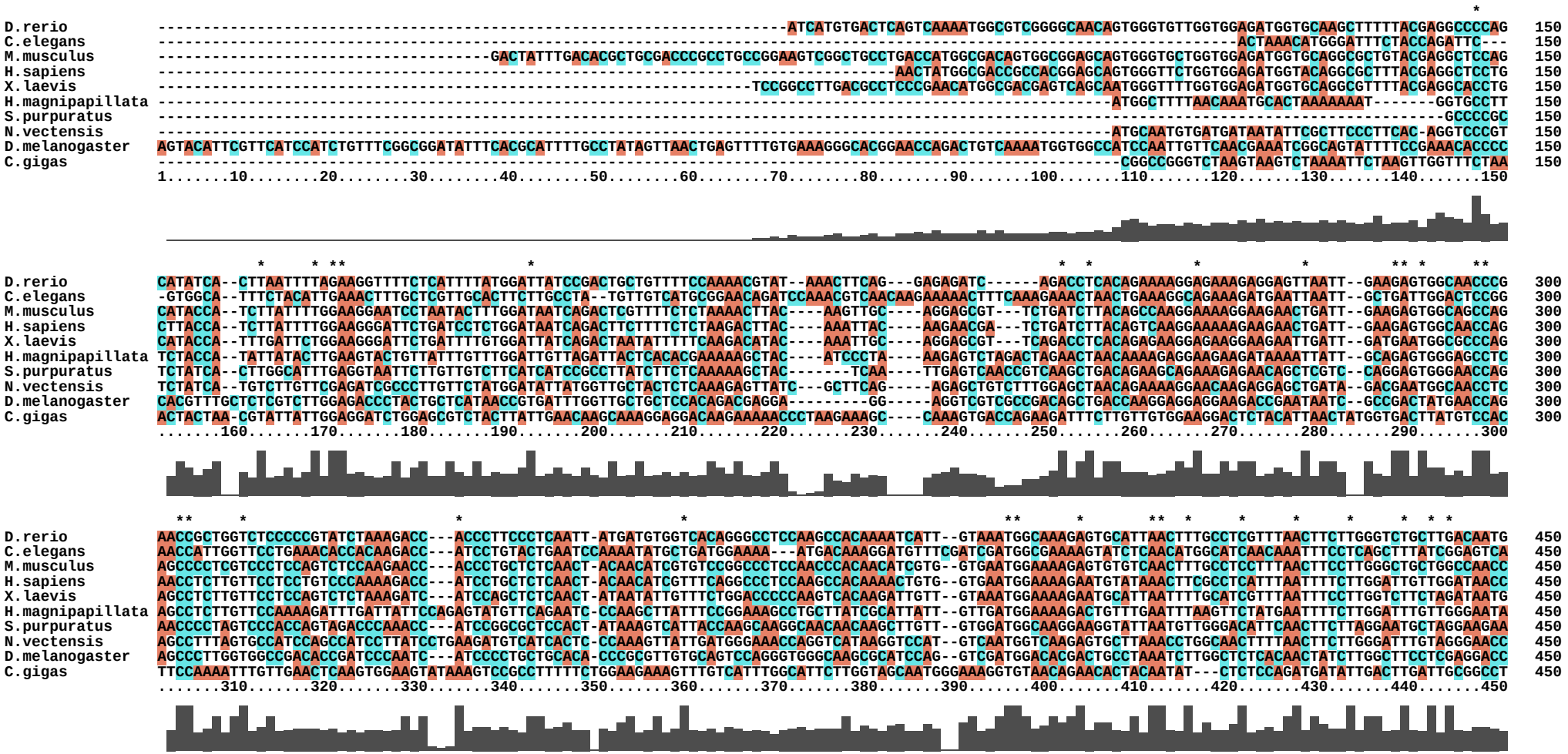
CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT



CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT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                                                  *       *  *  *       ** ** **       *     *  *  * **  *       *       *         *     *           *     * *
D.rerio          AGCGCGTGAAGT--TGAAGGCATTGGCGTCACTCAAAAAATATGGCGTGGGAACTTGTGGACCAAGAGGATTCTATGGGACCTTCGATGTTCATCTGGAGTTAGAGGAGCGATTAGCGAAGTTCATGAGGACGGAGGAGGCCATTATCTA   600
C.elegans        AACGGATTGAAG--ACCGTGCGAAACAGACGATTTTCAAGTACGGCGTAGGATCGTGCGGGCCACGTGGATTCTACGGAACTGTTGATGTTCATTTGGACCTTGAAAAAGAATTGGCAAAATTTATGGGATGTGAGGAGGCTGTTCTGTA   600
M.musculus       CTCGAGTTAAGG--CCACAGCTTTTTCATCTTTAAAGAAGTACGGAGTGGGTACCTGTGGTCCTCGAGGGTTCTATGGCACATTTGATGTCCATCTGGATTTAGAAGAGCGCCTGGCAAAGTTTATGAAGACCGAAGAAGCCATCATTTA   600
H.sapiens        CTAGGGTTAAGG--CAGCAGCTTTAGCATCTCTAAAGAAGTATGGCGTGGGGACTTGTGGACCCAGAGGATTTTATGGCACATTTGATGTTCATTTGGATTTGGAAGACCGCCTGGCAAAATTTATGAAGACAGAAGAAGCCATTATATA   600
X.laevis         CGAGAGTTAAGA--GTGCAGCTCTTGCTTCTCTTAGAAAGTATGGTGTTGGAACCTGCGGACCAAGGGGATTTTATGGTACTTTTGATGTGCATTTAGAACTGGAAGAAAGATTGGCAAAATTTATGAAGACCGAAGAAGCTATAATTTA   600
H.magnipapillata ATGAGATTGAAG--ATTCATCCATTGCTGCTCTTCATAAGTATGGTGTAGGCACCTGCGGTCCTCGAGGATTTTATGGAACAATAGATGTGCATCTAAATTTGGAAAAGAAAATCGCTGATTTTCTAGAAACAGAGGAAGCCATTTTGTA   600
S.purpuratus     AAGAAACAGAGG--ATGCAGCGATACAGACTATGAGGAAATATGGAGTGGGTACTTGTGGGCCAAGAGGGTTCTTTGGGACTATGGATGTTCATCTTAACTTTGAAGAGAAGATGGCTAAACACATGGGGGTAGAGGAGGCCATCTTGTA   600
N.vectensis      CGCGGATTGAGA--GTTCTGCAATAGACACACTTCGCAAATATGGTGTTGGCTCTTGTGGGCCGAGAGGATTTTATGGCTCAATAGATGTTCACCTACACCTCGAAGAGCGTTTAGCCAAGTTCATGCACACAGAAGAAGCTATCCTGTA   600
D.melanogaster   AGGAGATACTGG--AGGAGGCCTGCAAGTCGCTGCGCAAGTACGGAGTTGGATCTTGCGGACCTCGGGGCTTCTACGGCACTATGGACGTGCATCTGGACCTGGAGGATCGTATTGCCAAGTTCATGGGCCTGGAGGAGGCCATTGTCTA   600
C.gigas          CATTAGAAAATGCTATTGGATCAACAGGAGGCTTTTGCTGTGGGAAGAAATATATTGTGGACCATCAACGATTGTCAGGACT-TGGATATTGCTTCTCAGCATCTTTACCTCCCATGTTAGCAACTGCAGCTATCGAGTCCCTGCGTTTG   600
                 .......460.......470.......480.......490.......500.......510.......520.......530.......540.......550.......560.......570.......580.......590.......600
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                     * *     *     *       *   * *  *   *     *       *       *    **      *     *    *  *       *     *       **     *         * *  *
D.rerio          CTCGTACGGCTTCGCCACAATCGCCAGTGCCATTCCAGCTTACTCCAAACGAGGAGACATCATCTTTGTTGATGAAGCAGCCTGTTTCTCTATTCAGAAAGGCCTTCAGGCGTCACGCAGCTTCATTAAATACTTCAAACACAATGATAT   750
C.elegans        CAGCTATGGGTTTGCTACAGTATCTTCAGCAATTCCCGCATACGCTAAAAAGGGAGATGTCATCTTTGTTGACGAAGGTGTTAACTTTGCAATCCAAAAAGGTCTTCAAGCATCACGAAGTCGTGTTGAATATTTCAAGCATAACGACAT   750
M.musculus       CTCGTATGGCTTCTCCACCATAGCCAGTGCCATTCCTGCGTACTCTAAGAGAGGGGACATCATCTTTGTGGACAGTGCGGCCTGCTTTGCTATCCAGAAAGGATTACAGGCATCAAGAAGTGACATTAAGTTATTTAAGCATAATGATGT   750
H.sapiens        CTCATATGGATTTGCCACCATAGCCAGTGCTATTCCTGCTTACTCTAAAAGAGGGGACATTGTTTTTGTAGATAGAGCTGCCTGCTTTGCTATTCAGAAAGGATTACAGGCATCCCGTAGTGACATTAAGTTATTTAAGCATAATGACAT   750
X.laevis         TTCCTATGGGTTTGCAACTGTTGCTAGTGCAATCCCAGCATATTCCAAAAGAGGAGACATTGTGTTTGCGGATGAGGCTGCATGTTTTGCTATTCAAAAAGGGTTGCAAGCATCACGAAGCAGTATCAAGTACTTTAAACACAATGATAT   750
H.magnipapillata TTCATATGGTTTTTCAACAGTTTCAAGTGCAATCCCAGCTTATTCTAAAAGAACAGATGTTATATTTTGTGACAAAGGAGTTAGTTTTGCTATACAAAAAGGAATAGTTGCATCCAGAAGTCGTGTTTACTGGTTTGACCACAATGATAT   750
S.purpuratus     TTCCTATGGCTTCTCAACCATTGCCAGTGCCATCCCGGCTTATGCCAAGAAGGGCGATCTTGTCTTCTGTGATGAAGGGGTGAGCTTTGCTATTCAGATGGGCCTCTTAGCATCTCGCAGCAAGCTCAAATTCTTTAAGCATAACAACAT   750
N.vectensis      TTCCTATGGCTTTTCTACTGTTGCAAGTGCAATCCCAGCATACTCCAAGAGAGGAGATGTATTGTTCTGTGATAAGGGTGTGTGCTTTGCTATCCAGCAAGGTGTGACGGCATCTCGTAGTAGGGTGATGTGGTTTGAACATAATGATAT   750
D.melanogaster   TTCCTACGGCTTCTCGACCGTGGCCAGTGCCATTCCGGCGTATGCCAAACGTGGCGACCTTATCTTTGTGGATGAGGCTGTCAACTTTGCCATTCAGAAGGGTCTGGATGCTTCACGAAGCACAATCGTTTTCTTTAAGCACAATGACGT   750
