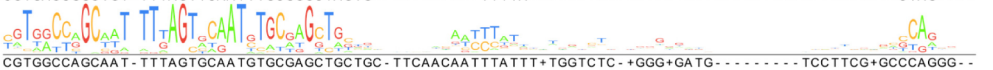

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Consensus               CGTGGCCAGCAAT-TTTAGTGCAATGTGCGAGCTGCTGC-TTCAACAATTTATTT+TGGTCTC-+GGG+GATG---------TCCTTCG+GCCCAGGG--

                                 710       720       730       740       750       760       770       780       790
Acyrthosiphon_pisum     ----------------TAACTCAATTCAGACTAATCTCT----TGTTGACTG-----------------------tttatctctaaatctgagggctttt
Ades_aegyptii           ------------TGCAGAACTCAATTCAGACTAGTCTAA----TACTAGCTAGT-----------------------atttcttaacactatttgtacatgc
Anopheles_arabiensis    ----------GCGGTAGAACTCAATTCAGACTAATCTAT----CACTAGCC-------------------------cgatcacatgcccaacacaactgca
Anopheles_gambiae       ----------GCGGTAGAACTCAATTCAGACTAATCTAT----CACTAGCC-------------------------cgatcacatgcccaacacaactgca
Anopophlora_glabripennis ----------------AACTCAATTCAGACTAATCTGT----TACAGACCA-----------------------aacttccaattgccaattctgataa
Apis_mellifera          ----------------AACTCAATTCAGACTAATCTGA----GGTTGCCGT-----------------------actgagggtattatattatatgttg
Atta_cephalotes         ----------------AACTCAATTCAGACTAATCTGA----TGCTGCCGTT----------------------gaatctgagggtgctatcttatcaa
Bombyx_mori             ----------------TAACTCAATTCAGACTAGTCTTT----C-TTGGCTTGCT-------------------ccctgtataaactgagggtctttta
Ceratitis_capitata      ----------------AACTCAATTCAGACTAATCTGT----GACTGACTT-----------------------catttaaacgaatacaaatggtagc
Culex_quinquefasciatus  AACCGAGATCGCTGCAGAACTCAATTCAGACTAGTCTAA----CGCTAGCTT-----------------------acctccaacacagttgcacagtctg
Daphnia_pulex           ----------------AACTCAATTCAGACTAATCTGCCGAAAGCCAATTGACGGG------------------attgttgctctgtttctgagggggt
Daphnia_pulicaria       ----------------AACTCAATTCAGACTAATCTGTCGAAAATCAA----------------------ttgtgatactctattttctgagga
Diaphorina_citri        ------------AAGCAACTCAATTCAGACTAGTCTTG----AGCTTTCCTGAA-----------------ctttcgaccccctcttgcccctgggg
Drosophila_grimshawi    ----------------AACTCAATTCAGACTAATCTGT----GACTGACTGG----------------------cttcaagaaggaatgggatatgatg
Drosophila_melanogaster ----------------AACTCAATTCAGACTAATCTGT----GACTGACT-----------------------acctggtgaaagaagctaaaggcgc
Drosophila_pseudoobscura ----------------AACTCAATTCAGACTAATCTGT----GACTGACTGG----------------------cgtcagcaaacgaggcgaaagacgg
Drosophila_virilis      ----------------AACTCAATTCAGACTAATCTGT----GACTGACT-----------------------ggcccaataaaagagatgagaaatg
Ephemera_danica         -------------TCATAACTCAATTCAGACTATTCTGT----CTCTGTGTGCCGCCAGT---------------actacccttttgggtgctgagggtgt
Glossina_morsitans      ----------------AACTCAATTCAGACTAATCTGT----GACTGACTT-----------------------tttaagcggccaaatgaactttaca
