

Additional File 2: Dataset S1 - Sequence alignment of related *Mariner* families of diverse organisms retrieved from public databases and sequences obtained in the present work. The abbreviations correspond to species names and IDs as described in the caption of Figure 2. Dashes represent indels.

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Hs (Mariner-24_SIn)    AAACAACCTCGAAGGCGGGATTGCATCCGAAGAAAATAAT-----GCTCTCCGTATGGT
Hs (Mariner-45_HSal)  AGTCTGTGGCAAAGGCCACACTGACGCCCAGGAAGGTTAT-----GCTGTGTGTTTGGT
Cf (Mariner-6_CFl)    TAACCACTTCGAAGGCAGGCTTACATCCGAAAAAGGTAAT-----GCTCTGCATTTGGT
Hs (Mariner-35_HSal)  AAACCACACCGAAGCAAACATCCATACGAAAAAAGTCAT-----GCTGTGTATTTGGT
Df (Mariner-1-DF)     AAGCCACATCAAAGGCCGATATCCATCAGAGGAAAGTTAT-----GCTGTCTGTTTGGT
Ac (Mariner-1_Ace)    AAAGGCAAGCAAAGGCCGAGATCCACCAAAAGAAGGTAAT-----GCTGTCAATGTGGT
Lh (ADOQ01008024)    A AAGGCAAGCAAAGGCCGACATCCACCAAAAGAAGGTGAT-----GCTGTCAATCTGGT
Lh (ADOQ01001582)    ----CACCGAAAAGGCCGACATCCACCAAAAGAAGGTGAT-----GCTGTCAATCTGGT
Dm (JX976930)        -----TATCAAAGCTGGTATTCATCATAGGAAGTTTAT-----GCTCTCAGTGTGGT
Dm (JX976937)        -----TATCAAAGCTGATATTCATCATAGGAAGTTTAT-----GCTCTCAGTGTGGT
Dm (JX976938)        -----AAAGCTGATATTCATCATAGAAAGTTTAA-----GCTCTCACTGTGGT
Ce (JX976929)        -----AAAGCTGGTATTCATCATAGAAAGTTTAT-----GCTCTCACTGTGGT
Dm (jx976934)        -----TATCAAAGCTGGTATTCATCATAGAAAGTTTAT-----GCTCTCACTGTGGT
Ce (JX976928)        -----TATCAAAGCTGATATTCATCATAGTAAGTTTAT-----GCTCTCACTGTGGT
Dm (JX976936)        -----AAAGCTGATATTCATCATAGAAAGTTTAT-----GCTCTCACTGTGGT
Mr (AFJA01006902)    AAACGAGATCGAAACCAGAGATCCACCAGAGGTAGATTAT-----GCTCTCTGTGTGGT
Mr (AFJA01006736)    AAACGAGATCGAAACCAGAGATCCACCAGGAAGGTAAT-----GCTCTCTGTGTGGT
Dm (JX976932)        -----AAAGCTGGTATTCATCAGAAGAAGGTTTAT-----GCTCACAGTGTAGT
Dm (JX976933)        -----TATCAAAGCTGGTATTCATCAGAAGAAGGTTTAT-----GCTCACAGTGTAGT
Si (AEAQ01010279)    ---CGACATCAAAGCAAACATTCATCAGAGAAAAATTATGTTGTGGCTCTCAGTGTGGT
Si (AEAQ01009575)    ---CGACATCAAAGCAAACATTCATCAGAGAAAAATTATGTTGTGGCTCTCAGTGTGGT
Cf (AEAB01001421)    ---CAACTTCAAAGCAGAACATTCATCAGAGGAAGATTAT-----GCTCTCAGTGTGGT
Cf (AEAB01018477)    ---CAACTTCAAAGCAGAACATTCATCAGAGGAAGATTAT-----GCTCTCAGTGTGGT
Ee (EEu_Mariner_Tbel) AAATGACATCGAAAGCAGACA TTCATCAGAGGAAGGTTAT-----GCTCTCAGTGTGGT
Pb (PBa_Mariner_Tbel) AAACGACATCAAAGCAAACATTCATCAGAGGAAGGTTAT-----GCTCTCAGTGTGGT
Tb (Mariner_Tbel)     AAACGACATCGAAAGCAGACATTCATCAGAGGAAGGTTAT-----GCTCTCAGTGTGGT
Hs (HSal_Mariner_Tbel) AAACGACA TCGAAAGCAGACATTCATCAGAGGAAGGTTAT-----GCTCTCAGTGTGGT
Hs (Mariner-22_HSal)  AAACCACTTCGAAGGCAGGGCTTCCACCCGAGCAAGATCAT-----GCTCTCAATTTGGT
Ae (Mariner-16_AEc)   AAGCAATCGCAAACCTGGATTGACGACGAAGAAGGTGAT-----GTTGTGTGTGTGGT
Ae (AEc_Mariner-8_SIn) AAACGACTTCAAAGCCTGGATTGATGGCAAATAAGGTGAT-----GCTGTGTGTATGGT
Si (Mariner-8_SIn)    AAACGACTTCAAAGCCTGATTTGACGACAAATAAGGTGAT-----GCTGTGTGTATGGT
Bte (Mariner-1_Bte)   AGACGACACCAAAGCTGAGATTCACCA -AAAAAGATTAT-----GCTGTCAAGTTTGGT
Am (AMe_FAMAR1)       AAACAACATCAAAGCTGGTATTCATCAAAGAAGGTTTT-----GTTATCAGTTTGGT
Fa (FAMAR1)           AAACAACATCAAAGCTGGTATTCATCAAAGAAGGTTTT-----GTTATCAGTTTGGT