C.gigas          ATTG-ATGAAAAACCAGGAATGCTTGTTGAATTGCGAGAAAATTGTGAAAAAATTCACAGCAAGCTGAGCGATATAAATGGAACCGTCATTGT--AGGGGAACCTATTTCCCCAGTCAAGCA-CATTAGACTTGCAGAGCCAAGTACTGA   750
                 .......610.......620.......630.......640.......650.......660.......670.......680.......690.......700.......710.......720.......730.......740.......750
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                     *  * **                **        ***                ** *          *     *  *       *  **    **        *           *     *         *
D.rerio          GGAGGATCTTGAACGCCTTCTGAAGGAGCAAGAGATTGAAGATCAGAAGAATCCGCGTAAGGCAAGAGTGATCC--GGCGATTCATTTTAGTCGAGGGTCTCTACATCAACACTGCAGATATCTGCCCACTGCCTGAACTGGTAAAATTG   900
C.elegans        GGAGCACTTGGAGAGGTTATTACTGGAACAAGAACAAAGAGACAAGAAAGACCCGAAAAAGGCCAAGTCTGTAC--GGCGATTCATTGTTGTTGAAGGCCTCTATGTAAATTATGCGGATCTTTGCCCACTTCCCAAGATTATCGAGTTC   900
M.musculus       GGCTGACCTGGAGCGACTGCTAAAAGAACAAGAGATTGAAGATCAAAAGAATCCTCGCAAGGCCCGTGTGACTC--GGCGGTTCATCGTGGTGGAGGGCTTGTACATGAACACTGGAACCATCTGTCCCCTTCCAGAACTGGTTAAATTA   900
H.sapiens        GGCTGACCTCGAGCGACTACTAAAAGAACAAGAGATCGAAGATCAAAAGAATCCTCGCAAGGCTCGTGTAACTC--GGCGTTTCATTGTAGTAGAAGGATTGTATATGAATACTGGAACTATTTGTCCTCTTCCAGAATTGGTTAAGTTA   900
X.laevis         GGATGACTTAGAGAGATTACTAAAGGAGCAGGAGCTGGAAGATCAAAAGAATCCCCGAAAAGCTTGTGTGACAA--GGAGATTTATTGTTGCAGAAGGATTGTATATGAATACTGGTGATATTTGTCCTCTTCCTAAACTGGTTGAATTG   900
H.magnipapillata GGAAGACCTTGAACGCAAACTGAAGGAACAGCATGAAAAAGATATTAAGAATCCAAAAAAAGCTGCTGTAACAA--GACGATTTTTGGTTGTTGAAGGAATATATGCAAATTATGGCGACATAGTTCCTCTACCAAAATTAATAGAACTC   900
S.purpuratus     GGCCGATCTAGAGAGACTCTTACAAGAGCAAGCTGTAGAAGACAAGAAGAATCCTAAGAAAGCTAAAGTGATGA--GGAAATTCATCGTAGTAGAAGGGCTGTATGTCAACCATGGAACCATTGTTGATGTTGAGAAACTGATTGAATTG   900
N.vectensis      GGATGACCTTGAGCGGCTTCTCAAGGAGCAGCAAGAAAAAGACAGAAAGAACCCCAAGAAGGGAAGTGTTACAA--GAAGATTCCTTATTGTCGAGGGGTTGTATATCAATCATGGTACAATAGCACCATTGCCAAAATTGTTGGAGCTG   900
D.melanogaster   TGAGGATCTAGAACGTCTGCTGATTGAGCAAGAAAAACGAGACCAGAAAAATCCGAAAAAGGCGGCTAAGACAC--GTCGCTTCCTCGTCGCCGAGGGTATCTATATGAATACGGGCGAGATTTGCCCACTTCCCGACCTGGTGGCCTTG   900
C.gigas          CAGGGACTTTGA---TGTGCAGACTCTGCAGAAGATAGCAGATCTCTCGAGAGACAACAAAGTTGCTGTGACGTTGGCTCGCTACTTAGAAGAGGAGGAACATAAACTGCCATTGCCAAGCATCCGGATATCTGTGAACAACCAGCTTTC   900
                 .......760.......770.......780.......790.......800.......810.......820.......830.......840.......850.......860.......870.......880.......890.......900
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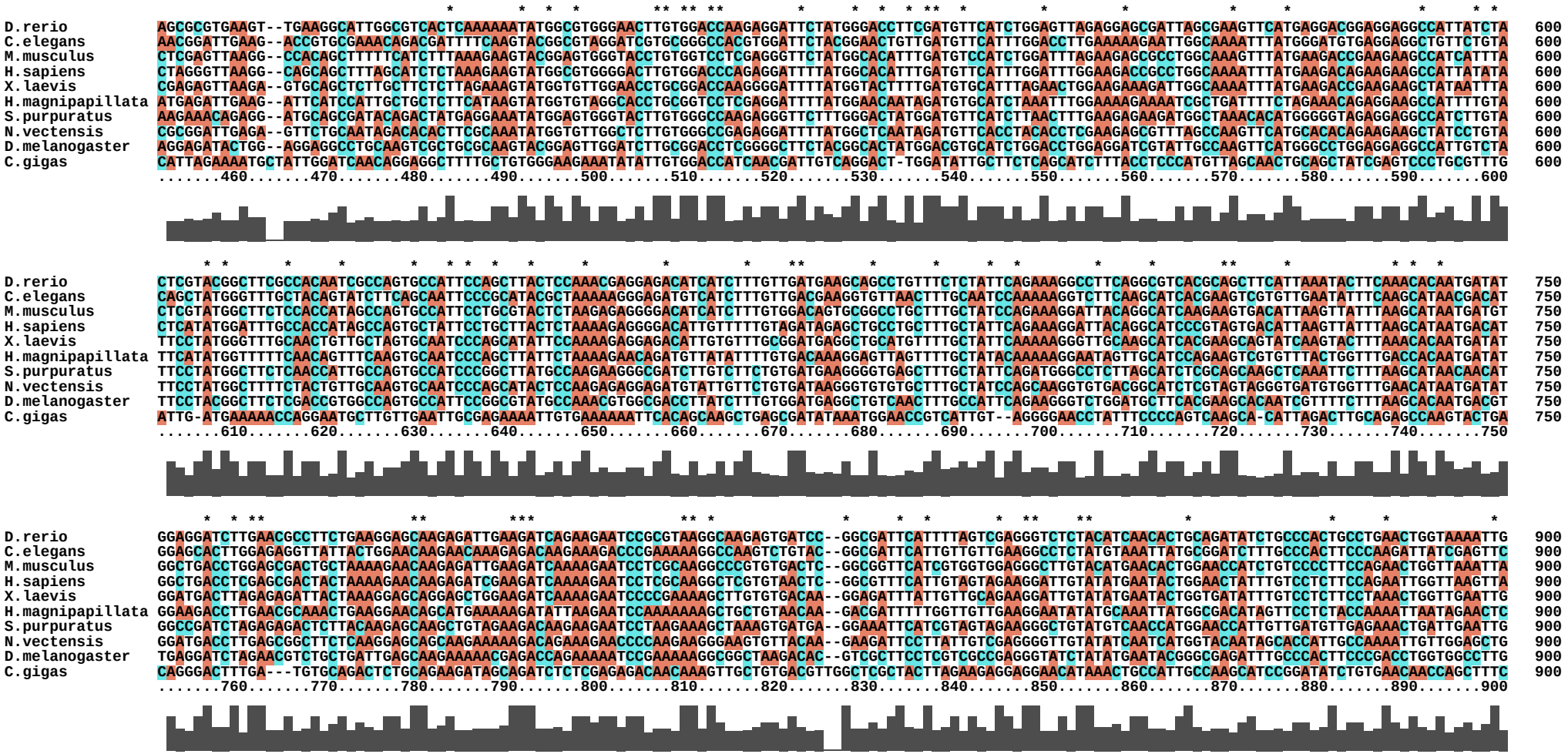
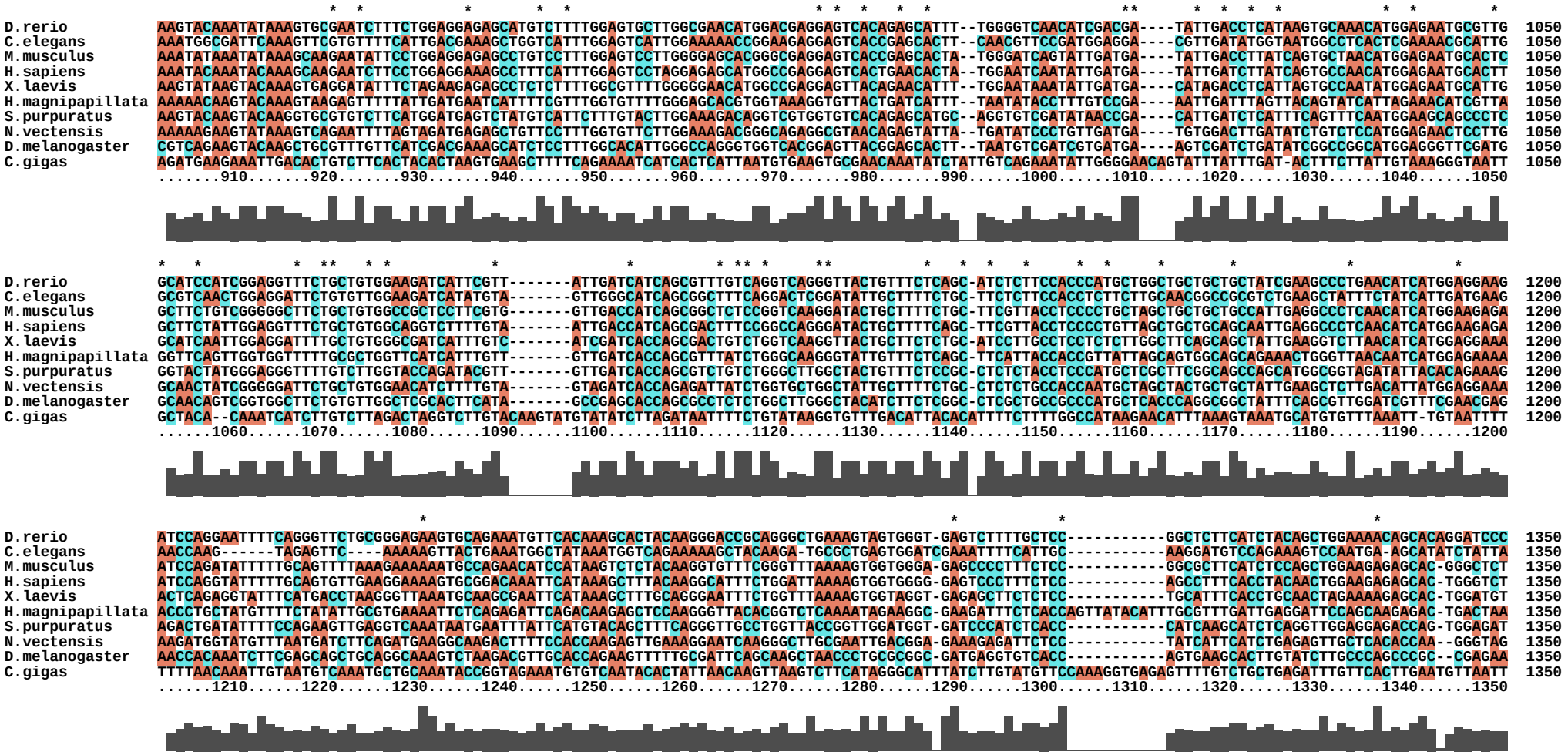


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT



CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT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                                   *         *         *                   *         *    **  *          **                *   * **     *     *
D.rerio          GAGTGAATGACCTGAAGC----TGCTCCGAGCCATTGTCGATTACAGTTTGGACAGA----CAGGTCGCACTAACGTTGGCTCGCTACCTGGACAAAGAAGAGCGCTTTCTTCCACCGCCAAGCATTCGAGTAGTTGTGACCGTCGAACA  1500
C.elegans        CAATGGGGAAGATGAAGAAAAGCAATTGGATACATTTGTGGAGACAGTCTTCACAAAAAATCATCTCCTACTGACCAGAGCTCGATACCTCGACAAGGACGAATTGTTCAAAATTCGGCCAAGCATTCGAGTAATGTTCCAACACGACTT  1500
M.musculus       CG-GGAGAAAGATGTGAAGC--TGCTTCAAGCAATCGTAGATCAGTGCATGGATAAGG----GCATCGCATTGACTCAGGCACGGTACTTGGACAAGGAAGAGAAGTGCCTCCCTCCTCCAAGCATCAGGGTTGTGGTCACTGTGGAGCA  1500
H.sapiens        CG-CGAGCAAGATGTCAGAC--TGCTTCAGGAAATTGTAGATCAATGCATGAACAGAA----GTATTGCATTAACTCAGGCGCGCTACTTGGAGAAAGAAGAGAAGTGTCTCCCTCCTCCCAGCATTCGGGTTGTGGTCACGGTGGAACA  1500
X.laevis         CG-TGAAAAAGATATGAAAT--TGCTCCAAAATATAATAGATCATTGTATGACCAGGG----AAATTGCATTGACTCAGGCACGTTATTTGGAAAAAGAAGAGAAATTTCTTCCCCCTCCAAGCATAAGAGTGGTAGTGACGGTGGAGCA  1500
H.magnipapillata CAATGAGAAAGAAGAAAAA-----CTTGAAGCTATCGTTCAACTGTGTTTACAAAAGA----ATGTATCAATAACTGTGGCACGTTATTTAAAAGATATGGAGCTTTTTCAACCTGAACCAAGTATTCGTATTTGCATTAATTCGAAATT  1500