Heliconius_melpomene    ----------------TAACTCAATTCAGACTAGTCTTT----CATTGGCTGTCT-------------------ccctaacaatctgagggtgttttt
Lepeoptheriius_salmonis ----------------TAACTCAATTCAGACTATTCTGT----GACCATAATCTCTGGGATCTCTAGTAAACTTTgaagtctttggaagtgtttccgatg
Litopenaeus_vannamei    ----------------AACTCAATTCAGACTATTCTAT----GCTACCGAGTC-------------------ccctacaagttct------------
Lutzomyia_longipalpis   ----------------AACTCAATTCAGACTAATCTGT----ATCTAGCCC----------------------tttcctgcaaaagatttttctttgca
Mayetiola_destructor    ----------------AACTCAATTCAGACTAATCTAT----TACTAGCCC----------------------taccaaatatggaatacataacgca
Nasonia_vitripennis     ----------------AACTCAATTCAGACTAATCTGA----TGCTGCCG----------------------tgctaactgagagaatttttgatc
Pediculus_humanus       ----------------TAACTCAATTCAGACTAGTCTGT----CACTGGCG----------------------tcaatcacctctctctctctctc
Phlebotomos_papatasi    ----------------AACTCAATTCAGACTAATCTTT----CTCTAGC----------------------tctttgtatataataacataatat
Rhodnius_prolixus       ----------------AACTCAATTCAGACTAATCTCA----GGACCAAA----------------------atcttcaagtatcaaagcagaaaaa
Tribolium_castaneum     ----------------AACTCAATTCAGACTAATCTGT----TACAGACCC----------------------gtctgttgactcacgatcgatgcct
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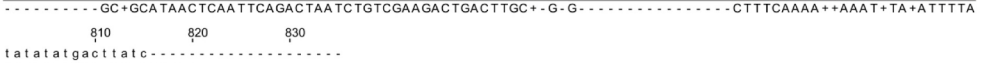

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Consensus               ----------GC+GCATAACTCAATTCAGACTAATCTGTCGAAGACTGACTTGC+-G-G----------------CTTTCAAAA++AAAT+TA+ATTTTA

                                 810       820       830
Acyrthosiphon_pisum     tatatatgacttatc---------------------
Ades_aegyptii           gtattagggtggaacacttc----------------
Anopheles_arabiensis    tttctgatggtgcgttccaaaatcg----------
Anopheles_gambiae       tttctgatggtgcgtcctgaaatcgtg--------
Anopophlora_glabripennis tttcacgtctgtttaatatttctct----------
Apis_mellifera          atgttttttttt------------------------
Atta_cephalotes         attttttgttttgatagaaacaaagc----------
Bombyx_mori             tgaattattactcaaagaaaaaatg----------
Ceratitis_capitata      catatatgcttgca----------------------
Culex_quinquefasciatus  caaagacggggagtttcgagtggag----------
Daphnia_pulex           tgcatattcagtatttc-------------------
Daphnia_pulicaria       ttaaattgtcattcggataccccact----------
Diaphorina_citri        gtgacctttctttgtgggggagaat----------
Drosophila_grimshawi    atgtagttgaa-------------------------
Drosophila_melanogaster gtcagggtgacccatccattcccca----------
Drosophila_pseudoobscura aagacaatggctgggcagggaccgc----------
Drosophila_virilis      ccaacaggcagagttggatttttgat----------