Hs (Mariner-2_HSal)   AAACAACATCAAAGCTGATATTCATCAAAGAAGGTTAT-----GTTATCAGTTTGGT
Hs (Mariner-42_HSal)  AAACCGTATCGAAAGCTGAATTGCATCAAAAAAAGATCAT-----GCTGTCAATTTGGT
Ac (Mariner-13_Ace)   AAACCTCATCGAAAGCCGAACTGCATCAAAAAAAGATAAT-----GCTGTCAATTTGGT
Ae (AEVX01012963)    AAACCTCATCGAAAGCTGAACCTGCATCAAAAAAAGATAAT-----GCTGTCAATTTGGT
Cc_4                  -----AAAAGCTGGTATTCATCA-AAAAAGATCAT-----GCTGTCAATTTGGT
Cc_6                  ----TATCTCAAAGCTGATATTCATCA-AAAAAGATCAT-----GTTGTCAATTTGGT
Cc_5                  -----AAAAGCTGGTATTCATCA-AAAAAGATCAT-----GTTGTCAATTTGGT
Cc_7                  -----AAAAGCTGGTATTCATCA-AAAAAGATCAT-----GTTGTCAATTTGGT
Cc (JX976920)         ---TATCATCAAAGCTGATATTCATCA-AAAAGGATCAT-----GCTATCAGTTTGGT
Cc (JX976921)         -----AAAAGCTGGTATTCATCA-AAAAGGATCAT-----GCTATCAGTTTGGT
Cc (JX976922)         ---TATCATCAAAGCTGGTATTCATCA-AAAAGGATCAT-----GCTATCAGTTTGGT
Cc (JX976923)         -----AAAAGCTGGTATTCATCA-AAAAGGATCAT-----GCTATCAGTTTGGT
Dm (JX976931)         -----AAAAGCTGGTATTCATCATA--AAGGTCAT-----GCTCTCAATTTGGT
Ce (JX976927)         AAA-----G AAGTGCATATTCATCA-AAAAAGATCAT-----GCTGTCAATTTGGT
Dm (JX976935)         ---TATCAAAAAAAGCTGATATTCATCA-AAAAAGATCAT-----GCTGTCAATTTGGT
Ce (JX976926)         -----AAAAGCTGATATTCATCA-AAAAAGATCAT-----GCTGTCAATTTGGT
Ce (JX976924)         AAA-----AAAAGCTGATATTCATCA-AAAAAGGTCAT-----GCTGTCAATTTGGT
Ce (JX976925)         -----AAAAGCTGATATTCATCA-AAAAAGGTCAT-----GCTGTCAATTTGGT
Hs (Mariner-36_HSal)  AAAGCACTTCTAAAGCAGAC ATTCACCAAAGG AAGATTTT-----GCTATCTGTTTGGT
Hs (Mariner-23_HSal)  AAAGCACATCAAAGCAGACATCCACCAGAGAAAGGTGAT-----GCTCTCAATCTGGT
Pb (PBa_Mariner-23_HSal) AAAGCACATCAAAGCAAACATCCACCAGAGGAAGGTGAT-----GCTCTCAATCTGAT
Ca (Mariner_CA)       AAACCACTTCAAAGGCTGATATCCACCAAAAGAAGGTTAT-----GCTGTCTGTTTGGT
Si (Mariner-24_SIn)   AAAGCACTTTCGAAGGCCGATATTCATCAAAAAAAGGTGAT-----GCTATCTGTTTGGT
Sm (SMAR7)            AATCCACTTTCGAAGGCCGATATTCACCAAAAAAAGGTTAT-----GCTATC TGTTTGGT
Af (Mariner-1_AFl)    AAAGCACTTTCGAAGCCAAACATT CACCAAAAAAAGGTGAT-----GCTCTCTGTTTGGT
Hs (Mariner-11_HSal)  AAAGCACATCGAAAGCTGATATTCATCAAAAAAAGAGGTGAT-----GCTCTCTGTTTGGT
Hs (Mariner-16_HSal)  AGACGGTCGCAAAGCTGGATTA CACCCGAAGAAGGTCAT-----GCTCTGTATCTGGT

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Der (Mariner-2_DER) AAACAGTGGCCAAGCCGGGATTGACGGCCAGGAAGGTTTT-----GCTGTGTGTTTGGT
Hs (Mariner-26_HSal) AAACGATCGCCAAGCCCGGATTAACGGCCAAAGAAGGTTTT-----ACTGTGTGTTTGGT
Del (Mariner-2_DEL) AGGCGGTGGCTAAGCCAGGATTGACGGCCAGAAAGGTTTT-----GCTGTGTGTTTGGT
Del (Mariner-1_DEL) AGACGGTGGCCAAAGCCTGGATTGACGGCCAGGAAGGTTCT-----TCTGTGTGTTTGGT
Bt (Mariner-1_BT) CAACCACACCCAAGCCGGTCTTCATCCAAAGAAGGTGAT-----TGTTGTATATGGT
Ac (Mariner-5_ACe) TAGCCACCCCAAAAGCCGGTCTTCATCCAAAGAAGGTGAT-----GCTCTGTGTCTGGT
Si (Mariner-28_SIn) TGAC CACTCCAAAGCCTGGGCTTCATCCGGAGAAGATCAT-----GCTGTGTATTTGAT
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Hs (Mariner-24_SIn) GGGATTTCAAGGGTG--TCATCTATTACGAAC TGTACCGTCAGGCCAAAACGATTGATTC
Hs (Mariner-45_HSal) GGGATTGGAAGGGCA--TCGTGCATCACGAGCTGCTGCCGCCAGGCAGAACGATAGACTC
Cf (Mariner-6_CFl) GGAATTGGAAGGGGA--TAGTATATTATGAGCTACTACCGGACAACGAAACCATCGATTC