S.purpuratus     TGGC-AGAAAGACCAAGCAT--TCCTAGAAAAGATTGTCGTCAGGGCATTAGATGAAG----GTGTGGTGCTTACTGTCGCCAGGTATCTAGAGGAAGAAGAAGCTTTCCTTCCACCACCAAGCATACGCATTGCAGTCAACGTGACGCT  1500
N.vectensis      CA---CAGAGGATGAAAGAT--TGCTCAAAAAGATTGTTGACAAGGCGTTTGAAGAGA----AAGTGGCCCTGACTATTGCAAGGTACTTGAAGGACCAAGAGACATTTCCTGTTGAGCCAAGCATTCGCATTACAGTCAATGTGGATCT  1500
D.melanogaster   CTTTGACAAGGAACTGAAAC--TTCTAACAGAGCTGGCTGATAAGTGCATTGCTCGTG----GAGTGGCTGTGGTACAGGCTGCCTACCTGCAGAACAGGGAACGCCAACCAGTCCGTCCCAGCATTCGCATTGCTGTCAACCGTTTGCT  1500
C.gigas          TAGGATCAATCATTGTGTAAGAATTTTTTGATTTTGGTGAATTTTTATTTGAATGTTAC-TTGTCATCTATTGCTTTTTTCTACATAAGTTTGTTGCTTTGAATAATATTTTGACAGACGTTGTATGCTAGTTTTTTTATGGGATTGAAT  1500
                 ......1360......1370......1380......1390......1400......1410......1420......1430......1440......1450......1460......1470......1480......1490......1500
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                                                  *                   *
D.rerio          AACGCAGGAGGA-AATCGAGAAGGCAGCACAGTGCATTCGAGAAGCAGCTTTACACGTCCTGAAATGAAGACCAGTCGCTTCAACACCCAT-------CACACACGCACACCGTAAAGCTTTAAAAGTGTCATCACTGACCGGAGGAAGG  1650
C.elegans        AACTGAAGAGGA-GATTCAAAGAGCTGTCGATGCTATCCGAGTTGTTGCTC-ATAAATTCTAA-------------------------------------------------------------------------------------  1650
M.musculus       GACGGAGGAAGA-GCTACAGAGGGCTGCATCCACCATCAGGGAGGCGGCCCAGGCTGT-GCTGTTGTAGGCTCCTGCCCAGTGCTTCAGCCATGTCACCTGCGGACGGAACTACTCAGAGACCTCCAGCTGCCCAGGGTGTGGCTGTGCT  1650
H.sapiens        AACAGAGGAAGA-ACTGGAGAGAGCTGCGTCCACCATCAAGGAGGTAGCCCAGGCCGT-CCTGCTCTAGGCAGAGTCCCGGGACCATGGCC-----TCCTGCCACACAACACGCAGAGAGGACTCAAGACTC-------------------  1650
X.laevis         GACAGAGGAAGA-GCTGGATACAGCTGCATCAATTATTAAACAAGCTGCATCA-TTGTTCCTGGATTAAATGCATTTTTGGAACCAATTTGATTTTCATATATTCAGCTCACAGGTTGCCTTTTCAAACTGGATACATTCCATGTATAAA  1650
H.magnipapillata ATCTGAAGAAGATATTATATCCAG-TGCTACAATCATAAAAGAAGCTGCTGTT-TATTTACTGTAA-------------------------------------------------------------------------------------  1650
S.purpuratus     GACCGAGGACCA-GCTAACCAAGATTACATCAGTCATCAGAATCTTGGCGGCAGCAGTTCTCAGGGAGAAGTCAGAGGGAGAATAG-------------------------------------------------------------------  1650
N.vectensis      AACAGAAACAGA-AATTCATAGTGCTGCTCAGGTTATCAAGAATGCAGCAGACAGTATATTAGGAGGATAG-------------------------------------------------------------------------------  1650
D.melanogaster   GGAGAGTTCGGA-AATAGACAATGCGTTTGAGGTCATCGAGAGTGTTTCCAGCTCCGTCCTATAAGCCTTGTTGTTGGAAAGGAATGATCTTCTTTCGACAATGGCCTTGCTGTTAAGTTTTAAGGCCTGCTGGCCCCATCATTTTTTCA  1650
C.gigas          GAACAAAGGTGTTGCCAGAAAGCTTTACACATAAATTTAATTACTAGATGTTAAAACTGTGATATATATACACCCAAATATTTTTAACTAACACATCATAATGGTCATTGATAATAAGTAACATGTTTTTGTTTTCATCTCTCATTTTAA  1650
                 ......1510......1520......1530......1540......1550......1560......1570......1580......1590......1600......1610......1620......1630......1640......1650
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D.rerio          AAAGCGAGAGCCTGGCAGGTTCTGTGACCTTTGACCTCAGAGAAATACACTCAGATTGTTTGTATATTTATGTTTGGTGTACAGAAAATGTGGATTATTTTATTAGTCTTCATTTCACATTGAAATAAATGCAATTGACTCCCGACACTC  1800
C.elegans        ------------------------------------------------------------------------------------------------------------------------------------------------------  1800
M.musculus       TGAATACACAGCCAGAGTGGATGGTTGTATCCAGCAGGAGCTGACTTGTAGAGGATGACAGATGACAGCATATCCCTGGTGTTTCTGCAGTGCCGTGTGCTCTGTCAGGATGCTTCACTGT-CATTTGTATTCGCTTTTGTTTAAAACTG  1800
H.sapiens        ------------------------------------------------------------------------------------------------------------------------------------------------------  1800
X.laevis         GGAAGGAAAGGGCCTGCCAACCTTGCAAAACATCTTGAGAAAACCAAAAATTTAAAGGTAACTGTAGTTATTTTAAAAACCCATCAACAAACTCAACCCTACCATGCTGTTTGTCAGTAGTGCATTACTATTTGCTGACTCATGCTGGAA  1800
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------------------------------------  1800
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------------------------------------  1800