Ephemera_danica         ttctccacc---------------------------
Glossina_morsitans      aaatttcttattgaggaaaattgca----------
Heliconius_melpomene    tttcatgataaaattgttaatgtat----------
Lepeoptheriius_salmonis aaa---------------------------------
Litopenaeus_vannamei    ----------------------------------
Lutzomyia_longipalpis   actttttctctttattattaaaatg----------
Mayetiola_destructor    ttgttgtcacttcaatttttaatttg----------
Nasonia_vitripennis     ttgttctttttctttcaaatctttc----------
Pediculus_humanus       tctcgttctgaaggcttccatctattacgaaattt
Phlebotomos_papatasi    attgtatatggtatatatttttt----------
Rhodnius_prolixus       aactagtcgagatatctttagtttt----------
Tribolium_castaneum     gataaaaacctcctttaatatttct----------
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```
Consensus               TTTATATTTATTCTTTA+AA+TTCTT----------
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B

```
                    10        20        30        40        50        60        70        80        90       100
Amphimedon_queensland caaatatgcaatgatctatgacccaca------a----gcacttaacaattctttt-ctactcaaa------gataaaa---gccacagttgttatcataatgtcgtgtt
Biomphalaria_glabrata ---tttttgttattcaaagtactgaaaactacaaagaaggtctta-ctaaca-tacta-ccca----------tatataa---gacttttg-ctcat-gtctttcctagcat
Caenorhabditis_elegans ---cacactcaacacag-----cgagcggcggaacccgcgggg-tgtcggccgctcggac-acgctccc---gtatataac----gacgcggcgcgcgtcaagttgtga--
Capitella_teleta      --tacttgataaatat------gcaaatattcccacacgattgtcatgagagcctataataagcagc---acatata----aggcaccgtccattgc---atttgatat
Centruroides_sculpturatus --acacgattgat---a----accaaagttaaccacccaacgagaagctcgacgacagcaagcgtg---atatatatagcgtcgtacgttaac---gtag-----t
Crassostrea_gigas     ----atgtacagaccttggtcatgaaaac----ac-cacaa--acgtaagattattt--gtattttgc---ctgtactaa-atacaaaagataagtgt---gttt----t
Danio_rerio           ---aaatatcttaactag------gtctat-------caccatcactgtggagcatggtacaagtacg---acctataaa-taggtgacgcagactac---gtcataacc
Helobdella_robusta    ---tgtgttccaataaaaa--attaaaaaaaaaat-cacca-taaatcgcgctgtca-aaaaagttgg---ttatataaa-cgattga---tgaccac---gctt---gt
Homo_sapiens          --cgctatgttgttctgg------gaa-at-------cacca-taaacgtgaaatgtct-ttggatttgggaatcttataag-ttctgtatga-gaccac----ttttccca
Ixodes_scapularis     ----gcgttctatctta----tccagaactg-cgttcactt-cgaaagtggaggctacgagatgcgtg---gtatataaactggcggagcggctttgt---gtgt----c
Metaseiulus_occidentalis ----agatttgagattt-----tggaccg-gagagaacgatcactcgatcgcgcgcgcgaagctccg---gtacataagccccggaccccgcccaccat-gagt----aa-
Mus_musculus          cgcgctgtgctttgtgg------gaa-at-------cacccctaaacgaaaaatttat-tcctctttcg-agcctataa-g-tggcggccg--gtctac---atcctgaaa
