

GENE	Mutant	Genotyping primers		RT-sqPCR primers
		T-DNA insertion	Wild-type allele	
<i>p24δ3</i> (At1g09580)	GK_029E10	LBG/RPδ3	LPδ3/RPδ3	LPδ3/RTRPδ3
<i>p24δ4</i> (At1g57620)	SAIL_664_A06	LB3/δ43	δ45/δ43c	δ45/δ43c
<i>p24δ5</i> (At1g21900)	SALK_016402C	LBb1/RP241	LP24M11/RP241	LP24M11/RP241
<i>p24δ6</i> (At3g10780)	GK_823G03	LBG/RPGδ6	LPGδ6/RPGδ6	RPGδ6/RTδ63

Table S1. *p24δ3*, *p24δ4*, *p24δ5* and *p24δ6* mutants and PCR primers used for their characterization. Genotyping primers used for the identification of the *p24δ*-1 mutants and RT-sqPCR primers used to verify the absence of mRNA in the mutants. *p24δ4* and *p24δ5* mutants were characterized previously (Montesinos et al. 2012).

p24 genes	Gene	Sequence (5'→3')	Tm (°C)
LPδ3	<i>p24δ3</i>	TATACTGTACCAAGCCACCCG	56.6
RPδ3	<i>p24δ3</i>	CCGTCAGGTAAGTGTCTCG	56.6
RTRPδ3	<i>p24δ3</i>	GATGACTGCTAAGATGCGCCGTG	63.8
δ45	<i>p24δ4</i>	GGATCCACTTAGATCTCCTCAAATT	57.9
δ43c	<i>p24δ4</i>	CACGGTGCCTAAAGGTGCTGT	62.4
LP24M11	<i>p24δ5</i>	GAAGACCACATCGTTCTCCGATGGC	66.7
RP241	<i>p24δ5</i>	TTGGTGATGAAGATTGTTCCC	54.8
LPGδ6	<i>p24δ6</i>	TAAACATACGCGTTACGTCCC	56.5
RPGδ6	<i>p24δ6</i>	TCTCCATATGGGAAGGAACTG	54.2
RTδ63	<i>p24δ6</i>	GGATCCACGACAATAGCTACTCCTA	57.7
Housekeeping genes			
Act25	ACT-2	GTTGGGATGAACCAAGAAGGA	57.3
Act23	ACT-2	GAACCACCGATCCAGACACT	59.4
A5	ACT-7	GGAAAACCTACCACGAAACCAG	64.4
A3	ACT-7	GGATCCAATGGCCGATGGTGAGG	66.1
LB primers			
LBb1	T-DNA	GGATCCCGCGTGGACCGCTTGCTGCAACT	77.7
LBG	T-DNA	ATATTGACCATCATACTCATTGC	50.5
LB3	T-DNA	TTCATAACCAATCTCGATACAC	54.7
COPII related genes			
Sar1A5	<i>SAR1A</i>	ATCCGATATCAGGAAGAACG	60
Sar1A3	<i>SAR1A</i>	GGATCCAGTGTGCTTGAAGAG	57
Sar1B5	<i>SAR1B</i>	GAAGAACGAAATCACGAAACC	61
Sar1B3	<i>SAR1B</i>	GGTGGTCTAACATTGGAATAATG	61
Sec24A5	<i>SEC24A</i>	GTAAGTGATAAGTTGTGATCAATAATG	61
Sec24A3	<i>SEC24A</i>	ATGGCGGTGGAGGTCTACT	59
NRPSec24B	<i>SEC24B</i>	ATCCCAGTCACTGTTGATCTTCTATC	64
NLPSec24B	<i>SEC24B</i>	GTTCTCTCCACCTATGGGAC	60
RPSec24C	<i>SEC24C</i>	TTGCAAGCAGCGGCAGTAGCAC	66
LPSec24C	<i>SEC24C</i>	AGGATTGATCTCCATCTCGTA	58
Sec13A5	<i>SEC13A</i>	GGACAATCATTTGGAAACATGCCA	64
Sec13A3	<i>SEC13A</i>	GGATCCCAGTGTGCTTGAAGAG	65
Sec13B51	<i>SEC13B</i>	TGAAAGCATTAGGAAACAT	52
Sec13B32	<i>SEC13B</i>	ACAGGTCCCTAGAAATTGTATACAGAA	64
Sec31A5	<i>SEC31A</i>	CTCCTCCAGTCCGACCTATGACTC	60
Sec31AIN3	<i>SEC31A</i>	TGGAAGCCAAGAACTGCACTCATC	65
Sec31B52	<i>SEC31B</i>	GGTTGCAGTCGCTATGGTGAA	65
LPSec31B	<i>SEC31B</i>	GAACCTTTGTTGCCAGTTGC	57

