

## File S1

# Conserved domain sequences of 87 MiWRKY and 8 AtWRKY proteins used in this study

## Group I

>AtWRKY1-NT

EDGYNWRKYGQKLVKGNEFVRSYYRCTHPNCKAKKQLERSAGGQVVDTVYFGEHHDH

>MiWRKY1-NT

DDGYNWRKYGQKPIKGSEFPRSYKCTHLNCPVKKKVERSSEGQIAQIYKNEHNDH

>MiWRKY2-NT

YDGYNWRKYGQKQVKGSEYPRSYKCTHPNCPVKKKVERSFDGQIAEIVYKGEHNDH

>MiWRKY3-NT

DDPYNWRKYGQKQVKGSEFPRSYKCTHPNCPVKKKVERSLDGQVTEIYKQGHNDH

>MiWRKY4-NT

DDGYNWRKYGQKQVKGSENPERSYKCTYPSCPTKKKVERALDGQITEIVYKGSNDH

>MiWRKY5-NT

DDGYNWRKYGQKPIKGSEFPRSYKCTHLNCPVKKKVERSSEGAITQIYKNEHNDH

>MiWRKY6-NT

DGYNWRKYGQKQVKGSENPERSYKCTFPDCPTKKKVERSLDGQITEIVYKGSNDH

>MiWRKY7-NT

DGFNWRKYGQKHVKGSEFPRSYKCTHPNCEVKKLFERSHDGQITEIYKGTHDHDH

>MiWRKY8-NT

DGYNWRKYGQKLVKGSEFPRSYKCTHPNCEVKKLFERSHDGHIAEIIYKGTHDHDH

>MiWRKY9-NT

DDGYNWRKYGQKQLKGSENPERSYKCTYPNCPTTKKVERSLDGQIETVYKGGHNDH

>MiWRKY10-NT

DDGYSWRKYGQKQVKGSENPERSYKCTFPDCPTKKKVETSLNGQITEIVYKGSNDH

>MiWRKY11-NT

DGYNWRKYGQKQVKGSEYPRSYKCTHPNCQVKKKVERSHEGHITEIYKGAHNDH

>MiWRKY12-NT

DGYNWRKYGQKQVKGSEYPRSYKCTHPKCQVKKKVERSHEGHITEIYKGRHNDH

>MiWRKY13-NT

DVYNWRKYGQKQVKGSEHPRSYKCTHPNCLVTKKVERSYDGQITKIIYKGAHNDH

>MiWRKY14-NT

EDGYNWRKYGQKIVRGNEFIRSYYKCTHPKCQVKKQLDCTHDGKLIDTIYLGQHDHDH

>MiWRKY15-NT

DGYNWRKYGQKQVKSPTGSRSYKCTYSDCCAKKIECSDHTGHVIEIVNKGMHSH

>MiWRKY16-NT

DGYNWRKYGQKQVKSPTGSRSYKCTYSECCAKKIECSDHSGHVIEIVNKGMHSH

>MiWRKY17-NT

EDGYNWRKYGQKFVRGNEFIRSYYKCTHPKCQVKKQLDCTHDGKITDTIYFGQHDHDH

>AtWRKY1-CT

VNDGYRWRKYGQKSVKGSPPRSYYRCSSPGCPVKKHVERSSHDTKLLITTYEGKHDH

>MiWRKY1-CT

LDDGYRWRKYGQKVVKGNPHPRSYKCTSAGCNVRKHVERAPNDPKAVITTYEGKHNH

>MiWRKY2-CT

LSDGFRWRKYGQKVVKGNPYPRSYRCTLKCNVRKHVERASDDPRAFITTYEGKHNH

>MiWRKY3-CT

LDDGYRWRKYGQKVVKGNPYPRSYKCTFPGCNVRKHVERASTDPKAVITTYEGKHNH

>MiWRKY4-CT

LDDGYRWRKYGQKVVKGNPNPRSYKCTHPGCPVRKHVERASHDLRAVITTYEGKHNH

>MiWRKY5-CT

LDDGYRWRKYGQKVVKGNPYPRSYKCTSAGCNVRKHVERAPTDPKAVITTYEGKHNH

>MiWRKY6-CT

LDDGYRWRKYGQKVVKGNPNPRSYKCTTTGCPVRKHVERASHDTRAVITTYEGKHNH

>MiWRKY7-CT

LDDGYRWRKYGQKVVRGNPNPRSYKCTNAGCPVRKHVERASHDPKAVITTYEGKHNH

