Appendix S1 m^6A domain analysis of mRNA sequences.

MdMLO19-mRNA

UAUAUAUAUAUCUAUCUAUUUGCUUACUCUGCUAGCUAGCUAUAAUAAAGGUAUCUA
AAUACCAUAUUAACUUCUUGCCAAUAGCAUAUUUUGGUGAGGAGGAAACAG
GGUUUCUAAUAAAAGCAUGGCAGGACAGGAAAGAAGGAAGAUCUUUGGAGCAAAAC
CAACUGGGCAGUGCCGUGUGGUGGUGUUUGCUGUUUGUUUGGUUUGUAUUAUUCAAAUC
UUGAAUAUUAUCUAUUAUUAUGGAAAGUGGUUGAAAAGGAGAAGGAAACCAAAAGAGG
UCUCUUAUGAAGCAGCAGUGAGAAGAUCAGCAGCGUGCUUAUGCUAUAGGGGCUUC
AUCCUCUCUUCUACAGUGGACAAGGCCCAUUCAAAUAAUUUUUAUUUGUACUGAAG
UCUGUUGGAGCAGCAUCUUUGGCAACUCAAGCAGUAAAGCAAGAGGUCAAACAC
AGAACGAAAGAUAGAGUGUUCAAGAUCAGACACGCCCCAGAAAGGCUUCUCUC
AGCCUUGGAUCCAGUGGGGAGCCGAGCUGUUUAGCGAGGUAUGAUG
ACAAAUUGUGCUUCAACAAAGAGUCAUUUUUGUUGUCAUAUAUGGGAUCCACCA
GCUUCACUAUCUACUUUGUGCUAGCUAGCUUCCAGCAGGCUUUAUCUGAUAAC
AACCUCUAGUUUUGGCGAGCAAGAUGAGAAUGGAAAAGAAAAUGGAAAGACUGGAA
ACAAAAACAGCUGCUACAUUCUCACAGCCGAAAGAUUCAGAUUUUGCCA
GAGACACAUCCUUGGGAGAGACACAUUAAGCUUUGGGAGCCGUCUCUCCCAUAUA
GCUUAUGUGGAUGGUUUGCUCUCAGACAGUUGUAAUGCUACUUGGGGAGCCGUCUCUCCUACACAGU
AUUCUUGACUCUGCGAUCUGGGUUAUUGCAUCAGUACUUUGGCUCUCUCCCAAGAGC
AAACUAAGUUGACUUCACAGGUCACUUGAAGAGGAUUAACAGGCUUCUCCUCAAA
GGUUGCGUAGGGAUGCAGCAACAUUUUGGUUUGUUGCGUGUAACUGUUAGG
MdMLO19-X1-mRNA

