

Alignment of CMT2 sequences from different Accessions:

_ref = reference (Columbia genotype) _altA = CMT2A-nr, _altB= CMT2B-nr

```
TAIR10      MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
992_ref     MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
6918_ref    MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
6188_altA   MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
1061_altA   MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
6113_altB   MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
6191_altB   MLSPAKCESEEAQAPLDLHSSSRSEPECLSLVLWCPNPEEAAPSSTRELIKLPDNGEMSL 60
*****

TAIR10      RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
992_ref     RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
6918_ref    RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
6188_altA   RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
1061_altA   RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
6113_altB   RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
6191_altB   RRSTTLNCNSPEENGGEGRVSQRKSSRGKSQPLLMLTNGCQLRRSPRFRAVHANFDNVCS 120
*****

TAIR10      VPVTKGGVSQRKFSRGKSQPLLTLTNGCQLRRSPRFRAVDGNFDSVCSVPVTGKFGSRKR 180
992_ref     VPVTEGGVSQRNNSRGKSQPLLTLTNGCQLRRSPRSRAVDGNFDSVCSVPVTGKFGSRKR 180
6918_ref    VPVTEGGVSQRNNSRGKSQPLLTLTNGCQLRRSPRFRAVDGNFDSVCSVPVTGKFGSRKR 180
6188_altA   VPVTKGGVSQRKFSRGKSQPLLTLTNGCQLRRSPRFRAVDGNFDSVCSVPVTGKFGSRKR 180
1061_altA   VPVTEGGVSQRNNSRGKSQPLLTLTNGCQLRRSPRFRAVDGNFDSVCSVPVTGKFGSRKR 180
6113_altB   VPVTEGGVSQRNNSRGKSQPLLTLTNGCQLRRSPRFKAVDGNFDSVCSVPVTGKFGSRKR 180
6191_altB   VPVTEGGVSQRNNSRGKSQPLLTLTNGCQLRRSPRFKAVDGNFDSVCSVPVTGKFGSRKR 180
***:*****: *****: *****: *****: *****: *****

TAIR10      KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
992_ref     KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
6918_ref    KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
6188_altA   KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
1061_altA   KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
6113_altB   KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
6191_altB   KNSALDKKESDSEGLTFKDIAVIAKSLEMEIISECQYKNNVAEGRSRLQDPAKRKVD 240
*****

TAIR10      DTLLYSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
992_ref     DTLLYSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
6188_ref    DTLSSSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
6188_altA   DTLSSSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
1061_altA   DTLSSSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
6113_altB   DTLLYSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
6191_altB   DTLLYSSINSSKQSLGSKRMRRSRQRFMKGTENEGEENLGKSKGKMSLASCSPFRSTR 300
*** *****.*****

TAIR10      SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
992_ref     SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
6918_ref    SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
6188_altA   SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
1061_altA   SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
6113_altB   SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
6191_altB   SGTVETGNTETLNRKDCGPALCGAEQVRGTERLVQISKNDHCCAMKKCEGDGLVSSKQ 360
*****

TAIR10      ELLVFPSGCIKKTVNGCRDRTLKGRSSGLNTDDIHTSSLKISKNDTNSGLTMTTALVEQ 420
992_ref     ELLVFPSGCIKKTVNGCRDRTLKGRSSGLNTDDIHTSSLKISKNDTNSGLTMTTALVEQ 420
6918_ref    ELLVFPSGCIKKTVNVCRDRTLKGRSSGLNTDDIHTSSLKISKNDTNSGLTMTTALVEQ 420
6188_altA   ELLVFPSGCIKKTVNVCRDRTLKGRSSGLNTDDIHTSSLKISKNGTNSGLTMTTALVEQ 420
1061_altA   ELLVFPSGCIKKTVNVCRDRTLKGRSSGLNTDDIHTSSLKISKNGTNSGLTMTTALVEQ 420
6113_altB   ELLVFPSGCIKKTVNGCRDRTLKGRSSGLNTDDIHTSSLKISKNDTNSGLTMTTALVEQ 420
6191_altB   ELLVFPSGCIKKTVNGCRDRTLKGRSSGLNTDDIHTSSLKISKNDTNSGLTMTTALVEQ 420
*****

TAIR10      DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVESGSAL 480
992_ref     DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVESGSAL 480
6918_ref    DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVESGSAL 480
6188_altA   DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVKSGSAL 480
1061_altA   DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVKSGSAL 480
6113_altB   DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVESGSAL 480
6191_altB   DAMESLLQGKTSACGAADKGTREMHVNSTVIYLSDSDEPSSIEYLNGLDNLQVESGSAL 480
*****
```

TAIR10 SSGGNEGIVSLDLNPTKSTKRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
992_ref SSGGNEGIVSLDLNPTKSTNRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
6918_ref SSGGNEGIVSLDLNPTKSTKRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
6188_altA SSGGNEGIVSLDLNPTKSTKRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
1061_altA SSGGNEGIVSLDLNPTKSTKRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
6113_altB SSGGNEGIVSLDLNPTKSTKRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
6191_altB SSGGNEGIVSLDLNPTKSTKRKGRVTRTAVQEQNKRSICFFFIGEPLSCEEAQRWRWR 540
*****:*****