Parasteatoda_tepidariorum ----cattcaagttaaaataaataaaatcataac-taccactagaaagtattgttttaataaattag---ttatataaa-cgactaaattcaataat---gtat---at
Strigamia_maritima    ----aattgattttcaa----cttagaattttaattcaccattttgtaacagtaaaa-atcaaatcta---ctatataaa---gacgaaggttcaatagttaggtattggat
Consensus             ...T.TCTAT.TAA.....T.GAAAAT...AA..CACCATTAA...AGCA.TATT.CTACAAGTT.G.A..TATATAA...G.C..A.G.....ATTAT...GTTT...AT
                      C-AAAT+TTCTAT+TAAA+TAATGAAAATTATAAC+CACCATTAA++AGCA+TATT+CTACAAGTT+G-A-+TATATAAAC+G+CG+ACG++GATTAT+AAGTTTTGAAT

                    120       130       140       150       160       170       180       190       200       210
Amphimedon_queensland ----GGATTGA----------ATGCTTGCC-AAAGGGGC--CCCA----CAG-----------------------CCCCTGGGAAGGTCTGAGAGAAAAGCCAT-----T
Biomphalaria_glabrata ----GGA---GTGCTGGTAATGCTTGCA-TCAAGGGCAACATA--CAG-GTAT-TT--ATTACCTCCAA--AGTGCCCCTGGGAAGGTCTGAGACAAAGGTC-----AAT
Caenorhabditis_elegans ----GGTTGGCCGGAAG--AAGACGGTT-GGGAGAGACACAAAGGCCTGAAA-----CATGGCCTACACA----ACTCCCGGGAAGGTCTGAGAGTAGGCCT------TT
Capitella_teleta      ca--GCATGGTGGTAATGCTTGCT-TTAGGGGTCACTCA--CAG-GTGCCTG--GTCACCTCGTT-------GCACCCTTGGGAAGGTCTGAGACATTGGTC------AA
Centruroides_sculpturatus ----G-ACGTGGTGGTGATGCTTGCACTGAGGAGAAACAAA--CGAG-TAC-CT--G--GTTACTCA----TA-TCTCCTGGGAAGGTCTGAGACAAAAACC------G
Crassostrea_gigas     aaccGTGGTGGTAA-GCTTGC--TTATGGGTGACGTA------GCGA-TT--G----AGTCTA--------CGTTTCCCTGGGAAGGTCTGAGACAATGACGT----AA-
Danio_rerio           cg--GAGCGGAAGGAA-GCTCACT-GTAGAGGTTACCCA--CTGAGTGCTC---GTCAC-TCGCC------AACACCTCGGGGAAGGTCTGAGACAAGAGCC------CC
Helobdella_robusta    t---TGT-CGGTTGTAATGCTCGCC-TTAGGGGCAACAAG--C-GAGTGC-GT--G-TC-ACTCAC-----GGTGCCTTTGGGAAGGTCTGAGATTTGGGCT-----AAC
Homo_sapiens          ta--GGGCGGAGGGAA-GCTCATC-AGTGGGGCCACGAG----CTGAGTGCGTCCTGTCAC-TCCACTCCCTTGGGAAGGTCTGAGACTAGGGCC------AG
Ixodes_scapularis     ----GGATTCCGGGGTGATGCTTGCA-TAAGGGGCAACGCA--CGGGACACGCT--GTTGTTCTCCG----CACTCCCCTGGGAAGGTCTGAGACAGGAGCCCGCACAGG
Metaseiulus_occidentalis ----GTCCTCCGGACG--AGTGCCCGCA-CAAGGAGACAC-----CTCGAAGTGTT-CATCGCTTATTT-------CTCCTGGGAAGGTCTGAGTCCAGGGCC------AT
Mus_musculus          g t--GGGCGGAGG-AA-GCTCATC-AGCGGGGCCACGTG--CTGAGTGCGT---GTCAC-TCTTC--------GGCCCCTGGGAAGGTCTGAGACTTGGGCC------TC
Parasteatoda_tepidariorum ----GTGTGTGACTGTGA-GTTTGCA-TTAGGGGCGTCGAA--CTGGGTGC-TT--GGTC-ACTCCC----TCCGCTCCTGGGAAGGTCTGAGGAAAGAGC------AGC
Strigamia_maritima    ----GGATGCAGTTGTGAGGCTTGCT-TTAGGGCTAACAAA--CAGAGCAT-TA--ATTG--TTCAT----ATTAGTCCTGGGAAGGTCTGAGACAAAGATC-----AAC
Consensus             ...G.GATGG.GGG.AG...C.T.CATTGGGG.CA.AA...G.G.....ACGT.T.AC.TCTCCC.....CCCCTGGGAAGGTCTGAGACAAGGGCC.....AA.