Hs (Mariner -35_HSal) GGGATTGGAAGGAA--TCGTGTA CTACGAGCTGCTTCCGCAAAACCAACAATTGATTC
Df (Mariner-1-DF) GGAATTGGAAGGGTG--TAGTGCAC TTTGAGCTGCTGGGACGGAATGAAACCATCAATTC
Ac (Mariner-1_ACe) GGGATTGGAAGGGAC--CAGTCTTCTATGAGCTACTTCCAAAGAACAACGATTAATTC
Lh (ADOQ01008024) GGGATTGGAAGGGAC--CAGTCTTCTATGAGCTGCTTCCAAAGAATAAAACGATTAATTC
Lh (ADOQ01001582) GGGATTGGAAGGGAC--CAGTCTTCTATGAGCTGCTTCCAAAGAATAAAACGATTAATTC
Dm (JX976930) AGG-----GTG--CTATGCTTTTCGAAC TCTACTAGGGA ACCAAAGAATCAATTC
Dm (JX976937) AGG-----GTG--CTATGCTTTTCGAAC TCTACTAGGGAACC AAAGAATCAATTC
Dm (JX976938) GGA-----GTG--CCATGCTTTTCGAAT TCCACTAAGGAACCAAAGAATCAATTC
Ce (JX976929) GGA-----GTG--CCATGCTTTTCGAAT TCCACTAAGGAACCAAAGAATCAATTC
Dm (JX976934) GGA-----GTG--CCATGCTTTTCGAAT TCCACTAAGGAACCAAAGAATCAATTC
Ce (JX976928) GGA-----GTG--CCATGCTTTTCGAAT TCCACTAAGGAACCAAAGAATCAATTC
Dm (JX976936) GGA-----GTG--CCATGCTTTTCGAAT TCCACTAAGGAACCAAAGAATCAATTC
Mr (AFJA01006902) GGGATTTCAAAGGCA--CAGTGT TTTTCGAAC TCTTATCAAGAAATCAAACGATCAATTC
Mr (AFJA01006736) GGGATTTGAAAGGCA--TAGTGT TTTTTCGAAT TCTATCAAGAAATCAAACGATCAATTC
Dm (JX976932) GGGATTTTAAAGGTG--ACATGT TTTTCAAGT TCTGCCAAGAAACCAAACATCAATTA
Dm (JX976933) GGGATTTTAAAGGTG--ACATGT TTTTCAAGT TCTGCCAAGAAACCAAACATCAATTA
Si (AEAQ01010279) GAGATGTT AAAGGTA--TCGTGT TTTCTCGAGCTCCTACCAAGGAACCAAACAATCAATTC
Si (AEAQ01009575) GGAATTTTAAAGGTG--TCGTGT TTTTTCGAGCTCCCACCAAGAAACCAAATAATCAATTC
Cf (AEAB01001421) GGGATTGGAAGGGTG--TG GTGTTTTTTTGAGCCCTACCAAGGAACCGAACATCAATTC
Cf (AEAB01018477) GGGATTGGAAGGGTG--TG GTGTTTTTTTGAGCCCTACCAAGGAACCGAACATCAATTC
Ee (EEu_Mariner_Tbel) GGGATTTTAAAGGCA--TT-----TTT TGAGCTCCTACCAAGGAACCAAACAATCAATTC
Pb (PBa_Mariner_Tbel) GGGATTTTAAAGGTG--TCGTGT TTTTTCGAGCTCCTACCAAGGAACCAAACAATCAATTC
Tb (Mariner_Tbel) GGGATTTTAAAGGTG--TCGTGT TTTTTCGAGCTCCTACCAAGGAACCAAACAATCAATTC
Hs (HSal_Mariner_Tbel) GGGATTTTAAAGGTG--TCGTGT TTTTTCGAGCTCCTACCAAGGAACCAAACAATCAATTC
Hs (Mariner-22_HSal) GGGATTGGAAGGGTG--TTGTGT TCTACGAGCTACTTCCGAAGAACAGAACGATCAATTC
Ae (Mariner-16_AEc) GGGATTGGAAGGGAA--TCGTTCACTATGAGCTGTTATCGCCGATCAAACAATTAATTC
Ae (AEc_Mariner-8_SIn) GGGATTGGAAGGGAG--TCGTCCATCATGAGGTGTTACCACATGGCCTAACGATTAATTC
Si (Mariner-8_SIn) GGGATTGGAAGGGAG--TCGTCCATCATGAGGTGTTACCACATGGCCTAACGATTAATTC
Bte (Mariner-1_Bte) GGGATTATAAAGGAA--TTCTGTACTTTGAACTTTTACCAAGAAACCAAACGATTAATTC
Am (AMe_FAMAR1) GGGATTACAAAGGAA--TTGTCTATTTTGAAC TCTTACCACCCAACCGAACGATCAATTC
Fa (FAMAR1) GGGATTACAAAGGAA--TTGTCTACTTTGAACTCTTACCACCCAACCGAACGATCAATTC
Hs (Mariner-2_HSal) GGGATTACAAAGGAA--TTGTCTACTTTGAAATTTTACCACCGCAACCAAACAATCAATTC
Hs (Mariner-42_HSal) GGGATTACAAAGGTG--TTGTGTATTTT GAGATGCTTCCAAGCAACCAAACGATCAACTC
Ac (Mariner-13_ACe) GGGATTTCAAAGGTG--TTGTGTATTTT GAGCTGCTTCCAAGGAATCAAACGATTAATTC
Ae (AEVX01012963) GGGATTTCAAAGGTG--TTGTGTATTTT GAGCTGCTTCCAAGGAATCAAACGATTAATTC
Cc_4 GGGATTACAAAGGTG--TTGTGTATTT CGGACTGTTTCCAAGGAATCAGACC-----
Cc_6 GGGATTACAAAGGTG--TTGTGTATTT CGGACTGTTTCCAAGGAATCAGACC-----
Cc_5 GGGATTACAAAG GTG--TTGTGTATTT CGATCGGTTTCCAAGGAATCAGACC-----
Cc_7 GGGATTACAAAGGGTG--TTGTGTATTT CGGACTGTTTCCAAGGAATCAGACC-----
Cc (JX976920) GGAATTACAAACGTA--TTGTGTATTTT GAGCTATTTCCAGGAACCGACGATCAATTC