N.vectensis      ------------------------------------------------------------------------------------------------------------------------------------------------------  1800
D.melanogaster   TCACTTCTTCACGACCAGTCCAGTATGAATTGTTTAAGTTAATAGCTAGCCTTGCACTTGCTCTTTGCACTTTGTTGCATTGCATTTTAATGAAAAATTTTAAGTCTAGGAAAACTTTCAAAGATTACACGTTATAGATAACAGAGCTGG  1800
C.gigas          AGTGTTGAACAATAAAATGAATTGAAAAATGTCCAATTTTATTCAGTCAAAATGAACTTTGTGGTGATCCCAAAAATCATGTTTTTTTTTTAAAACTACATATGTATTAAAGGATTTAAAT-CATCAGAATTTAAAATGGCTTTCCTTTA  1800
                 ......1660......1670......1680......1690......1700......1710......1720......1730......1740......1750......1760......1770......1780......1790......1800
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D.rerio          TCATGTGCAGCATCAAACCCGTTTATGTTCTGTTCAAAGCCTTGAAAAACCTTGAAATCTTTACTAATCAATGGTAAATATAGCTTTTATATACACCAGTATCTTTTTATGTACACTAGTATTTACATTCTTTTGTAACCTTTGACCAAA 1950
C.elegans        ---------------------------------------------------------------------------------------------------------------------------------------------------- 1950
M.musculus       GAGCTTCCATTTTCCCTCTGTCGTCTGTGGGAATGATTCAATAAGCACTTCTCCGTATCCAT-AGAAAAGGACTTTGCAGCTAAGAGGGACTCTCCATGTATCCAGTTACTGTGGGAGACTGAGAGACTGTGTCCTCCCCTGTCCTCAGG 1950
H.sapiens        ---------------------------------------------------------------------------------------------------------------------------------------------------- 1950
X.laevis         ACAGCCAATCAAAGCATGTGAAATCGGAGTCAGTGACTCACAGCATGAGTGTGTGCAGCAGCCGGAATAAGGTTAGGTTGAGGAACTCGTGAAGTGTTACACACATAAACAAGTTGAAAAAATAAATACACGTGAAGCAGATTTATTTAA 1950
H.magnipapillata ---------------------------------------------------------------------------------------------------------------------------------------------------- 1950
S.purpuratus     ---------------------------------------------------------------------------------------------------------------------------------------------------- 1950
N.vectensis      ---------------------------------------------------------------------------------------------------------------------------------------------------- 1950
D.melanogaster   TTAAATAAAACTATTAAGTTTATTTGGT---------------------------------------------------------------------------------------------------------------------- 1950
C.gigas          AAATACTCACTGTACGTGTTTCTTAAGATAATCTCTATTAATTTATATTGCGTCCAAGTGAATTTTGCCTTCAATGCATTGACATTGTTATTATAATAAATTAATATAAACATGAACCACTGTATAAACTATAAGCATGTGATTTATTTA 1950
                 ......1810......1820......1830......1840......1850......1860......1870......1880......1890......1900......1910......1920......1930......1940......1950

D.rerio          GAGATGCTTCTTTACCACATTTCAGAATATTTATGCCTTGAATGTGATTTTTTTCTCTAATTTCTTTCTGTCAGGATCCATAAATTAATTATTGTTATAATTATTGTTGTAATTTTGGACTTTTTGGTAATGAATGCTATGTGAATGTAC 2100
C.elegans        ---------------------------------------------------------------------------------------------------------------------------------------------------- 2100
M.musculus       CAGAGCTCAGTGGTGGCTGCTATGCAGATACTCTGTGTGTGTTATAAACGTCATACAACATGGTGATCCTAGGACTCTATGTGCTCCAGTTACTGATACTGTCCTGTCTAATCTGAGCTTCACTAACAG-ATCTTCATACCGCTTCCTAA 2100
H.sapiens        ---------------------------------------------------------------------------------------------------------------------------------------------------- 2100
X.laevis         CATCTGCTACATTTTTTACAATAGCAACAGTTCCACTTTAAATATATATGGTGCATGCAATTATCTTCATATGCACCAATTTTATTAATACACTTTCTTTGTTATGTCTGTCCTTTTCCCCTTTCTGATTAGAAGCAAATTTAAGATTGT 2100
H.magnipapillata ---------------------------------------------------------------------------------------------------------------------------------------------------- 2100
S.purpuratus     ---------------------------------------------------------------------------------------------------------------------------------------------------- 2100
N.vectensis      ---------------------------------------------------------------------------------------------------------------------------------------------------- 2100
D.melanogaster   ---------------------------------------------------------------------------------------------------------------------------------------------------- 2100
