Supplemental Table 1. Primers used for cloning, detection of mutant alleles and RT-PCR.

gARP5 **Clone:**

```
               Clamp   KpnI
```
Arp5genKpnIS 5´ - tag tga ggt acc AAT GAG AGT GTA TAT TGA AAG TGT GAA –3´

```
                    SalI
```
Arp5genSalIA 5´ - TTC TCC GTC GAC AAA CTG ATA ACC AAT –3´

```
                    SalI
```
Arp5genSalS 5´ - TAT CAG TTT GTC GAC GGA GAA CCT ATA TAT –3´

```
               Clamp  EcoRI
```
Arp5genEcoRIA 5´ - gtc tag gaa ttc CGA TCT ATA CAG AGG CTA ACT CAA AT –3´

ARP5 **C-Treminal- His cDNA Clone:**

```
               Clamp    NcoI
```
Arp5-His-S   5´- cat tat cc **atg** gga AAC CCA GAG TCT TAC TTA GAG GAG TT –3´

```
               Clamp XhoI  stop       6-HIS
```
Arp5-HIS-A   5´cat tat ctc gag tca atg gtg atg gtg atg gtg CAA ATA GTT GTA TCG AAT

TTG AT-3´

RT-PCR primers:

Arp5rt2S   5´- AGA TCC TGT TCC ATC CAA ACC TT –3´

Arp5rt2A   5´- TGT GCC AGC CAT CTC GTC TA –3´

Arp5rt4S   5´- GCA GAA GAA GCG TCT GAA AAC A –3´

Arp5rt4A   5´- TCG CCC AAT ACC TCC AGA CT –3´

UBQ10rtS   5´- AGA AGT TCA ATG TTT CGT TTC ATG TAA –3´

UBQ10rtA   5´- GAA CGG AAA CAT AGT AGA ACA CTT ATT CA –3´

Supplemental Table 2. Phenotypes of nuclear ARP deficient *Arabidopsis* plants.

Phenotype	ARP defect			
	ARP4	ARP5	ARP6	ARP7
Small leaves	Yes	Yes	Yes	Yes
Small leaf cells	Yes	Yes	No	Yes
Upward curled leaves	No	Yes	No	Yes
Excess stomata & delayed stomatal development	No	Yes	No	No
Flower early with long days	Yes	No	Yes	No
Flower early with short days	No	No	Yes	No
Small flowers/ Small floral organs	Yes	Yes	Yes	Yes
Delayed floral senescence	Yes	No	No	Yes
HU hypersensitivity	Yes	Yes	ND	ND
MMS hypersensitivity	Yes	Yes	ND	ND
Bleomycin hypersensitivity	Yes	Yes	ND	ND

Supplemental Figure 1. *Arp5* promoter sequence used in gene expression (*ARP5p:GUS*) and complementation (*gARP5*) constructs.

```
aatgagagtg tatattgaaa gtgtgaagtg tgtgaaagag agagagattc

gtgattcgtg cggaaactct aaaaccctag aataattgtt aggttggaga

agaccgagtg ttaattattg caaggaaaat caaaaggccc aaaactttta

tataaaatcg caatattaca cattgtccgt tgggcttatc agctggaaaa

aattggtcgg aatatttcag ttaaagaaaa gcagcaaaaa agacaaccta

tgtcggaata cgaaaacgcc gtctgtgggg atcgaaccca cggccacgtg

gttaaaagcc acgcgctcta ccactgagct aagacggctt acgtttatgt

caacgacatt aaactattta ttcaattatc aagtcttttt taagtcagag

ggttttgggc ctaataatgt ttttccacgt cacggagctc catttgtgtc

ttcttctttc tttcaccgga gaactaggtg gccgaattta cttattacaa

aatcagtcga tgactgacga cggcgactaa atcaacaccg cagtaggaag
          NcoI
agaaagCCAT GG
```

The 562 bp promoter sequence spans up to the ATG of the adjacent locus At3g12390.