Cc (JX976921) GGAATTACAAACGTA--TTGTGTATTTT GGTGCTATTTCCAGGAACCGACGATCAATTC
Cc (JX976922) GGAATTACAAACGTA--TTGTGTATTTT GAGCTATTTCCAGGAACCGACGATCAATTC
Cc (JX976923) GGAATTACAAACGTA--TTGTGTATTTT GAGCTATTTCCAGGAACCGACGATCAATTC
Dm (JX976931) GGAA-----TTTTGAGCTTCTTCCAAGGGAGCAGA--ATAAATTT
Ce (JX976927) GGAATTACAAAGGCT--GTGTGCATTTT GAGTTGCCCTCCAAGGAACCGACAATCAATTC
Dm (JX976935) GGAATTACAAAGGCT--GTGTGCATTTT GAGTTGCCCTCCAAGGAACCGACAATCAATTC
Ce (JX976926) GGAATTACAAAGGCT--GTGTGCATTTT GAGTTGCCCTCCAAGGAACCGACAATCAATTC
Ce (JX976924) GGAATTACAAAGGCT--GTGTGCATTTT GAGTTGCCCTCCAAGGAACCGACAATCAATTC
Ce (JX976925) GGAATTACAAAGGCT--GTGTGCATTTT GAGTTGCCCTCCAAGGAACCGACAATCAATTC
Hs (Mariner-36_HSal) GGGATTACAAAGGGTA--TTGTGT TTTT TGAAC TGTAAACGTAATCAACGATTGATTC
Hs (Mariner-23_HSal) GGGATTGGAAGGGTG--TG GTGTTTTTTCGAGCTCTTACCAGGAATGTTACGATCAATTC
Pb (PBa_Mariner-23_HSal) GGGATTGGAAGGGTG--TG GTGTTTTTTCGAGCTCTTACCAGGAATGTTTTCGATCAATTC
Ca (Mariner_CA) GGGATTGGAAGGGTG--TG GTTATATTTT GAGCTGCTTCCAAGGAACCAAACGATTAATTC

Si (Mariner-24_SIn) GGGATTTTCAAAGAAATCTTTTTTTTTTTTGGAGCTTCTACCGGACAACACAACGATCAATTC
Sm (SMAR7) GGGATTTTCAAAGGGGA--TCGT-TTTTTTTGAGCTTCTACCGGACAATACCACGATTAATTC
Af (Mariner-1_AFl) GGGATTTTCAAAGGGAG--TTGTTTTTTTTTGGAGCTTCTACCTGACAATTGCACGATTAATTC
Hs (Mariner-11_HSal) GGGATTGGAAAGGAA--TGGTTTTTTTTTGGAGCTGCTACCAAAACAACAAACGATTGATTC
Hs (Mariner-16_HSal) GGGATTGGAAAGGAA--TCGTCTATTATGAGCTGCTGCCACCCAACAAAACGATTGATTC
Der (Mariner-2_DER) GGGATTGGAAAGGAA--TCATCCACTATGAGCTGCTCCCATATGGCCAGACGTTAATTC
Hs (Mariner-26_HSal) GGGATTGGAAAGGAA--TTATCTACTATGAGCTGCTCCCATATGGCCAAACACTTAATTC
Del (Mariner-2_DEl) GGGATTGGCAAGGAA--TTATCTACTATGAGCTGCTCCCATATGGCCAAACACTTAATTC
Del (Mariner-1_DEl) GGGATTGGCAGGGAA--TAATCCACTATGAGCTGCTCCCATATGGCCAAACGCTCAATTC
Bt (Mariner-1_BT) GGGATTGGAAAGGGAG--TCCTCTATTATGAGCTCCTTCCGGAAAACCAAACGATTAATTC
Ac (Mariner-5_ACe) GGGATTGGAAAGGGGA--TCCTGTATTATGAGCTTTTACCAAAACAACGAGACGATAAATTC
Si (Mariner-28_SIn) GGGACTGGAA--GGTG--TCGTGTA TTATGAGCTCCTTCCAAAGAACGTACGGCTTAATTC

Hs (Mariner-24_SIn) AACTGTATACTGTTTCGCAATTGACGAAAT---GAACCAAGCAATCCGCACAAAACG--
Hs (Mariner-45_HSal) GGACCTGTACTGTGCGACAATTAGCGCGATT---GCACCTAGCAATTCAAAAGAAAACG--
Cf (Mariner-6_CFl) GGACAAGTACTGTTTACAGTTGGATAAAT---GAAGATAGAAATCGCCAAAAGTG--
Hs (Mariner -35_HSal) CAACAAGTATTGTTCCCAATTGGACTGTTT---GAAGGCAGCA ATCGATGAGAAGCG--
Df (Mariner-1-DF) AGATGTGTACTGTGCGCCAGCTATCCAATTT---GGCGGAAAAAATTAAGAAAAGGA--
Ac (Mariner-1_ACe) CGATGTCTACTGTGAGCAGCTGCAGAAAT---AAGTGATGCCATCGCACAGAAAACG--
Lh (ADOQ01008024) CGATGTCTCCTGTGAGCAGCTACAGAAAT---AAGTGATGCCATCGCACAGAAAACG--
Lh (ADOQ01001582) CGATGTCTACTGTGAGCAGCTACAGAAAT---AAGTGATGCCATCGCACAGAAAACG--
Dm (JX976930) AAATCCATACTGTTAACAATTT-----GAACGAATCCGTTACCTAGAAAAGG--
Dm (JX976937) AAATCCATACTGTTAACAATTT-----GAACGAATCCGTTACCTAGAAAAGG--
Dm (JX976938) AAATCTATACTGTTAACAATTT-----GAACGAATCTGTTATCAAGAAAAGG--
Ce (JX976929) AAATCTATACTGTTAACAATTT-----GAACGAATCTGTTATCTAGAAAAGG--
Dm (JX976934) AAATCTATACTGTTAACAATTT-----GAACGAATCTGTTATCTAGAAAAGG--
Ce (JX976928) AAATCTATACTGTTAACAATTT-----GAACGAATCTGTTATCTAGAAAAGG--
Dm (JX976936) AAATCTAT ACTGTTAACAATTT-----GAACGAATCTGTTATCTAGAAAAGG--