C.gigas          TTTGAATAAAAGCATTATAAAAAACAAAGTTCTCATGTAAATTGTAAGCGCGCAAAAA----------------------------------------------------------------------------------- 2100
                 ......1960......1970......1980......1990......2000......2010......2020......2030......2040......2050......2060......2070......2080......2090......2100

D.rerio          TCCGCATTTGTCATTTTCTTGCACTCATTCAGCGGAGATCTTAAATATGGTCTGGTTTTGAATCTGTAATTGTCAAAATGTATGTAAATTCAAAGAATAAAACACATTTCAGTCTTTATATAAATAAAAAAAAAAAAAAAAA-------- 2250
C.elegans        ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
M.musculus       GCAATAATCTGAATCAAACGTTATTTTATTTTTGTGTAATTGACTTTATATTTTTTATATATTCTCTAGTCAGTTTTGGGAAGAGGGTTATTATTCTGATCCCCAAATACAAATCATGCCCTTGGTATTTTCTAATATGTCCAATGTCCT 2250
H.sapiens        ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
X.laevis         TCTCACCAAACAATATTGTAAAACGTATGCTGCCCCTACAATGAGATGAGCCCTATGTATATCATAAACACGTATGTACATGTTTTGTCTCAAATGCAGATATTTCAGGTATTTAATCCATTTCAGACCTGGCTTTGCCTTAGAAGGTCT 2250
H.magnipapillata ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
S.purpuratus     ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
N.vectensis      ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
D.melanogaster   ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
C.gigas          ---------------------------------------------------------------------------------------------------------------------------------------------------- 2250
                 ......2110......2120......2130......2140......2150......2160......2170......2180......2190......2200......2210......2220......2230......2240......2250
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D.rerio          ------------------------------------------------------------------------------------------------------------------------------------ 2400
C.elegans        ------------------------------------------------------------------------------------------------------------------------------------ 2400
M.musculus       TTTTCATGGTGGTTTTGTCCAGGAGCATAGACCTGTGGGCTTTTTCTAAGCTGAGAAAAATGAGACCTTTCCTCTTTCACTCTATAAATTCCAGATGCCTCCGAAAAATAGGGATGCTCTAAACGTGATTTCCGAGCTCTACACTGGCTG 2400
H.sapiens        ------------------------------------------------------------------------------------------------------------------------------------ 2400
X.laevis         GCCACAAGTACTGGGGCGTTAGAACGAGATGCAGCTTTGGTTTACACTATTATTATTCTACCCCTTCCAATGTCATTAGTTCACATATGTTTCTAGGTACATGTAAAAAATTCTATAATTGCACTGGATTTCTGAAAAACATATCCAAAG 2400
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------------------ 2400
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------------------ 2400
N.vectensis      ------------------------------------------------------------------------------------------------------------------------------------ 2400
D.melanogaster   ------------------------------------------------------------------------------------------------------------------------------------ 2400
C.gigas          ------------------------------------------------------------------------------------------------------------------------------------ 2400
                 ......2260......2270......2280......2290......2300......2310......2320......2330......2340......2350......2360......2370......2380......2390......2400
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D.rerio          ------------------------------------------------------------------------------------------------------------------------------------ 2550
C.elegans        ------------------------------------------------------------------------------------------------------------------------------------ 2550
M.musculus       CCGTTGTCCTTAGCGAGCGTGTTGAGTGATATAAAGGCTTGTGACATGTGCCACGGATCGTGTGCATGGAAGGCCTTCTCTTGTTGCACGGGCAGAGGAGTCAGGTCATTTAAATGTCATTTTCTGATGTGCGTTCATGTGAACCATGGG 2550
H.sapiens        ------------------------------------------------------------------------------------------------------------------------------------ 2550