TAIR10 YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
992_ref YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
6918_ref YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
6188_altA YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
1061_altA YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
6113_altB YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
6191_altB YELKERKSKSRGQOSEDDEDKIVANVECHYSQAKVDGHTFSLGDFAYIKGEEETHVGOI 600
*****:*****

BAH Domain Y586C

TAIR10 VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
992_ref VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
6918_ref VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
6188_altA VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
1061_altA VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
6113_altB VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
6191_altB VEFFKTTDGESYFRVQWFYRATDTIMERQATNHDKRRLFYSTVMNDNPVCLISKVTVLQ 660
*****:*****

TAIR10 VSPRVGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECCADVVPTESTESILKK 720
992_ref VSPRAGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECWADVVPTESTESILKK 720
6918_ref VSPRAGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECCADVVPKSTESILKK 720
6188_altA VSPRAGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECCADVVPTESTESILKK 720
1061_altA VSPRAGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECCADVVPTESTESILKK 720
6113_altB VSPRAGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECCADVVPKSTESILKK 720
6191_altB VSPRAGLKPNISIKSDYYFMEYCVVEYSTFQTLRNPKTSENKLECCADVVPKSTESILKK 720
:**

TAIR10 KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
992_ref KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
6918_ref KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
6188_altA KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
1061_altA KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
6113_altB KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
6191_altB KFSFGELPVLDLYSGCGGMSTGLSLGAKISGVDVVTKWAVDQNTAACKSLKLNHPNTQVR 780
*****:*****

TAIR10 NDAAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
992_ref NDAAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
6918_ref NDAAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
6188_altA NDAAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
1061_altA NDAAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
6113_altB NDSAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
6191_altB NDSAGDFLQLLKEWDKLCRYVFNNQRTDTLRSVNSTKETSESSSSDDSDSEEEYEVE 840
:***

CHROMO Domain

TAIR10 KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
992_ref KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
6918_ref KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
6188_altA KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
1061_altA KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
6113_altB KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
6191_altB KLVDICFGDPDKTGKNGLKFVHWKGYRSEDDETWELAEELSNCQDAIREFVTSGFKSKIL 900
*****:*****

C5 Methyltransferase Domain

TAIR10 PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDRNQIIVFMDIVEYLKPSYVLMENVV 960
992_ref PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDRNQIIVFMDIVEYLKPSYVLMENVV 960
6918_ref PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDRNQIIVFMDIVEYLKPSYVLMENVV 960
6188_altA PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDRNQIIVFMDIVEYLKPSYVLMENVV 960
1061_altA PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDRNQIIVFMDIVEYLKPSYVLMENVV 960
6113_altB PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDE NQOIIVFMDIVEYLKPSYVLMENVV 960
6191_altB PLPGRVGVICGGPPCQGISGYNRHRNVDSPLNDE NQOIIVFMDIVEYLKPSYVLMENVV 960
*****:*****

R934K

TAIR10 DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
992_ref DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
6918_ref DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
6188_altA DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
1061_altA DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
6113_altB DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
6191_altB DILRMDKGSGLGRYALSRLVMRYQARLGIMTAGCYGLSQFRSRVFMWGA VPKNLPFPPL 1020
*****:*****

TAIR10 PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSNDEDREKLPYESL 1080
992_ref PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSNDEDREKLPYESL 1080
6188_ref PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSNDEDREKLPYESL 1080
6188_altA PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSNDEDREKLPYESL 1080
1061_altA PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSNDEDREKLPYESL 1080
6113_altB PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSN EDREKLPYESL 1080
6191_altB PTHDVIVRYGLPLEFERNVVAYAEGQPRKLEKALVLKDAISDLPHVSN EDREKLPYESL 1080
*****:*****

D1068E

TAIR10 PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVCQIPKRKGANFRD 1140
992_ref PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVCQIPKRKGANFRD 1140
6188_ref PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVCQIPKRKGANFRD 1140
6188_altA PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVRIIPKRKGANFRD 1140
1061_altA PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVRIIPKRKGANFRD 1140
6113_altB PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVCQIPKRKGANFRD 1140
6191_altB PKTDFQRYIRSTKRDLTGSAIDNCNKRTMLLHDHRPFHINEDDYARVCQIPKRKGANFRD 1140

C1127R

TAIR10 LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
992_ref LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
6188_ref LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
6188_altA LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
1061_altA LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
6113_altB LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
6191_altB LPGLIVRNNTVCRDPSMEPVILPSGKPLVPGYVFTFQQGKSKRPFARLWDETVPTVLTV 1200
:**

TAIR10 PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260
992_ref PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260
6188_ref PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260
6188_altA PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260
1061_altA PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260
6113_altB PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260
6191_altB PTCHSQALLHPEQDRVLTIRE SARLQGFDPDYFQFCGTIKERYCQIGNAVAVSVSRALGYS 1260

TAIR10 LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQETIPH 1295
992_ref LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQETIPH 1295
6188_ref LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQETIPH 1295
6188_altA LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQETIPH 1295
1061_altA LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQETIPH 1295
6113_altB LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQEAIPH 1295
6191_altB LGMAFRGLARDEHLIKLPQNFSSHSTYPQLQEAIPH 1295
*****:***