Mr (AFJA01006902) TGACGTCTACTGCCGGCAATTAGAAAAGTTT---GAAAAGAATCAATTGAACAAAAACG--
Mr (AFJA01006736) TGATATCTACTGCCGGTAATTAGAGAGTTT---GAAAAGAATCAATTGAACAAAAACG--
Dm (JX976932) GAGTGTGTACTATCAGCAATTGGACAGTTTAAAAGAAAAGAATCCTACGTGCAGAAAACA--
Dm (JX976933) GAGTGTGTACTATCAGCAATTGGACAGTTTAAAAGAAAAGAATCCTTTCGTGCAGAAAACA--
Si (AEAQ01010279) AAACGTGTACTGTTGGCAATTGGACAGTTT---TAACGAATCTATCACCTAGAAAATG--
Si (AEAQ01009575) GCGTATGTACTGTGCGCAATTGGACAATTT---AAACAAATCCATCATCCAGAAAACGTT
Cf (AEAB01001421) GGATGTGTACTGTGCGCAATTGGACAGTTT---GAACGAATCTGTTCATCCAGAAAACG--
Cf (AEAB01018477) GGATGTGTACTGTGCGCAATTGGACAGTTT---GAACGAATCTGTTCATCCAGAAAACG--
Ee (EEu_Mariner_Tbel) AAATGTGTACTGTGCGCAATTGGACAGTTT---GAACGAATCCATCATCCAGAAAATG--
Pb (PBa_Mariner_Tbel) GAATGTGTACTGTGCGCAATTGGACAGTTT---GAACGAATCCATCA TCCAGAAAACG--
Tb (Mariner_Tbel) GAATGTGTACTGTGCGCAATTGGACAGTTT---GAACGAATCCATCATCCAGAAAACG--
Hs (HSal_Mariner_Tbel) GAATGTGTACTGTGCGCAATTGGACAGTTT---GAACGAATCCATCATCCAGAAAACG--
Hs (Mariner-22_HSal) AGATGTGTACTGTAGTCAGCTGGATAAAT---GAATGCAGCGATCCACGAGAAGCG--
Ae (Mariner-16_AEc) CGAACTCTACTGTGAACAAC TGGAGAGATT---ACAACAAGCAATTGAGAGGAAGCG--
Ae (AEC_Mariner-8_Sln) AGAGCTCTACTGTTTCAACACTGGATAGATT---ACAGGAAGCGATTAAGGAAAAACG--
Si (Mariner-8_SIn) AGAGCTCTACTGTTTCAACACTGGATAGATT---ACAGGAAGCGATTAAGGAAAAACG--
Bte (Mariner-1_Bte) AAACGTGTACTGTTTCAACACTGCGCAAACT---GAGCGATGCAGTTCAAGAAAAGCG--
Am (AMe_FAMAR1) TGTTGTCTACATTGAACAAC TAAACGAAAT---AAACAATGCAGTTGAAGAAAAGCG--
Fa (FAMAR1) TGTTGTCTACATTGAACAAC TAAACGAAAT---AAACAATGCAGTTGAAGAAAAGCG--
Hs (Mariner-2_HSal) AGATGTATACTTCAACAAC TAAACGAAAT---GAACAATGCAATTCAGAAAAGCG--
Hs (Mariner-42_HSal) AGATGTTTACTG CCAACAAC TATGAAAT---GGAGGAAGCAATCAAAGAGAAAAG--
Ac (Mariner-13_ACe) AGATGTCTACTGCCAACAAC TAAATGAAACT---GGAGGAAGCAATCAAAGAAAACG--
Ae (AEVX01012963) AGATGTCTACTGCCAACAAC TAAATGAAACT---GGAGGAAGCAATTAAGAAAACG--
Cc_4 -----GGATGAAGCAATCAAAGAAAAGCT--
Cc_6 -----GGATGAAGCAATCAAAGAAAAGCT--
Cc_5 -----GGATGAAGCAATCAAAGAAAAGCT--
Cc_7 -----GGATGAAGCAATCAAAGAAAAGCT--
Cc (JX976920) AGATCCTTATTGTTAACAAC TTAATGAAAT---GGATGAAGCAACCAAAGAAAAGCT--
Cc (JX976921) AAATCCTTATTGTTAACAAC TTAATGAAAT---GGATGAAGCAACCAAAGAAAATA--
Cc (JX976922) AAATCCTTATTGTTAACAAC TTAATGAAAT---GGATGAAGCAACCAAAGAAAATA--
Cc (JX976923) AAATCCTTATTGTTAACAAC TTAATGAAAT---GGATGAAGCAACCAAAGAAAATA--
Dm (JX976931) ATATGTTTTCTGTTAACAAC TTAATGAAACT---GGATGAAGTAATCAAAGAAAACG--
Ce (JX976927) ACATGTTTACTGTCAACAAC TAAATAAACT---GAATGAAGCAATCAAAGAAAACG--
Dm (JX976935) ACATGTTTACTGTCAACAAC TAAATAAACT---AAATGAAGCAATCAAAGAAAACG--
Ce (JX976926) ACATGTTTACTGTCAACAAC TAAATAAACT---GAATGAAGCAATCAAAGAAAACG--
Ce (JX976924) ACATGTTTACTGTCAACAAC TAAATAAACT---GAATGAAGCAATCAAAGAAAACG--

Ce (JX976925) ACATGTTTACTGTCAACAAC TAATAAAACT----GAATGAAGCAATCAAAGAAAAACG--
Hs (Mariner-36_HSal) GGAATTGTACTGTGTCGTC AATTGGACAAAATT----ACACGAAGCAATCAAAGCAGAAGCG--
Hs (Mariner-23_HSal) GGACGTGTACTGTCAACAGCTCGACAAAATT----GAACGAAGCAATAGCAGAAAAAGCG--
Pb (Pba_Mariner-23_HSal) GGACGTGTACTGTCAACAGCTAGACAAAATT----GAACGAAGCAATAGCAGAAAAAGCG--
Ca (Mariner_CA) GGATGTTTACTGTCAACAAC TGGACAAAATT----GAATGCAGCAATCAAGCAGAAAAGCG--