UCUCUUUCUCUCUCUCUCUCUCUCAUAUCAUGAUCGAUACUCAGUGUUUC
AUUCAUUGUUUCCGCAUACAUUGGGAACUCAAUUGGAAACUCAGUGUUUUAU
UCAUUGUUUCUUGUCUAUUGGGGUUUGAGUCAAUUGGGAACUCAAUUGGAAACU
UAAGUUAUUUCAUUCAGUCUUUCUUUGUCAAAUUGGGCAACUUAAUCCAGAAAA
UCGUAGUCGUUUUGUUUGGUUUUGCUUGAUUUUCAAUUAUCUUGAACACUAUA
ACUUAUAAGCAAUGGUUAAAGAAAGACAAACGCCCUCUUGCAAGCACAUA
GAAAAGAUCAAACAGACUUAUUGUUUGGUUCAUACUCUCUCUUUAAACUG
UGGGACAAAGGACAAUAAACAUUGCAUACAGACAAAUUGGCAACACUUG
GCAUCCGUGUGGCAAGAGCAAGAACAACUAAAUGAAUAGGAAAGGAAUGGAG
UAUGUGGAUGAAAACCCCGAGCAGAGACUGCUUGCUUGGUUAACGAGACGCGG
GGUGGCUCACGCUGUUCUGUCUGCUUGGCACACAAAUGUUCUGCAACG
GUAAAAGUACCUUUUAUAACUCUGCGGAUUGGUUAUCAUCAACUGCAUUUUAU
UCGUUGUUGGCUUUUCUCAAUGUCUUCUAAUGCAUCCUCACAAUGGCCUUUAGGAA
GAGCCAAGAUGGGAAUGGGAAGCCGGUUGGAAAAGGAAAACAAAGACAGUGAAGA
AUUCAAAUUUCUCAUGACCCAGAGAGAUCGUGUUUGCAAGGACACAAUCUUUG
GGAGGAGGCAUAUGAGUUUCUGGACAAAACACUUUCCUUUGCAGGAAUGUAGU
GUUUUUUUGAGCAAAUUUGUAGGACCGUUCUCCAAAGUGGAUACUUAACCUCUG
GGCAUUGGGAUUAAUCUGGCACAUUUGGCACCACACAGCAUGAAUUCUUUUU
CCAAAAAUAUAACAGACUUGAAGGAAUUCGAGUAUUCAAGGUAGUGUGGAAUC
AGCCUCACUUUGUGCUUUCAGUGUGAUAUCUACUUUUUAACACCCACGGC
UGAAGAGUUGAUAAUUGCCUCUCACACAUAUAUGCGAUGUUGAUGAC