X.laevis         TAGAAATGTTTATGCCATAGAATGTGCTATAGAAACAATATCCATTTCTTTTAGATGCTATATTTAGTTTACTAATTCTATTAGTCTTATCCTTGTCTTCTAAGGCAAAGCTAAAATTTCTTTCATATTGCTGACTACTGCAGTAGAGTT 2550
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------------------ 2550
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------------------ 2550
N.vectensis      ------------------------------------------------------------------------------------------------------------------------------------ 2550
D.melanogaster   ------------------------------------------------------------------------------------------------------------------------------------ 2550
C.gigas          ------------------------------------------------------------------------------------------------------------------------------------ 2550
                 ......2410......2420......2430......2440......2450......2460......2470......2480......2490......2500......2510......2520......2530......2540......2550
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D.rerio          ------------------------------------------------------------------------------------------------------------------------------------ 2700
C.elegans        ------------------------------------------------------------------------------------------------------------------------------------ 2700
M.musculus       TCGGCATCTTCTTAAGTGATCTGTGACATTTTTAATGTTTCTATTTCATACGTGCCTTGTGATTGCTGCTGCTGTGAGGGTACACTCCTGTCGGGGAAAAGTCTGTTTTGGTTTGGTTTTTAATGAAATAAACCTCCAAGAGCT------ 2700
H.sapiens        ------------------------------------------------------------------------------------------------------------------------------------ 2700
X.laevis         TCTTGACAATATCAGTAGGCCTAGTTTTATATTTAAAAAAAAAAAAGTTATTTCCTACAGAGAAAATATTGTATCATTAACATTTTTTTACGACATTTATGAAAGGTTTCTGGTTTTTCTATATAAATGATTCTGGCACAAAATAATTTC 2700
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------------------ 2700
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------------------ 2700
N.vectensis      ------------------------------------------------------------------------------------------------------------------------------------ 2700
D.melanogaster   ------------------------------------------------------------------------------------------------------------------------------------ 2700
C.gigas          ------------------------------------------------------------------------------------------------------------------------------------ 2700
                 ......2560......2570......2580......2590......2600......2610......2620......2630......2640......2650......2660......2670......2680......2690......2700
```

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D.rerio          ------------------------------------------------------------------------------------------------------------  2850
C.elegans        ------------------------------------------------------------------------------------------------------------  2850
M.musculus       ------------------------------------------------------------------------------------------------------------  2850
H.sapiens        ------------------------------------------------------------------------------------------------------------  2850
X.laevis         TAATTAATACTTGGAATATTGTATTGACTACTTCCACATTGTGCTCAGACATTAGTGTATACTGTGAGCATTTGTGCAGCAGGGTGTCTGTACAGCCTTCCAGAACTTATGTTCACAATCCCAGCCCATTTATTATTTTCTGTTTCCTAT  2850
H.magnipapillata ------------------------------------------------------------------------------------------------------------  2850
S.purpuratus     ------------------------------------------------------------------------------------------------------------  2850
N.vectensis      ------------------------------------------------------------------------------------------------------------  2850
D.melanogaster   ------------------------------------------------------------------------------------------------------------  2850
C.gigas          ------------------------------------------------------------------------------------------------------------  2850