Sl (Mariner-24_SIn) TGAAGTGTACTGTCAATCAGCTGGACAAAATT----GAATGATTCACTTAAACAGAAAAG--
Sm (SMAR7) TGAA GTGTACTGTGATCAACTGGACAAAATT----GAATGATTCGCTCAAAACAGAAAAG--
Af (Mariner-1_AFl) GGAA GTGTACTGCAATCAATTGGACAAAATT----AAACGATTCCATCAAAACAAAAGAG--
Hs (Mariner-11_HSal) GAATGTGTATTGTCAATCAATTGGACAAAATT----GAATGATTCATCAAGCAGAAGAG--
Hs (Mariner-16_HSal) GACCAAGTACTGCTCACAAC TGGCCAAAATT----AAAGCGAGCAATCGATCAGAAGCG--
Der (Mariner-2_DER) TACCATCTACTGCGAACAACTGGACCGCTT----GAAGCAGGCGATCGACCAGAAGCG--
Hs (Mariner-26_HSal) GGACCTACACTGTCAACAAC TGCAGACTT----GAAGCAGGCGATCGACCAGAAGCG--
Del (Mariner-2_DEL) GGT TTTGTACTGTCAACAATTGGACCGCTT----GAAGGAAGCAATGCCCAGAAGCG--
Del (Mariner-1_DEL) GGACCTGTACTGCCAACAACTGGACCGCTT----GAAGGCAGCACTCATGCGAGAAGAG--
Bt (Mariner-1_BT) CAACAAGTACTGCTCCCAGTTAGACCAACT----GAAAGCAGCACTCGACGAAAAGCG--
Ac (Mariner-5_ACe) AGAGAAGTATTGTTCCCAATTAGACGAATT----GAAGACAGCAATGAAACAAAACG--
Si (Mariner-28_SIn) GGACAAGTACTGTGCCCAAT TGGACAAAATT----GAAGGAAGCCATTGCGAGAAAACG--

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Hs (Mariner-24_SIn) ----TCCAGAATTGGCAAAT-CGCAAGGGTGTGCTCTTCCACCACGACAACGCCAGACCT
Hs (Mariner-45_HSal) ----GCCGGAACCTGGTCAAC-AGAAAAGGGTGTGCTATACCACGCTGACAACGCCAGACCG
Cf (Mariner-6_CFl) ----TCCGGAATTGATCAAT-AGGAAAAGGCGTCTGTTTTTCATCATGATAACGCCAGACCT
Hs (Mariner-35_HSal) ----TCCAGAATTGAGCAAAT-CGTTATGGTGTCAATTTCCACCAAGACAACGCTAGACCT
Df (Mariner-1-DF) ----GCCGGCACTAGCTAAT-CGCAAGGGTATAGTCTTTCCACCATGACAACGCTAGGCC
Ac (Mariner-1_ACe) ----TCCCAGCTAATCAAT-CGTAAGGGTGTGGTGTTCACCACGACAATGCGAGACCA
Lh (ADOQ01008024) ----TCCCAGCTAATCAAT-CGTAAGGGTGTGGTGTTCACCACGACAATGCGAGACCA
Lh (ADOQ01001582) ----TCCCAGCTGATCAAT-CGTAAGGGTGTGGTGTTCACCACGACAATGTGAGACCA
Dm (JX976930) ----TGCAAAGCACCTTAAT-AAGTTAGGATTGGCATTTCATCGCGGCAATGCAAGGCCA
Dm (JX976937) ----TGCA AAGCACCTTAAT-AAGTTAGGATTGGCATTTCATCGCGGCAATGCAAGGCCA
Dm (JX976938) ----TGCAAGACTTCTTAATAAGTAAAGGAGTGGCGTTTTCTGACGGCAATGCAAGGCCA
Ce (JX976929) ----TGTAGAGCTTCTTAATAAGTAAAGGAGTGGCGTTTTCTGACGGCAATGCAAGGCCA
Dm (JX976934) ----TGCAGAGCTTCTTAATAAGTAAAGGAGTGGCGTTTTCTGACGGCAATGCAAGGCCA
Ce (JX976928) ----TGCAGAGCTTCTTAATAAGTAAAGGAGTGGCGTTTTCTGACGGCAATGCAAGGCCA
Dm (JX976936) ----TGCAGAGCTTCTTAATAAGTAAAGGAGTGGCGTTTTCTGACGGCAATGCAAGGCCA
Mr (AFJA01006902) ----CCCAGAACTAGCCAAC-CGTAAGGAGTGTGTTCCAACACGATAATGCGAGACCA
Mr (AFJA01006736) ----CCCAGAACTGGCCAAT-CGTAAGGATTTATGTTCCACCCGATAATGCGAGACCA
Dm (JX976932) ----TCCAGAGCTTGTTAAC-CATAAAGGAGTTGTATTTTCATCATGACAATGCAAGGCCA
Dm (JX976933) ----TCCAGAGCTTGTTAAC-CATAAAGGAGTTGTATTTTCATCATGACAATGCAAGGCCA
Si (AEAQ01010279) ----TATA-AATTCATTAAT-CGTAAGGAGTGTGTTCCATCAGCAC AACCGGTGACCA
Si (AEAQ01009575) AATATCCAGAATTCGTTAAC-CATAAAGGAAGTGTGTTCCATCAGCAC AACCGGAGACCA
Cf (AEAB01001421) ----TCCGGAGCTCGTCAAT-CGTAAGGAGTGTGTTCCATCAGCAC AACCGGAGACCA
Cf (AEAB01018477) ----TCCGGAGCTCGTCAAT-CGTAAGGAGTGTGTTCCATCAGCAC AACCGGAGACCA
Ee (EEu_Mariner_Tbel) ----TCCAGAGCTCGTTAAT-CGTAAGGAGTGTGTTCCATCATGACAACGCAAGACCA
Pb (Pba_Mariner_Tbel) ----TCCAGAGCTCGTTAAT-CGTAAGGAGTGTGTTCCATCAGCAC AACCGGAGACCA
Tb (Mariner_Tbel) ----TCCAGAGCTCGTTGAT-CGTAAGGAGTGTGTTCCATCAGCAC AACCGGAGACCA
Hs (HSal_Mariner_Tbel) ----TCCAGAGCTCGTTAAT-CGTAAGGAGTGTGTTCCATCAGCAC AACCGGAGACCA