                      +A--GGATGG+GGGAAG+C+C+T+CATTG+GG+CAAACA+ACAC+G+GCACGTTGT+AC+TCT+CCC+C--AG++CCCCTGGGAAGGTCTGAGACAAGGGCC-----AAC

                    230       240       250       260       270       280       290       300       310       320
Amphimedon_queensland ACTCACTCGTGATG--AGTG---TCTCACTAACAGTGAGATTGAG--TGAACAGAAACAGTGACCAGAGT----AGCAAGCTTATAATGAGCAGAAGA----------
Biomphalaria_glabrata -C-AATCAT--CATGCAGGTGACC--TCATTAAGCTTGAGGGTGGC----TCACCAGAAAA--------TCAGGGTGGGTGAGA--TGCTATATG-CAAGAGA-------
Caenorhabditis_elegans GATGAGAT---CTAGGAGATCTTC--CAT----------------T--ATCC-TTATAGA----------GGAGAGGCTG----------TAGAAGAAGA-------
Capitella_teleta      GCGTGGCT---CTAGCAGGGCTCC---ACTGTAATC---GGTGGGTGGGACAACCAGAAATA-----GTCCAGCCCCGTCGCGT-------TTCGGCAGAAGA-------
Centruroides_sculpturatus TTAAGGCT---CCAGCAGGGCCCT--CCGGTAAAT---CGGAGGGGG-GCTACAAGAAAAC---------AGGCATAGTGC---GTGGGGCCCG-TGTGACGT------
Crassostrea_gigas     -TGCATCC----GAGATG-GGTGA--CGTGTTAATT--ACGTTGG--AAGGTACCAGCAA----------ACAACGGGCGTAC--CAGCATTTGGCGGAAGAC------
Danio_rerio           TTGCTGTC---CTAGCAGGACATC---ATCTGAAT----GATGAGCGAG-TGCACAGAAA--------ATCGGGTCACG-CGCGCGATT---CTCG-CAGCAGA-------
Helobdella_robusta    TTACGTCCTTGCAGGACGCAGCTG--TAAATTAA----CGGTTGGCGAGGTTATCAGAAA--------TAGTCCTGAGGGC----CATGATTTGGCGCGAGAACGTTTA
Homo_sapiens          AGGCGGCC---CTAACAGGGCTCT---CCCTGAGCTTCGGGGAGGTGAG-TTCCCAGAGA-------ACGGGGCTCCG-CGCGAGGTCAGACTGGGCAGGAGA-------
Ixodes_scapularis     CTCAGGCC---CTAGCAGGGTCCCGACCGAGAGGT---CGGTCGGT----TCACAAGCAAGCCACGCCGCGGGGTCTGCTGTAAGGTGGGATGC--TCTGGCA-------
Metaseiulus_occidentalis GTGTAACT---CTAGCAGGGTTGT--CACAGGAAT---GTGACGGT--CTCCACCAGAAA----------AGCACGTCTGCGT------TACTAATCGGTGA-------
Mus_musculus          CCGCGGCC---CTAACCGGGCTCT---CCCCGAGC---GGGGAGGTGAG-TTCCCAGAGA-------GCAGGGCTCTA-CGCTTGGGCAGACTGGGCAGGAGA-------
Parasteatoda_tepidariorum TTCAGTTT---CGTGACGAAACCA--TCTGTAAG----AGGATGGCGAACTTACCAGCAACGT------TGATCTTGGTAGT----TTGAGTGTGATGTGACAA------
Strigamia_maritima    -TGAATTCT--CTAGCAGGGGATT--TTCATAAAC--GGAAGTGGC----TCAATAGAAAA--------TGGCTTCCAATGAA------CATGTG-CACAAGA-------
Consensus             .TGCGGCC...CTAGCA.GGGCTCT...CCC.TAAAT...GGT..GGTGAG..TCACCAGAAA.....GGGCCGGTGCAGGAGA.....GCAGGAGA
                      TTGCGGCCTTGCTAGCAGGGCTCT--C+CATAAATTTGGGGTTGGTGAGGT+ACCAGAAAA+--C--A+TGGGCTCGGGTGCGAGGT+GGATTTGGCAGGAGAA------

                    340       350       360       370       380       390       400       410       420       430
Amphimedon_queensland ----------T-CCA-------------AAGGAGATGCTCTGA------TTGCT-AGCTCTCAT---GGCTGAAAGACACTCATGGCTAGC--TACTGTAGTGCA---
Biomphalaria_glabrata ----TGCC----------AT---TCCCCTCTG---GGGAAGC--------AGATGCTATGTG-TCTCACTTGACTTGGAAGAGTCC-ATGACCAGCTAATCTAAGTTAGA