>MiWRKY8-CT

LDDGYRWRKYGQKVVRGNPNPRSYKCTNAGCPVRKHVERASHDPKAVITTYEGKHNH

>MiWRKY9-CT

LDDGYRWRKYGQKVVKGNPNPRSYKCTHPGCPVRKHVERASHDLRAVITAYVGKHNH

>MiWRKY10-CT

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>MiWRKY11-CT

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>MiWRKY12-CT

LDDGYRWRKYGQKVVKGNPNPRSYKCTSAGCTVRKHVERASHDLKSVITTYEGKHNH

>MiWRKY13-CT

LDDGYRWRKYGQKVVKGNPNPRSYKCTSAGCLVRKHVERASHNLKCVITTYEGKHNH

>MiWRKY14-CT

LNDGFRWRKYGQKLVKGNPNPRNYYRCSSGCPVKKHVERASHNSKMOVITTYEGQHNH

>MiWRKY15-CT

DGYRWRKYGQKMKVGNPNPRNYYRCTSAGCPVRKHIEAVDNTSAVIITYKGVHHDH

>MiWRKY16-CT

DGYRWRKYGQKMKVGNPNPRNYYRCTSAGCPVRKHIEAVDNTSAVIITYKGVHHDH

>MiWRKY17-CT

LNDGFRWRKYGQKLVKGNPNPRNYYRCSSGCPVKKHVERAKHNPKMOVITTYEGQHNH

## Group II-a

>AtWRKY18

VKDGFQWRKYGQKVTRDNPSPRAYFRCSFAPSCPVKKKVQRSAEDPSLLVATYEGTHNH

>MiWRKY75

VKDGQWRKYGQKVTRDNPSPRAYFRCSFAPSCPVKKKVQRSAEPPSVLVATYEGEHNH

>MiWRKY76

VKDGQWRKYGQKVTRDNPSPRAYFKCSFAPSCPVKKKVQRSAEDPTVLVATYEGEHNH

>MiWRKY82

VKDG YQWRKY GQKVTKDNPSPRAYFRCSMASSGCPVKKKVQRCIEDESFLVATYEGEHNH

>MiWRKY83

VKDG YQWRKY GQKVTRDNPSPRAYFKCSFAPSCP VKKKVQRSVEDQSVLVATYEGEHNH

>MiWRKY85

VKDG YQWRKY GQKVTRDNPSPRAYFKCSFAPSCP VQRSVEDQSVLVATYEGEHNH

## Group II-b

>AtWRKY9

NDGCQWRKY GQKTAKGNPCPRAYYRCTVAPGCPVRKQVQRCLEDMSILITTYEGTHNH

>AtWRKY31

DGCQWRKY GQKMAKGNPCPRAYYRCTMAGGCPVRKQVQRC AEDRSILITTYEGNHNH

>MiWRKY72

NDGCQWRKY GQKIAKANPCPRAYYRCTVAPGCPVRKQVQRCLEDMSILITTYEGTHNH

>MiWRKY65

NDGCQWRKY GQKIAKGNPCPRAYYRCTVAPGCPVRKQVQRCVDDMSILITTYEGTHNH

>MiWRKY78

NDGCQWRKY GQKIAKGNPCPRAYYRCTVSPACPV RKQVQRCVEDMSILITTYEGTHNH

>MiWRKY71

NDGCQWRKY GQKIAKGNPCPRAYYRCTFAPSCPVRKQVQRCPEDLSILITTYEGTHNH

>MiWRKY73

NDGCQWRKY GQKIAKGNPCPRAYYRCTLAPSCPVRKQVQRC AEDMSILITTYEGTHNH

>MiWRKY62

DGCQWRKY GQKMAKGNPCPRAYYRCTMASGCPVRKQVQRC AQDQSVLITTYEGNHNH

>MiWRKY79

DGCQWRKY GQKKAKGNPCPRAYYRCTMDSNCPVRKQVQRC AKDRTLITTYEGNHNH

>MiWRKY77

DGCQWRKY GQKMAKGNPCPRAYYRCTMAVGCPVRKQVQRC AEDRTLITTYEGNHNH

>MiWRKY59

NDGCQWRKY GQKMAKGNPCPRAYYRCTMATGCPVRKQVQRC AEDREILITTYEGNHNH