Hs (Mariner-22_HSal) ----TCCAGAATTGGTGAAT-CGTAGAGGGCTGCTCTTCCATGACAACGCTAGGCCG
Ae (Mariner-16_AEc) ----GCCAGAATTAATCAAT-AGGAGGGGTGTCGCTCTTCCATCAGCAC AACCGTGCACCA
Ae (AEc_Mariner-8_Sln) ----ACCAGAATTGATTAAC-AGAAAAGGTGTTGCTTCCATCATGACAACGCCAGACCA
Si (Mariner-8_SIn) ----ACCAGAAT TGATCAAC-AGAAAAGGTGTTGCTTCCATCATGACAACGCCAGACCA
Bte (Mariner-1_Bte) ----GCCAGAATTGGCAAAT-CGTAAGGGTGTGTTTTCCAGCATGATAATGCAAGGCC
Am (AMe_FAMAR1) ----GCCCGAATTGACAAAT-CGAAAAGGTGTTGTATTCCATCATGACAATGCAAGGCCA
Fa (FAMAR1) ----GGCCGAATTGACAAAT-CGAAAAGGTGTTGTATTCCATCATGACAATGCAAGGCCA
Hs (Mariner-2_HSal) ----ACCAGAATTGGCAAAT-CGAAAAGGTATTGTGTTCCACCATGACAATGCAAGGCCA
Hs (Mariner-42_HSal) ----GCCAGAATTGGCAAAT-CGTAAGGAAT CGTGTTCCACCACGACAATGCGAGGCC
Ac (Mariner-13_ACe) ----GCCAGAGTTAGCGAAT-CGCAAAGGAATCGTCTTTCATCATGACAATGCAAGACCA
Ae (AEVX01012963) ----GCCAGAGTTAGCGAAT-TGCAAAGGAATCGTCTTTCATCATGACGATGCAAGACCA
Cc_4 ----GCCATAATCACCACAT-CACATACGAATTGTGTTCCGATCATGATAATGCAAGGCCA
Cc_6 ----GCCATAATCGGCACAT-CACATACGAATTGTGTTCCGATCATGATAATGCAAGGCCA
Cc_5 ----GCCATAATGGCAAAT-CACATAGGAACTGTGTTCCGATCATGAT----CAAGGCCA
Cc_7 ----GCCATAATGGCAAAT-CACATAGGAACTGTGTTCCGATCATGAT----CAAGGCCA
Cc (JX976920) ----GCCATAATGGCAAAT-CACATAGGAACTGTGTTCCGATCATGAT----CAAGGCCA
Cc (JX976921) ----GCTAAAATGGAAAAAT-CGCTATAGAATTATGTTCCACCATGTTAAAGCAAGGCCA
Cc (JX976922) ----GCTAAAATGGAAAAAT-CGCTATAGAATTGTGTTCCACCATGTTAAAGCAAGGCCA
Cc (JX9723) ----GCTAAAATGGAAAAAT-CGCTATAGAATTGTGTTCCACCATGTTAAAGCAAGGCCA

Dm (JX976931) ----GCCAAATTTGGCAAAT-CGCAAAGGGAGTTGTGTTCCACCGTGATAATGCAAGGCCA
 Ce (JX976927) ----ATCAGAATTGGCAAAT-CGCAAAGGAATTGTGTTCCACCATGATAATGCAAGGCCA
 Dm (JX976935) ----ATCAGAATTGGCAAAT-CGCAAAGGAATTGTGTTCCACCATGATAATGCAAGGCCA
 Ce (JX976926) ----ATCAGAATTGGCAAAT-CGCAAAGGAATTGTGTTCCACCATGATAATGCAAGGCCA
 Ce (JX976924) ----ATCAGAATTGGCAAAT-CGCAAAGGAATTGTGTTCCACCATGATAATGCAAGGCCA
 Ce (JX976925) ----ATCAGAATTGGCAAAT-CGCAAAGGAATTGTGTTCCACCATGATAATGCAAGGCCA
 Hs (Mariner-36_HSal) ----CCCAGAACTGGTGAAT-CGTAAAGATGTTGTCTTTCCACCATGACAACGCTAGACCA
 Hs (Mariner-23_HSal) ----GCCAGAATTGATAAAT-CGCAAAGGAGTGGTCTTCCATCATGACAACGCTCGACCA
 Pb (Pba_Mariner-23_HSal) ----GCCAGAATTGATAAAT-CGCAAAGGAGTAGTATTCCAACATGACAACGCTCGACCA
 Ca (Mariner_CA) ----GCCAGAATTGATCAAT-CGTAAAGGTGTCATATTCCATCAGGACAACGCCAGACCA
 Si (Mariner-24_SIn) ----GCCAGAATTGATCAAT-AGAAAAGGTGTAGTGTTCACCAAGATAATGCGAGACCT
 Sm (SMAR7) ----GCCAGAATTGATCAAT-AGAAAAGGTGTAGTGTTCACCAAGATAATGCGAGACCT
 Af (Mariner-1_AFl) ----ATCTGAATTAATTAAC-AGGAAAAGATGTAGTGTTCATCAGATAACGCTAGACCT
 Hs (Mariner-11_HSal) ----ACCAGAATTGGCGAAC-AGAAAAGGTGTTGTGTTTCATCATGACAACGCCAGACCT
 Hs (Mariner-16_HSal) ----GCCCGAATTGGCGAAC-AGAAAAGGCGTTGTGTTCCACCAAGGACAACGCTAGACCA
 Der (Mariner-2_DER) ----TCCAGAATTGGCCAAC-AGGAAGGGTGTAGTGTTCACCAAGGACAACGCCAGACCA
 Hs (Mariner-26_HSal) ----GCCAGAATTGGCCAAT-AGGAAGGGTGTGTTGTGTTCCATCAAGACAATGCCAGGCCG
 Del (Mariner-2_DEl) ----CCCCGCTTTGGCCAAT-AGGAAAAGGAATTGTTTTCCATCAGGACAACGCTAGACCA
 Del (Mariner-1_DEl) ----GCCATCTTTGATCAAC-AGAGGCCGAATTGTCTTCCATCAGGACAACGCCAGGCCA
 Bt (Mariner-1_BT) ----TCCGGAATTAGTCAAC-AGAAAACGCATAATCTTCCATCAGGATAACGCAAGACCG