Supplemental Figure 2. Allignment of *Arabidopsis thaliana* (At) ARP5 protein sequence with homologous sequences from human (Hs) and yeast (Sc).

```
AtArp5  ~~~~~~~~~~~~~~~~~~~~~~~MAFVSRIRRQSDYNTYPSSIPIVIDNGASYFRIGWA...
ScArp5  MSSRDASLTPLKAVVIDDPPLRQTPEPFDEQSAYN..PQS.PIAIDFGSSKLRAGFV...
HsArp5  ~~~~~~~~~~MAANVFPFRDARAAPDPVLEAGPVAHGPLPVPLVLDNGSFQVRAGWACPG

                                  NLS 1
AtArp5  ..GETEPRVVFRNIVQRPRHKATGETVTIVGDLDPSMMKYFDCTRSGPRSPFDSNVVYQF
ScArp5  ..NHATPTHIFPNALIKFRDRKLNKNFTFVG..NDTLLD..QAVRSQSRSPFDGPFVTNW
HsArp5  QDPGPEPRLQFRAVCARGRGGARCASGPQVGNA....LGSLEPLRWMLRSPFDRNVPVNL

AtArp5  EIMEYILDYAFDRLG.ANGSGIDHPILITECACNPVQSRSKMAELLFETYGVPAVAFGVD
ScArp5  NLTEEILDYTFHHLGVVPDNGIPNPILLTERLATVQSQRTNWYQILFETYNVPGVTFGID
HsArp5  ELQELLLDYSFQHLGVSSQGCVDHPIVLTEAVCNPLYSRQMMSELLFECYGIPKVAYGID

AtArp5  AAFS.YKYNQLHGICKKDGIVLCPGFTTTHSIPFVDGEPIYKGSSRTNIGGYHVTDYLKQ
ScArp5  SLFSFYNYNP.SG..NKTGLVISCGHEDTNVIPVVDGAGILTDAKRINWGGHQAVDYLND
HsArp5  SLFSFYHNKPKNSMC..SGLIISSGYQCTHVLPILEGRLDAKNCKRINLGGSQAAGYLQR

AtArp5  LLSLKYPFHSSRFTWEKAEDLKLEHCYIAPDYAS..EIRLFQE.GRKEA.........EE
ScArp5  LMALKYPYFPTKMSYLQYETMYKDYCYVSRNYDE..DIEKILT..LENL.........DT
HsArp5  LLQLKYPGHLAAITLSRMEEILHEHSYIAEDYVEVFPFHNFQNCFFEELHKWRCPDYYEN

AtArp5  KTSYWQLPWIPPPTEVPPSEEEIARKAAIREKQGQRLREMAEAKRVSKINDMENQLISLR
ScArp5  NDVVVEAPF.TEVLQPPQKTEEELRIQAEKRKETGKRLQEQARLKRMEKLVQKQEEFEYFS
HsArp5  NVHKMQLPFSSKLLGSTLTSEE...KQERRQQQLRRLQELNARRREEKLQLDQERLDRLL

AtArp5  FLLKQVDQVEEDDIPTFLSDTGYASRQELESTITKVTQSLRKARGEPKNEPAEYEENPDS
ScArp5  KVRDQLIDEPKKKVLSVLQNAGFDDERDFKKYLHSLEQSLKKAQMVEAEDDSHLDEMNED
HsArp5  YVQELLEDGQMDQFHKALIELNMDSPEELQSYIQKLSIAVEQAKQKILQAEVNLEVDVVD

                              NLS 2
AtArp5  LNNEKYPLMNVPDDILTPEQLKDKKRQMFLKTTAEGRLRARQKRNEEELEKEKRNQLEEE
ScArp5  KTAQKFDLLDIADEDLNEDQIKEKRKQRFLKASQDARQKAKEEKERVAKEEEEKKLKEQQ
HsArp5  SKPETPDLEQLEPSLEDVESMND.FDPLFSEETPGVEKPVTTVQPVFNLAAYHQLFVGTE

AtArp5  RRREN....PESYLEELQAQYKEVLERVEQKKRL.......KTNGSSNGNNKSGGIGRGE
ScArp5  WRETD....LNGWIKDKRLKLNKLIKRRKEKLKLRDEMKDRKSQVSQNRMKNLASLAEDN
HsArp5  RIRAPEIIFQPSLIGEEQAGIAETLQYILDRYPKDIQEMLVQNVFLTGGNTMYPGMKARM

AtArp5  RLSAAQRERMRLLTTAAFDRGKGEDT.FGSRDEDWQLYKLMSKDNDDDEQPDSDEAELA
ScArp5  VKQGAKRNRHQ....ATIDNDP.NDT.FGANDEDWLIYTDITQNPEAFEEALEYEYKDIV
HsArp5  EKELLEMRPFRSSFQVQLASNPVLDAWYGAR..DWALNHL..DDNEVWITRKEYEEKGGE

AtArp5  RLSSRLQE..IDPTFVQK..VEGELSQTS........GEVPRVRPLTEEDYKIVIGIERF
ScArp5  ELERLLLE..HDPNFTEEDTLEAQYDWRNSILHLFLRGPRPHDSENIHEQHQMHLNVERI
HsArp5  YLKEHCASNIYVPIRLPKQASRSSDAQASSKGSAAGGGGAGEQA~~~~~~~~~~~~~~~~

AtArp5  RCPEILFHPNLIGIDQVGLDEMAGT.SIRRLPHDEKELEER...LTSSILMTGGCSLLPG
ScArp5  RVPEVIFQPTMGGQDQAGICELSETILLKFGSQPGKLSQTSIDMVNNVLITGGNAKVPG
HsArp5  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

AtArp5  MNERLECGIRMIRPCGSPINVVRAMDPVLDAWRGASAFAAN.LNFLGNAFTKMDYDEKGE
ScArp5  LKERIVKEFTGFLPTGTNITVNMSSDPSLDAWKGMAALARNEEQYRKTVISKKEYEEYGP
HsArp5  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

AtArp5  DWLRNYQI.RYNYL~~
ScArp5  EYIKEHKLGNTKYFED
HsArp5  ~~~~~~~~~~~~~~~~
```