Caenorhabditis_elegans ----CGTT--------------------TCCCC-------------------TGCGAGGGT-------------TTGGAAACGGCC-TCGGCCAGCAAT-TC--------
Capitella_teleta      ----CGTCTT-------GGTGTGCGGTTGCTATCCTCGG----------CTGATGCTATGCGGCGGTGGTTCGGTTGGAACGGACCCACGACCGGCGAC-TGCAGTCCAA
Centruroides_sculpturatus ----CGCA----------A-----GCGAGC----GGCGGAT-G-------GAATCTCACGCG-C-----TATAGTTGGAAAAGCCC-TTGGTTAGCAGC-CTGAGCTCGA
Crassostrea_gigas     ----CTGTA----------GC-------GACGCT---ATGCGGT----------TGCT-TGTT-C-CCG-----GTTGAA--AATCTTCCAGTCAGCATTAACTAGTTCAA
Danio_rerio           ----CGTT---------GATACTCGCATACATTCAGCGGAT-----CAACTGATGCGACGCG-CGCAGA--C--TTGGAA-ACACTCGCGGCTGGCGA--ATGAGTGCGA
Helobdella_robusta    CGCTCGTC----------GTAAATGCGATGCC---GCGAATTG-------TTTCGCTGTGGC-C-TTGTCAAGGTTGGAAGAATCTCGCAGTCGGCTTTGCAAAGTTCGA
Homo_sapiens          ----TGCC----------GTGGACCC-CGCCCTTCGGGGAGGGGCCCGGCGGATGCCTCCTT-TGCCGGAGC--TTGGAACAGACTCACGGCCAGCGAA-GTGAGTTCAA
Ixodes_scapularis     ----CGCA----------CT----GCGTGTCTTGGGCGGACCG-------GAGGGCCCCGGT-C-----GGACGTTGGAACGAACC-GTGGCTGGCGAT-CTGAGCTCGA
Metaseiulus_occidentalis ----CCTC--------------------TTAACGAGTGAGAGG-------TAACGCGAGGCG-----------CTGGAACGGGGG-CCGGCCAGCAAT-CTGAGTCCGA
Mus_musculus          ----AGCCCCGAGTCGGGGCGGATGC-CTCCCTCGCCGGAG--------CGGATGCCTCCCT-CGCCGGAGC--TTGGAACAGACTCACGGCCAGCAGT-GCGAGTTCAA
Parasteatoda_tepidariorum ---TTGTC----------GT-----TGATTCT---GTAAATC---------TTC-CT-TGAT-C-TTG---GAATTGG------TTGGCTGCTGGATGACAA-GTGCGA
Strigamia_maritima    ----TGCC----------------TCAATC--------AGGC--------TGATGCT-CGTT-CATTGTGCTAGTTGGGAAGAGTCT-ATGATCAGCTAGT-TAAGCCAGA
Consensus             ....G.T.C.....GT...GCGATCC.+.G.GGA.....ATGGTCAGCT.T.C..T.G.....GTTGGAA..AG.CT..CGGCCAGCAAT..CTGAGTTCGA
                      ---TCGTC------C--GGTGGA+GCGATCC+T++GCGGA+CGG--C--CTGATGCTACG+T-CGT+GG+GCAGTTGGAACAGACTC+CGGCCAGCAAT+CTGAGTTCGA

                    450       460       470       480       490       500       510       520       530       540
Amphimedon_queensland ----------------------ATGGGCAAGGTGCCT--TC--TTCAAG-----GCAT-------AACTCAATTCAGACTACTC--TCAA-----TCCac-----tttttatc
Biomphalaria_glabrata ----------------------TGTGCAAGGTGGTGA-----A-CTTGTA-------CACCATAACTCAATTCAGACTACTCTACCAACACTTCCaattt--tttttt---
Caenorhabditis_elegans ----------------------TCGTGTAAAT-GCT-------GAGTGCGATCGTCATA--CC--AACACAATTCAGACTAGTC--TTCGGCCAACC-------tttttgtgg
Capitella_teleta      ----------------------TTCGCAGGGTGATGC-----GGC--GCCA--------TCATAACTCAATTCAGACTACTCTACCCCCATGCaata-----tttttgga--
Centruroides_sculpturatus ----------------------TGTGCAAGGTGAC---------AGCGGTTGT---TGT-CATAACTCAACTCAGACTACTCCACTTCCACGTCctccat-ctttttt--
Crassostrea_gigas     ----------------------TTAGCAAGGCGAC-----------CCC--------GGTCGTAACTCAATTCAGACTACTCTGCCACCACaa---------tttttattg