MdGDH1L-mRNA

GGGUUGGCACUUCGAUCAUGCGUCCUACAGUCUGCAUCGCUUCCUCUCCACUCUC
UGCUUCGGAUCUCUCCUCGCUUCCUCCUCAUCUUUCUGCUUCCUCUCAC
GAUCUUCUCGCCUCCUCAUCUGCACCUCUUUCUCUAGCCUUCAAGAGGAAUC
AUGGUJAGAUUUCAUGCGGUGUCAUGAAAGACUGCCAGGCUUUAGAAAGGUUG
CUUUAUGAGCUUUUGCCCAGGACUAGGAGGAGGAACAAACAGAUCUUUUAACAA
UUCAAAACGUAUUCUGCGUUGUGCUGACACGCUUUGUUGGCUUUGG
ACGAGAUCAGAGUACUUCAUUAAAGGUUCGCACGGCCACUAAAGGAA
CAUCCUCCACCCCUCAUAGCAUGCAUGCAGAUUAAUGCCUCCCCCUUCCGUUGCCUCUC
CAGUGCUCAUGGCAAAAAACCACACGUCACCCACUGCUUCCACACGCUUCCACAAUCA
AACCUCACAAAAUCCGAUAAUGGAGUAAUGACCUUGCUUUUGCUCUGAG
GCAGACACUUGAGGACAAAGAUGAAUCCAUAGUGGCAACGAAACUAAACUUU
AAGUUGCGCUUGCCUUGGGAUGGAGCUCUACGUUGAGAAAGAUGGACUUAAACAUU
AUACCAUUGGGAUGAAUCCAGGUGAGUGUACUGUACUACUAGGCCAAAGGACGUGGCAGUU
UGGCUCUCAUUUAUGGCUUGGCUUACAAUGUAGCAUGCAUGCAGAGUCAGCCCAUGA
AGGGAGGAAUCAGAUCAUCACCACGGCUAUGCAUGGGAAGCUGCGGGUGUAGUC
ACUUCACUCAGGGGUGCCAAAGGGGUAUAGAUAGUAUAGGUUUUGGCUUUGA
GUCUUCACCCUAGGAGCAACACCCACAGUUGGUGGUUUCGCAACCAAGAUGGCAUCU
UAUGGGAUCCACACCCGAUGUCCAGCACCAGAUUGGGAUGUACUGACAGACC
AUGGCUGGAAUCUCUAGACGAUUACCACAAAGGCUUCAUGGCUACUCACCGCCAGUAG
UCAAAUUUCAAGGGGAGAGAGGCUGUGGUUCGUUUCGAUCGGGCCGAGCCUCU
AUGAUUCCAUUGGAAUCGAGGGUGAUGGGGACAAAGCGAGAGGUUGAGGGAAGCCG
GCUCUAAGACUCUGCAUCUCACUUUCUCAUCUCUCAAACCCACUCUCUCUCUC
CCAUCUCUCCACUGUCUCGCUCUUGGUUUUCUGCUCACUCUCUCUGUCCACU
GAAAUUUCAGAAGAUUCUGAAGUAGGA AAAAGGUUACGGA AAAAUGGAAGGUAGAA
AUUCCAAUAUGGAGUUCUCCAGGCCAAGGAGGAGGAGUUGGUUUCUAAUAGGGAAC
GUJAGGACCUAGAUGUUCCACAUCAAAAACAGCAGCAGUGGGGCUCAUUUAAA
AUUAAUCUAUUGAACGAGACUAUGGAGCUGGGAACCUACUAAGGCUCAGGCAUACU
CUUUUGAGGAAUUGCAACAUUGGAAAACAGCUAAGGCAUAGGCUUUUAUCUA
AGGACGUGCCAAAACUUGGAAUGCCAAUUGAGGAUAUGCUGCAUACUAUAAAUC
AGACUCGUUUCUCUACCAGUGCCAUUGCUCCAGACUCCACCCAAAUACUUACAG
UAAGCGAGUGACGCACAGUUUCUCAAGAGAGAGGAUAUGCUGCUAAACGAGAUAUCACU
AGGAAACUCUAAUCCACAGAAGUCUUGCCAAAAGGAAAUUCUGUACUCAUUAAAAGCA
UUAGUGGACUCGCAAGGCUGACUCUUUCACACCCAAUUGGAAACUCAGGAGGCUAAUACG
UCUGAUUCGAGACGCAUGAUUGGACAAGGAUCAUCAACCCAAAUGGAAACCCCAGAAU
AAGGGUGUUUGAGACGAUGUGCUUGAAGAGCAGCUGACGCUGAUAUUAUC
CGAGAGACGAAGGCAAGCCUCUCACUAACAGGCCCAUUGGGCAGCAGACAGAUA
UUAGUAUGCAAGGUCAGGCAGUUGGAGUUCAGGAGCUGCAACUCUUAUCG
UGAAGGUGCUGGGAACAAACGCGAAAAGCUACUCUGCUUUCUGUGAGAAGG
GGUAGUACGUGUAGUGUGGAAGGUAUUUCUUGAAGUUUUCUUUUAAAUUAU
CGAGAAUAACAAGUGAAGAUUGAGAAUAUGGAAUUUGUGUUAAGGGAUUUGAGAGA
UUGACUUGCGUCUUGGCAAGAUUCAGAAAAUUUAUGGUUUUUUAUAUGGAAUUUU
GGUUUAGGAAUCGAAAGAUUGUCUUUGAGUAAUGUAUUUGAAUUUGGAAA
UUUAUUAGAUUUUGCCUUUUUUUAGGCGCUUGUUGUAUGUAVUUAGGUUGUAAUUA
GGAACUGUUUGGUAUGUUUCUGUAUUCGUAAUUGUUCAGCAUUAAUAUUAUAAUAAUAA
GGGUUUUUC

Here the highlighted ones represent the common m^6A domains.
Appendix S2  Digoxin labeled RNA oligo-nucleotides of *MdMLO19*, *MdMLO19-X1* and *MdGDH1L* for EMSA.