Table S2. List of primers used for sqPCR

Name	Gene	Sequence (5'→3')	Tm (°C)
p24 genes			
qPCRd35F	<i>p24δ3</i>	GACTGCTAAGATGCGCCGTGAA	59
qPCRd35R	<i>p24δ3</i>	ATACAGCCTCACCGACCAGGAAT	59
qPCRd45F	<i>p24δ4</i>	ATTCCGACGACGATCTTACTCTCAG	58
qPCRd45R	<i>p24δ4</i>	CGGTGTGAGGTACAGTAAGCCA	58
qPCRd5utrF	<i>p24δ5</i>	CGTTGTGGTTGGGTTCACAG	58
qPCRd5utrR	<i>p24δ5</i>	GTAAGAGTATCCTCAGGCCAACAGTTTC	57
qPCRd6F	<i>p24δ6</i>	ACGCAAGTGCATTAGGGCAACATAC	60
qPCRd6R	<i>p24δ6</i>	GACCCTCGTGTTGTCTTCGTT	59
qPCRd7F	<i>p24δ7</i>	GGTCGCAGGTCTTCAGTTTGCA	61
qPCRd7R	<i>p24δ7</i>	GCCCTCAGGAGATGGTAATGGTTTC	59
qPCRd8F	<i>p24δ8</i>	GGCTGGTCTACAATTCTGGC	59
qPCRd8R	<i>p24δ8</i>	GTGTGTGCATGTCTACTACTAGATGAG	59
qPCRd9F	<i>p24δ9</i>	TCTTTCCCAACTCAAAGGAGTCTTC	57
qPCRd9R	<i>p24δ9</i>	TTCCAGTTCCGAGAGTACATACTCAA	57
qPCRd10F	<i>p24δ10</i>	CTGAAACTCTACTACGGGGTTGGT	59
qPCRd10R	<i>p24δ10</i>	AGCCATTGATCTAATGTACAACACCC	57
qPCRd11F	<i>p24δ11</i>	GCAGCTCTCAGTTACTGTCGTCGTG	61
qPCRd11R	<i>p24δ11</i>	CCAAGAATGACTTGAGGTGCCGTAGTT	60
qPCRβ2F	<i>p24β2</i>	ACCGATCGTCAAGCTACTGTGAAC	65
qPCRβ2R	<i>p24β2</i>	CCAATCAGTGCAAACGACTCGAAC	65
qPCRβ3F	<i>p24β3</i>	AGCTCTCAGCAAGTCGGTAGCAT	65
qPCRβ3R	<i>p24β3</i>	ACCTCGCTCTGAGGTTTGCTATGT	66
COPII genes			
Sec31AIF	<i>SEC31A</i>	AACGTGATTTGGTGCAGCGTTA	57.9
Sec31AR	<i>SEC31A</i>	TGGAAGCCAAGAACTGCACTCATC	59.5
Sec31BF	<i>SEC31B</i>	CAGCAGCTGGACCCATAGGATTAC	53.9
Sec31BR	<i>SEC31B</i>	GCTGTGTTGGAGGACTTGCTGGTTG	62.2
UPR genes			
qPCRBIP12F	<i>BiP1/2</i>	CCACCGGCCCAAGAG	59.1
qPCRBIP12R	<i>BiP1/2</i>	GGCGTCCACTTCGAATGTG	56.5
qPCRBIP3F	<i>BiP3</i>	AACCGCGAGCTTGAAAAT	55.5
qPCRBIP3R	<i>BiP3</i>	TCCCCTGGGTGCAGGAA	59.2
qPCRERDJ3AF	<i>ERDJ3A</i>	TCAAGTGGTGGTGGTTCAACT	56.9
qPCRERDJ3AR	<i>ERDJ3A</i>	CCCACCGCCCATATTG	54.1
qPCRERDJ3BF	<i>ERDJ3B</i>	GAGGAGGCGGCATGAATATG	55.8
qPCRERDJ3BR	<i>ERDJ3B</i>	CCATCGAACCTCCACCAAA	55.3
qPCRPDI6F	<i>PDI6</i>	CGAAGTGGCTTGTCAATTCCA	55.7
qPCRPDI6R	<i>PDI6</i>	GCGGTTGCGTCCAATT	54.6
qPCRbZIPF	<i>bZIP60s</i>	GGAGACGATGATGCTGTGGCT	59.6
qPCRbZIPR	<i>bZIP60s</i>	CAGGAAACCCAACAGCAGACT	59.5
Housekeeping genes			
qPCRUBIQF	<i>UBIQ10</i>	GGCCTGATTAATCCCTGATGAATAAG	55.7
qPCRUBIQR	<i>UBIQ10</i>	AAAGAGATAACAGGAACGGAAACATAGT	56.1