 Ac (Mariner-5_ACe) ----TCCAGAAATAGCGAAT-CGGAAGGGCGTCTGTTTCATCAGGACAATGCGCGGCCT
 Si (Mariner-28_SIn) ----CCCAGAATTGGTGAAT-AGAAAAGGTGTTTTATTTCCATCAGGACAACGCCAGGCCCT

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Hs (Mariner-24_SIn) CATACGTCATTGACCACTCGGAA-
 Hs (Mariner-45_HSal) CATACATCTTTAACGACCCGCTCAG
 Cf (Mariner-6_CFl) CATGCAAGTTTGCAGACTCGCCAA
 Hs (Mariner-35_HSal) CACGTATCTTTGGCAACCCGGCAA
 Df (Mariner-1-DF) CACACATCTTTGGTCACTCGGCA-
 Ac (Mariner-1_ACe) CACACAAGTTTGGTCACTCGGC--
 Lh (ADOQ01008024) CACACAAGTTTGGTCACTCGGC--
 Lh (ADOQ01001582) CACACAAGTTTGGTCACTCGGC--
 Dm (JX976930) CACACATCTTTGA-----
 Dm (JX976937) CACACATCTTTGA-----
 Dm (JX976938) CACACATCTTTGA-----
 Ce (JX976929) CACACATCTTTGA-----
 Dm (JX976934) CACACATCTTTGA-----
 Ce (JX976928) CACACATCTTTGA-----
 Dm (JX976936) CACACATCTTTGA-----
 Mr (AFJA01006902) CACACAAGTTTGGTCAACCCGC---
 Mr (AFJA01006736) CAGACGAGTGTGGTCAACCCGC---
 Dm (JX976932) CACACATCTTTGA-----
 Dm (JX976933) CACACATCTTTGA-----
 Si (AEAQ01010279) TACATAAGTTTGTATCAC-----
 Si (AEAQ01009575) CACACAATTTGATCAG-----
 Cf (AEAB01001421) CACACATCTTTGGC-----
 Cf (AEAB01018477) CACACATCTTTGGC-----
 Ee (EEu_Mariner_Tbel) CACACAAGTTTGTATCACCTGT---
 Pb (Pba_Mariner_Tbel) CACACAAGTTTGAACACCCGT---
 Tb (Mariner_Tbel) CACACAAGTTTGTATCACCCGT---
 Hs (HSal_Mariner_Tbel) CACACAAGTTTGTATCACCCGT---
 Hs (Mariner-22_HSal) CACACATCTCTACAAACCCGGCAA
 Ae (Mariner-16_AEc) CACACATCTTTGATAACTCGGCAA
 Ae (AEc_Mariner-8_SIn) CACACATCTTTGATGACGCGCCAA
 Si (Mariner-8_SIn) CACACATCTTTGATGACGCGCCAA
 Bte (Mariner-1_Bte) CACACATCTTTGGTCACTCGCCA-
 Am (Ame_FAMAR1) CACACATCTTTGGTCACTCGGCA-
 Fa (FAMAR1) CACACATCTTTGGTCACTCGGCA-
 Hs (Mariner-2_HSal) CACACATCTTTGGTCACTCGGCA-
 Hs (Mariner-42_HSal) CACACATCTTTGACAACACGTAC-
 Ac (Mariner-13_ACe) TACACATCTTTGGCCACGCGGCA-
 Ae (AEVX01012963) TACACATCTTTGGCCACGCGGCA-
 Cc_4 CACACATCTTTGTTGA-----
 Cc_6 CACACATCTTTGGA-----
 Cc_5 CACACATCTTTGTTGA-----

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Cc_7          CACACATCTTTGTTGA-----
Cc (JX976920) CACACATCTTTGGA-----
Cc (JX976921) CACACATCTTTGTTG-----
Cc (JX976922) CACACATCTTTGGA-----
Cc (JX976923) CACACATCTTTGTTGA-----
Dm (JX976931) CACACATCTTTGCTTTG-----
Ce (JX976927) CACACATCTTTGGA-----
Dm (JX976935) CACACATCTTTGGA-----
Ce (JX976926) CACACATCTTTGTTGA-----
Ce (JX976924) CACACATCTTTGGA-----
Ce (JX976925) CACACATCTTTGTTGA-----
Hs (Mariner-36_HSal) CATACATCGTTGGTCACCCGCCA-
Hs (Mariner-23_HSal) CACACAAGTTTGATGACTCGCG--
Pb (Pba_Mariner-23_HSal) CATACAAGTTTGATGACTCGCA--
Ca (Mariner_CA) CACACATCTTTGATGACCCGCCA-
Si (Mariner-24_SIn) CATACAAGTTTGGTAACTCGTCA-
Sm (SMAR7) CATACAAGTTTGGTAACTCGCCA-
Af (Mariner-1_AFl) CACACGAGTTTAAATGACTCGCCA-
Hs (Mariner-11_HSal) CACACAAGTTTAAATGACTCGCCA-
Hs (Mariner-16_HSal) CACGTTTCTCTGATGACCCGGCAA
Der (Mariner-2_DEr) CACACTTCGTTGATGACTCGTCAG
Hs (Mariner-26_HSal) CACACATCTTTGACGACGCGCCAG
Del (Mariner-2_DEl) CACACGTCAATAGCGACTCGCCAG
Del (Mariner-1_DEl) CACACATCTTTAGTGACGCGCCAG
Bt (Mariner-1_BT) CATGTTTCTTTGATGACCAGGCAA
Ac (Mariner-5_ACe) CATGTGTCTTTGATAAATCGACA-
Si (Mariner-28_SIn) CATGTTTCTTTAACCACCCGGAA-

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