1) UAUAA(MdMLO19)

UAGGGACAAGCGCAAGUUAUXAUAAACAAAGAUGGGCUCA

2) UAUAA(MdMLO19-X1)

CAACGGGUAAGUACCUUUAUXUCUGCAGGUAUGUAUCAUC

3) UGUAA(MdGDH1L)

UUUUAGCUGGAAGUGAUUAUGUXAAAGCAGUGAAAGGGGC

Here X indicates either an A or an A with m^6^-A modification.
Figure S1 MhYTP2 conserved motifs analysis of YTH domain family proteins in Arabidopsis and human.

YTH domain

AtECT5  KADFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------DEKHP
AtECT9  QGELLGDQRDAFPPYXSxENVxHKSxIKV#AxFTrGNNKLDAYREK-----------XyDWA
AtECT10 HPEFVYKxENIKFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------KxGHE
AtECT1  CQEPFSFPRxENIKFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT5  KIDFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT2  KEDFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT4  KDFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
XhYTHF2  CDIDFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT6  KEDFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT7  KEDFVTIDYALPIFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT8  LPSQCTYKSAIPCFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtECT11  LPQCTYKSAIPCFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
KsYTHF2  PSDLFWIKSGVAKILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
KsYTHF3  PRDLFWIKSGVAKILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
KsYTHF1  PRDLFWIKSGVAKILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
AtCPFS  KXSMPLFAQDVFQVXSHKRNFXLSWQCYATQREMKPLKFAKDSVE-----------XxGHE
AAsYTH12  AEDKHPFQRTYFILKLSHLNYDQVSYEKG1ATQMYHPLIEAFKHS0-----------XxGHE
KsYTHDC1  TSDLFKSxENIKFILKYSxENIVHKSxIKV#AxFTrGNNKLDAYREK-----------XxGHE
KsYTHDC2  XPSQCFXPYVRFILXSMtxRLEI3SQVxUTFFYKAKLFAWES----------XxGHE

YTH domain

AtECT5  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT9  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT10  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT11  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT2  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT4  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
XhYTHF2  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
XhYTHF3  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
XhYTHF1  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtCPFS  -WILLFVTRFHPQCOxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT7  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT8  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
AtECT11  CPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
KsYTHF2  GPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
KsYTHF3  GPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
KsYTHF1  GPYLLFKSVxSANxQPQxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
KsYTHDC1  -WILLFVTRFHPQCOxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
KsYTHDC2  -WILLFVTRFHPQCOxAYDVFGVDFRFXVYDVGq-----------QVxVxSxQxPSTKHLTxDVF
The asterisk represents the same amino acid conserved among these proteins. The dot represents the level of the similarity of amino acids conserved among these proteins. The level of the similarity indicated by two dots is higher than that of one dot.
**Figure S2** Confirmation of transgenic 35S::*MhYTP2-Flag* apple callus lines *MhYTP2-F1* and *MhYTP2-F2*.

Confirmation of transgenic 35S::*MhYTP2-Flag* apple callus lines. **a** Quantitative RT-PCR analysis of *MhYTP2* expression in apple callus of WT, *MhYTP2-F1* and *MhYTP2-F2*. **b** Detection of *MhYTP2* accumulation in apple callus by western blot.
**Figure S3** Changes in APX and POD enzyme activities in apple leaves under normal and infected conditions.
Table S1 The amino acid sequence alignment of MdMLO19-X1 identified by us and MdMLO family reported in the literature (Pessina et al., 2014).