                 ......2710......2720......2730......2740......2750......2760......2770......2780......2790......2800......2810......2820......2830......2840......2850


D.rerio          ------------------------------------------------------------------------------------------------------------  3000
C.elegans        ------------------------------------------------------------------------------------------------------------  3000
M.musculus       ------------------------------------------------------------------------------------------------------------  3000
H.sapiens        ------------------------------------------------------------------------------------------------------------  3000
X.laevis         TTAGCTAGGCATAAACCCAGGCTATAATTTTAGGGTTCAGCCAAATGGCACTACTAGAGTTTTTGCTGCCTAATGAACTGATTTGTAATTTGCATAATAAATTTACACAATTAGCCCACATGACTTAAGTTTATCAGGGCTCTATTTGCA  3000
H.magnipapillata ------------------------------------------------------------------------------------------------------------  3000
S.purpuratus     ------------------------------------------------------------------------------------------------------------  3000
N.vectensis      ------------------------------------------------------------------------------------------------------------  3000
D.melanogaster   ------------------------------------------------------------------------------------------------------------  3000
C.gigas          ------------------------------------------------------------------------------------------------------------  3000
                 ......2860......2870......2880......2890......2900......2910......2920......2930......2940......2950......2960......2970......2980......2990......3000


D.rerio          ------------------------------------------------------------------------------------------------------------  3150
C.elegans        ------------------------------------------------------------------------------------------------------------  3150
M.musculus       ------------------------------------------------------------------------------------------------------------  3150
H.sapiens        ------------------------------------------------------------------------------------------------------------  3150
X.laevis         TTGCCCAGGTATCCTCACTTACTGGGGAGACATGAAAAATAGAAATGGGCCTAAGGCAAATTATTTATATAATCCAAATGAAATAGATTTCCTTTTGCTAAGTGAGAACTACTCTGTTTAGTATGGAAACCAATGATATCTCAAACATCA  3150
H.magnipapillata ------------------------------------------------------------------------------------------------------------  3150
S.purpuratus     ------------------------------------------------------------------------------------------------------------  3150
N.vectensis      ------------------------------------------------------------------------------------------------------------  3150
D.melanogaster   ------------------------------------------------------------------------------------------------------------  3150
C.gigas          ------------------------------------------------------------------------------------------------------------  3150
                 ......3010......3020......3030......3040......3050......3060......3070......3080......3090......3100......3110......3120......3130......3140......3150
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D.rerio          ------------------------------------------------------------------------------------------------------------------------------------ 3300
C.elegans        ------------------------------------------------------------------------------------------------------------------------------------ 3300
M.musculus       ------------------------------------------------------------------------------------------------------------------------------------ 3300
H.sapiens        ------------------------------------------------------------------------------------------------------------------------------------ 3300
X.laevis         GTGTGAATGATGGAGGTGGCCTGTTTTCTGCATTATTACTGATTGAATCTGAGTGAAGATAATAGCAACAAAAGGACGGGATGGTTTGCACTCCAAAACAACCAACAGGGGCAACATGCAGCATCGCTGTATTTTTGTTACACACACATT 3300