>MiWRKY66

NDGCQWRKY GQKMAKGNPCPRAYYRCTMAAGCPVRKQVQRC ADREILVTITYEGNHSH

>MiWRKY61

DDGCQWRKY GQKTAKGNPCPRAYYRCSMATGCPVRKQVQRC VEDNTILITTYEGNHNH

>MiWRKY69

DGCQWRKY GQKMAKGNPCPRAYYRCTMATGCPVRKQVQRC AEDRTLITTYEGNHNH

>MiWRKY81

DGCQWRKY GQKMAKGNPCPRAYYRCTMAVGCPVRKQVQRC AEDRTLITTYEGIHNH

## Group II-c

>AtWRKY45

LDDGYRWRKY GQKAVKNNPFPRSYKCTEEGCRVKKQVQRQWGDEGVVTTYQGVHTH

>MiWRKY30

LEDGYRWRKY GQKAVKNSPYPRSYRCTSQKCSVKKRVERS FQDPTIVITTYEQHNNH

>MiWRKY41  
LEDGYRWRKYGQKAVKNSPYPRSYRCTSQKCTVKKRVERSFQDPTIVITTYEGQHNH  
>MiWRKY35  
LEDGYRWRKYGQKAVKNSPYPRSYRCTTQKCTVKKRVERSFQDPSIVITTYEGQHNH  
>MiWRKY37  
LEDGYRWRKYGQKAVKNSAYPRSYRCTTQKCTVKKRVERSFQDPSIVITTYEGQHNH  
>MiWRKY50  
LEDGYRWRKYGQKAVKNSPFPRSYRCTNSKCTVKKRVERSSDPTIVITTYEGQHCH  
>MiWRKY68  
LEDGYRWRKYGQKAVKNSPFPRSYRCTNSKCTVKKRVERSSDISIVITTYEGQHCH  
>MiWRKY22  
LDDGYRWRKYGQKAVKNSPHPRSYRCTSAGCGVKKRVERSSDDQTIVVTTYEGQHTH  
>MiWRKY24  
LEDGYRWRKYGQKAVKDSPFPRSYRCTSASCNVKKRVERSFSDPSIVVTTYEGQHTH  
>MiWRKY25  
LDDGYRWRKYGQKAVKNSPHPRSYRCTSTGCGVKKRVERLSNDQAIVVTTYEGQHTH  
>MiWRKY43  
LEDGYRWRKYGQKAVKDSPYPRSYRCTSASCGVKKRVERSSDPGVVVTTYEGQHSH  
>MiWRKY57  
LDDGYKWRKYGQKVVKNTQHPRSYRCTQDNCRVKKRVERLAEDPRMVITTYEGRHVV  
>MiWRKY63  
LDDGYKWRKYGQKVVKNSLHPRSYRCTHNSCRVKKRVERLSEDCRMVITTYEGRHNN  
>MiWRKY48  
LDDGYRWRKYGKKMVKNSPNPRNYYKCSVEGCPVKKRIERDREDPSYVITTYEGFHTH  
>MiWRKY56  
LDDGYRWRKYGKKMVKNSPNPRNYYKCSIEGCPVKKRVERDREDSSYVITTYEGVHTH  
>MiWRKY49  
LDDGYRWRKYGQKAVKNSTYPRSYRCTHHTCNVKKQVQRLSKDTSIVVTTYEGIHNN  
>MiWRKY29  
LDDGYRWRKYGQKTVKTGKFPRSYKCTHKGCNVKKQIQRSSKDEEIVVTTYEGMHTH  
>MiWRKY45  
LDDGYRWRKYGQKTVKSGKFPRSYKCTHKGCNVKKQIQRSSKDEGIVVTTYEGKHTH  
>MiWRKY27  
LDDGYRWRKYGQKAVKNNKFPRSYRCTHQGCNVKKQVQRLTKDEGVVLTITYEGMHTH  
>MiWRKY36  
LDDGYRWRKYGQKAVKNNKFPRSYRCTHQGCNVKKQVQRLTKDEGVVLTITYEGMHNN  
>MiWRKY26  
LDDGYRWRKYGQKAVKNNKFPRSYRCTHQGCNVKKQVQRLTKDEGLVVTTYEGMHS  
>MiWRKY34  
LDDGYRWRKYGQKAVKNNKFPRSYRCTHQGCNVKKQVQRLTKDEGVVVTTYEGMHS  
>MiWRKY87  
LDDGYRWRKYGQKAVKNNKFPRSYRCTHQGCNVKKQVQRLTKDEGVVVTTYEGMHS