Danio_rerio           ----------------------TGTGTGAGCTAGCAT-----AACATGCTAG-----------AACCCAATTCAGACTACTCTTCCTCCGCTC---------ttttcaca-
Helobdella_robusta    ----------------------TAGGTGAGGTGAA-----------CGT-------TGTTCATAACTCGATTCAGACTACTCTACG---ACCGGTGc-----ttttgt--
Homo_sapiens          ----------------------TGGCTGAGGTGAGGT-----ACCCCGCAGGGG--ACCTCATAACCCAATTCAGACTACTCT-CCTCCGCCCA---------tttttggaa
Ixodes_scapularis     ----------------------TTTGCAAGGTGCCC--------GGTGTTCGC---AGGGCATAACTCAATTCAGACTACTCCACTTCGGAATCCCctacattttttt--
Metaseiulus_occidentalis TCTGCGGGGCGGAGTTGATATTACACGAATCGCTAGCGAAGAGTGTGTAATTCAAAGTCCGTAACTCAATTCAGACTACTCGGTCTGGAGGGCcc------ttttttcat
Mus_musculus          ----------------------TGGCTGAGGTGAGGC-----ACCTCCCGGG------CCTCATAACCCAATTCAGACTACTCT-CCCCCGCCCtct------ttttttga--
Parasteatoda_tepidariorum ----------------------TATGCAAAGCTTG----------CGTAGAT---TGTAAGCAACTCAATTCAGACTACTCCACTTTCACACATgaa----ttttttga--
Strigamia_maritima    ----------------------TTTGCAAGGTAGC----------TGTA-------AGCTATAACTCGATTCAGACTACTCCATTACTGCGTCCactat---ttttttgata
Consensus             ...........................TGTGCAAGGTGA.....A.CGGTA.G.....GTCATAACTCAATTCAGACTACTCTACCTCCAC.....CC.....TTTTTGT...
                      ----------------------TTGTGCAAGGTGACGTC---GAGCGCGTA+GTCA-AGTTCATAACTCAATTCAGACTACTCTACCTCCAC++CC+CTAT--TTTTTG+++

                    560       570       580       590       600
Amphimedon_queensland --aaaact--ataat---gaagtagactagattattcgcccaattt----
Biomphalaria_glabrata ---cttcacatt----acaa--------ttacaaacaagctttctcagcaata
Caenorhabditis_elegans gcttcaggcttctgttgggc-----cgttttaggccaaatgatagaa------
Capitella_teleta      -ttccgaatactt-taatatttcaggtcgccctcccatgcgagga--------
Centruroides_sculpturatus --------tctttttta-------tttaagcttagaaga-gtt-------
Crassostrea_gigas     a--aagcaacacatac-taag---------caaactataa----------
Danio_rerio           --tcattactctct-tagaa-atttcttagattattcatatttc---------
Helobdella_robusta    aa-caa-atctat-tcggg---tggctcaaagttcaagacgtcgtttg-----
Homo_sapiens          ---aaaaaaaaaaaa-aaaaaaaacaaaacga--aaccgggccgggc--------
Ixodes_scapularis     --------ttttt-ttagat---tttttgaatgtgcggcatattgagcg------
Metaseiulus_occidentalis gccctcc-tcgctca----cttttccctcatatactagcacga----
Mus_musculus          -tcgagatccttt-tggagtattgactcga--aa--gggttttat--------
Parasteatoda_tepidariorum aatcat-atttct-ttaaaaactttactctttctaaagtgtc--taa-----
Strigamia_maritima    aaacttgacattt-ttaaaa--------atgccacga---tttggtgacttc-
Consensus             ...CA..ATCTTT.TTA.AA..T...C.T..A...TACAA...TTG.....
                      AATCA+CATCTTTTTTA+AAATTT+CTTA+ATTACAAG+++TTGTTA+C-------
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