| Gene   | Accession number | Amino acid sequence similarity (%) |
|--------|------------------|-------------------------------------|
| MdMLO1 | MDP0000177099    | 28.90                               |
| MdMLO2 | MDP0000240125    | 19.33                               |
| MdMLO3 | MDP0000168575    | 22.99                               |
| MdMLO4 | MDP0000207002    | 37.84                               |
| MdMLO5 | MDP0000163089    | 59.05                               |
| MdMLO6 | MDP0000119433    | 34.70                               |
| MdMLO7 | MDP0000123907    | 58.74                               |
| MdMLO8 | MDP0000218520    | 15.55                               |
| MdMLO9 | MDP0000320797    | 31.13                               |
| MdMLO10| MDP0000196373    | 32.24                               |
| MdMLO11| MDP0000239643    | 60.63                               |
| MdMLO12| MDP0000133162    | 38.98                               |
| MdMLO13| MDP0000142608    | 20.44                               |
| MdMLO14| MDP0000191469    | 21.25                               |
| MdMLO15| MDP0000141595    | 32.33                               |
| MdMLO16| MDP0000191848    | 37.50                               |
| MdMLO17| MDP0000145097    | 29.95                               |
| MdMLO18| MDP0000928368    | 42.83                               |
| MdMLO19| MDP0000168714    | 63.01                               |
| MdMLO20| MDP0000134649    | 37.38                               |
| MdMLO21| MDP0000133760    | 38.30                               |
Table S2  Related comment information of transcription elongation factors

(MD17G1038800, MD14G1104300) and translation initiation factor (MD10G1126600).

| Gene name  | Description | GO                                      |
|------------|-------------|-----------------------------------------|
| MD17G103   | PREDICTED:  | GO:0006368(transcription elongation from |
| 8800       | uncharacterized protein | RNA polymerase II promoter);GO:0070449(elongin complex) |
|            | LOC103404360 [Malus domestica] |                                           |
| MD14G110   | PREDICTED:  | GO:0003677(DNA binding);GO:0003682(chromatin binding);GO:0005634(nucleus);GO:0006351(transcription, DNA-templated);GO:0008270(zinc ion binding) |
| 4300       | uncharacterized protein |                                           |
|            | LOC103954799 [Pyrus x bretschneideri] |                                           |
| MD10G112   | PREDICTED:  | GO:0003743(translation initiation factor activity);GO:0005737(cytoplasm);GO:0006413(translational initiation) |
| 6600       | uncharacterized protein |                                           |
|            | LOC103946617 isoform X1 [Pyrus x bretschneideri] |                                           |
Table S3 Sequences of primers for quantitative real-time PCR.

| Gene      | Primer          | Sequence (5‘–3’)                      |
|-----------|-----------------|---------------------------------------|
| MdMTA     | RT-MdMTA-S      | GAGAACGGTGTTGTTGGAGTT                 |
|           | RT-MdMTA-A      | TCACCACCTTGCTGCTGATTCC               |
| MdMTB     | RT-MdMTB-S      | TCAAGGTGTTGTTGTTTCCCT                |
|           | RT-MdMTB-A      | GTGAAGCAGAAATGAGCCACA                 |
| MdFIP37   | RT-MdFIP37-S    | ATGCAGGCAAGAAGATTGCT                 |
|           | RT-MdFIP37-A    | TGCAAATCTCCTCATTTC                   |
| MdALKBH2  | RT-MdALKBH2-S   | TTCCCCAAATGGTTTACAGC                |
|           | RT-MdALKBH2-A   | TCAGAATGCCAGCCAACACATA               |
| MdALKBH6  | RT-MdALKBH6-S   | AGACGAGTGAGGCTGAAAT                 |
|           | RT-MdALKBH6-A   | CGTAATGAAGTCCGGATGT                  |
| MdALKBH9B | RT-MdALKBH9B-S  | TCTAGGAGCAGAGGGAACA                  |
|           | RT-MdALKBH9B-A  | TTGCCCTAAATCCACATTG                  |
| MdMLO19   | RT-MdMLO19-S    | GCAGCTGCTGGATATGACAA                 |
|           | RT-MdMLO19-A    | TCTTTGCTGCTGCCAAAACT                 |
| MdMLO19-X1| RT-MdMLO19-X1-S | TTCACGACACTGAGGAC                   |
|           | RT-MdMLO19-X1-A | TACGGAGCCTTTGTTCTGCT                |
| MdActin   | RT-MdActin-S    | TGACCGAATGAGCAAGGAAATTAC             |
|           | RT-MdActin-A    | TACTCAGCTTTGGCAATCCACATC             |