## Group II-d

AtWRKY21

PDDYSWRKYGQKPIKGSPYPRGYKCSSMRGCPARKHVERCLEDPAMLIVTYEAEHNH

>MiWRKY23

PPDEYSWRKYGQKPIKGSPHPRGYKCSSMRGCPARKHVERCPEDPSMLIVTYEGEHNH

>MiWRKY31

PPDEYSWRKYGQKPIKGSPHPRGYKCSSTVRGCPARKHVERCPADPSMLIVTYEGEHNH

>MiWRKY28

PDDYSWRKYGQKPIKGSPHPRGYKCSSMRGCPARKHVERCLEDPSMLMVTYEGEHNH

>MiWRKY40

DEYSWRKYGQKPIKGSPYPRGYKCSSTMRGCPARKHVERAPDDPTMLIVTYEGEHRH

>MiWRKY42

DEYSWRKYGQKPIKGSPYPRGYKCSSTVRGCPARKHVERASDDPTMLIVTYEGEHRH

>MiWRKY33

PDDYSWRKYGQKPIKGSPHPRGYKCSSVRGCPARKHVERAVDDPSMLVVTYEGEHNH

>MiWRKY55

PDDFSWRKYGQKPIKGSPHPRGYKCSSVRGCPARKHVERALDDPMMLIVTYEGDHNH

>MiWRKY64

PDDFSWRKYGQKPIKGSPHPRGYKCSSVRGCPARKHVERALDDPMMLIVTYEGDHS

## Group II-e

AtWRKY14

PSDLWAWRKYGQKPIKGSPFPRGYRCSSSKGCSARKQVERSRTDPNMLVITYTSEHNH

>MiWRKY38

DMWAWRKYGQKPIKGSPYPRSYRCSSSKGCLARKQVERSSTNPSVFIITYSAEHNH

>MiWRKY47

DLWAWRKYGQKPIKGSPYPRSYRCSSSRGCLARKRVERSSTDPSVFIITYTAEHNH

>MiWRKY52

DVWAWRKYGQKPIKGSPYPRGYRCSSSKGCLARKQVERNRSDPGIFIVTYTGEHNH

>MiWRKY58

DVWAWRKYGQKPIKGSPYPRGYRCSSSKGCLARKQVERHRSDPGMFIVTYTAEHNH

>MiWRKY60

DLWGWRKYGQKPIKGSPYPRNYRCSSSKGCAARKQVERSSTDPNIFIVSYTGDHTH

>MiWRKY67

PSDFWSWRKYGQKPIKGSPHPRGYRCSTSKGCLAKKQVERCRTDASMLIITYTSSH

>MiWRKY84

PSDFWSWRKYGQKPIKGSPYPRGYKCSSTSKGCSAKKQVERCRTGA AVLITYTSSH

>MiWRKY39

PSDSWAWRKYGQKPIKGSPYPRGYRCSSSKGCPARKQVERSSVNPTMLVITYSNEHNH

>MiWRKY54

PSDSWAWRKYGQKPIKGSPYPRGYRCSSSKGCPARKQVERSSVDPSMLLITYSCDHNH

>MiWRKY44

PSDLWAWRKYGQKPIKGSPYPRGYRCSSSKGCSARKQVERSRTDPNMLVITYTSEHNH

>MiWRKY46

PSDLWAWRKYGQKPIKGSPPRGYYRCSSSKGCSARKQVERSRTDPNMLVITYTSEHNH

## Group III

AtWRKY41

HDDIFSWRKYGQKDILGAKFPRSYRCTFRNTQYCWATKQVQRSDGDPPTIFEVYRGTHTC

>MiWRKY18

DGYTWRKYGQKEILNSKYPRSYRCTHQKLYQCPAKKQVQRLDNDPSTFEVYNGEHTC

>MiWRKY19

HDDGYSWRKYGQKDILGAKFPRSYRCTYRNTQNCWATKQVQRSDPTIFEITYRGTHTC

>MiWRKY20

LDDGFSWRKYGQKDILGAKHPRGYRCTHRNIQGCLATKQVQRSDPTIFEITYRGRHTC

>MiWRKY21

LDDGFSWRKYGQKDILGAKHPRGYRCTHRNIQGCLATKQVQRSDPTIFEITYRGRHTC

>MiWRKY32

DDGFSWRKYGQKEILGAIYPRGYRCTHRHAQGCLATKLVQRSDPTIFEVYRGRHTC

>MiWRKY53

DDGYCWRKYGQKDILGASYPRGYRCTHRHAQGCLATKLVQRSDPTIFQVYRGRHTC

>MiWRKY51

LEDPHAWRKYGQKEILNAKFPRSYRCTHKYDQGCRAKQVQRMEDNPEMYETTYIGSHTC

>MiWRKY70

DGHAWRKYGQKEILNAKHPRNYYRCKHKYDQGCRAKQVQRMENHPELYEITYIGSHTC

>MiWRKY74

VDDGHAWRKYGQKVILNAKYPRNYFRCTHKLQGCQATKQVQQTEDNPPLYRSTYYGHHTC

>MiWRKY80

VDDGHAWRKYGQKVILKAKYPRNYFRCTHRHEQGCLATKQVQQIDENPPLYRSTYFGRHTC

>MiWRKY86

DGFSWRKYGQKDILGAKYPRSYRCTYKNtqNCWATKQVQRSDPTIFYITYRGTHTC

The GenBank accession numbers of those AtWRKYs are AtWRKY1: ABJ17102, AtWRKY9: At5g08670, AtWRKY14: AAP21276.1, AtWRKY18: AAM78067, AtWRKY21: AAB63078.1, AtWRKY31: AEE84546.1, AtWRKY41: AEE82969, AtWRKY45: ABD57509.1.