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------------------ 3300
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------------------ 3300
N.vectensis      ------------------------------------------------------------------------------------------------------------------------------------ 3300
D.melanogaster   ------------------------------------------------------------------------------------------------------------------------------------ 3300
C.gigas          ------------------------------------------------------------------------------------------------------------------------------------ 3300
                 ......3160......3170......3180......3190......3200......3210......3220......3230......3240......3250......3260......3270......3280......3290......3300
```

```
D.rerio          ------------------------------------------------------------------------------------------------------------------------------------ 3450
C.elegans        ------------------------------------------------------------------------------------------------------------------------------------ 3450
M.musculus       ------------------------------------------------------------------------------------------------------------------------------------ 3450
H.sapiens        ------------------------------------------------------------------------------------------------------------------------------------ 3450
X.laevis         CCTTTTTTTAAGTGAGCAATACTATATATATATATACAAAATATAGATACATGCACACACTAATGACAGGTGATTTAACTGTAAAATTACTTTATCTCAAAAGGTAATCCTGTTTCACCTAGTTTTTCCTTTGTATTTGAACGTTTATCT 3450
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------------------ 3450
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------------------ 3450
N.vectensis      ------------------------------------------------------------------------------------------------------------------------------------ 3450
D.melanogaster   ------------------------------------------------------------------------------------------------------------------------------------ 3450
C.gigas          ------------------------------------------------------------------------------------------------------------------------------------ 3450
                 ......3310......3320......3330......3340......3350......3360......3370......3380......3390......3400......3410......3420......3430......3440......3450
```

```
D.rerio          ------------------------------------------------------------------------------------------------------------------------ 3563
C.elegans        ------------------------------------------------------------------------------------------------------------------------ 3563
M.musculus       ------------------------------------------------------------------------------------------------------------------------ 3563
H.sapiens        ------------------------------------------------------------------------------------------------------------------------ 3563
X.laevis         GTACTGTACCAGCTTTGGAATGCTTTTAAATATGTGCCTTTTTCTTTTGTTGCTGCTAAACAGAATAAAACTTTGTTTAAATAAAACTTTCTAAATACAAAAAAAAAAAAAAA 3563
H.magnipapillata ------------------------------------------------------------------------------------------------------------------------ 3563
S.purpuratus     ------------------------------------------------------------------------------------------------------------------------ 3563
N.vectensis      ------------------------------------------------------------------------------------------------------------------------ 3563
D.melanogaster   ------------------------------------------------------------------------------------------------------------------------ 3563
C.gigas          ------------------------------------------------------------------------------------------------------------------------ 3563
                 ......3460......3470......3480......3490......3500......3510......3520......3530......3540......3550......3560...
```