Table S3. List of primers for qPCR analysis

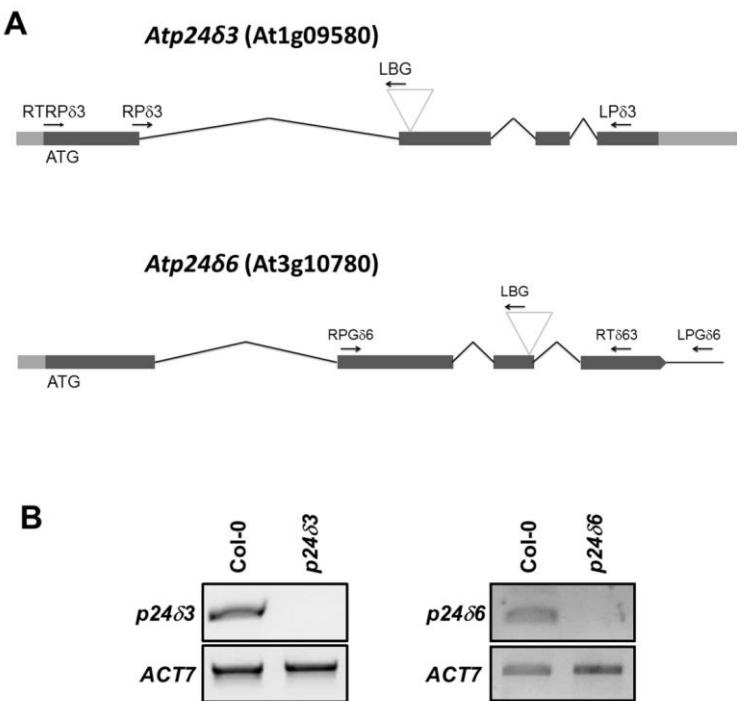


Figure S1. Characterization of the *p24δ3* and *p24δ6* mutants. A. Localization of the T-DNA insertion in the *p24δ3* (GK_020E10) and in the *p24δ6* (GK_823G03) mutants. Diagram of the *p24δ3* and *p24δ6* genes and localization of the T-DNA insertion (triangle). Black boxes represent coding regions and grey boxes represent 5'-UTR and 3'-UTR regions. The primers used to identify the homozygous mutant plants for the T-DNA insertion and for the RT-sqPCR in B are shown. **B.** RT-sqPCR analysis to show the absence of the *p24δ3* and the *p24δ6* mRNA in the *p24δ3* and *p24δ6* mutants, respectively. Total RNA from 7-day-old seedlings of the mutants and wild type (Col-0) were used for the RT-PCR. For PCRs, *p24δ3* gene specific primers, RTPδ3 and LPδ3, and *p24δ6* gene specific primers, RPGδ6 and RTδ63, were used with 36 PCR cycles. *ACT7* was used as a control with 22 cycles. As the insertion is in the middle of the gene no functional transcript is expected to be synthesized.

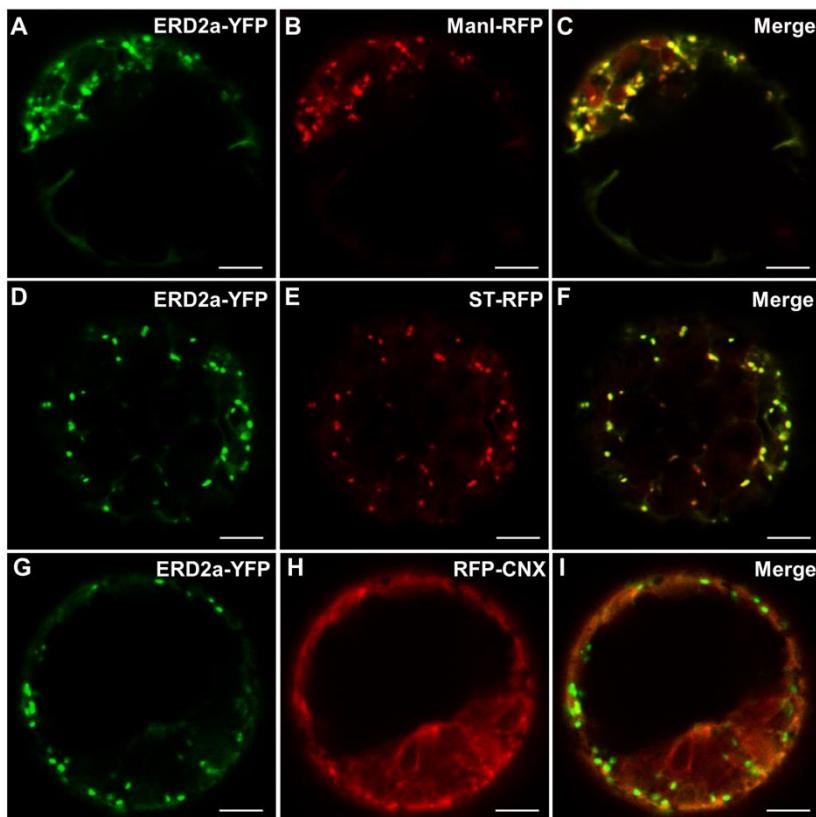


Figure S2. Localization of ERD2a-YFP with Golgi and ER markers in wild-type (Col-0). Transient gene expression in Arabidopsis protoplasts obtained from wild-type (Col-0) plants grown 4 weeks in soil. (A-C) Co-expression of ERD2a-YFP (A) and ManI-RFP (B) (merged image in C). (D-F) Co-expression of ERD2a-YFP (D) and ST-RFP (E) (merged image in F). (G-I) Co-expression of ERD2a-YFP (G) and RFP-CNX (H) (merged image in I).

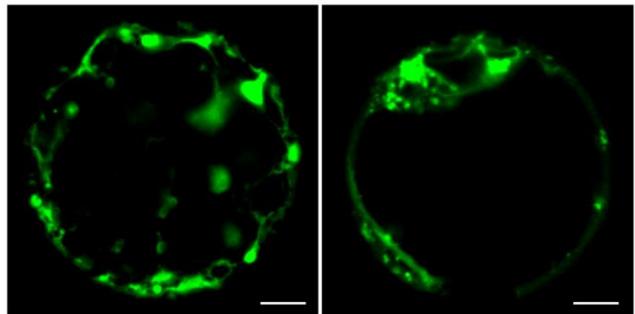


Figure S3. Localization of ERD2a-YFP in the *p24δ3δ4δ5δ6* mutant after cycloheximide treatment. Transient gene expression in *Arabidopsis* protoplasts obtained from *p24δ3δ4δ5δ6* plants grown 4 weeks in soil. After 16 h expression, protoplasts were incubated for 4 h in the presence of 100 µM cycloheximide.

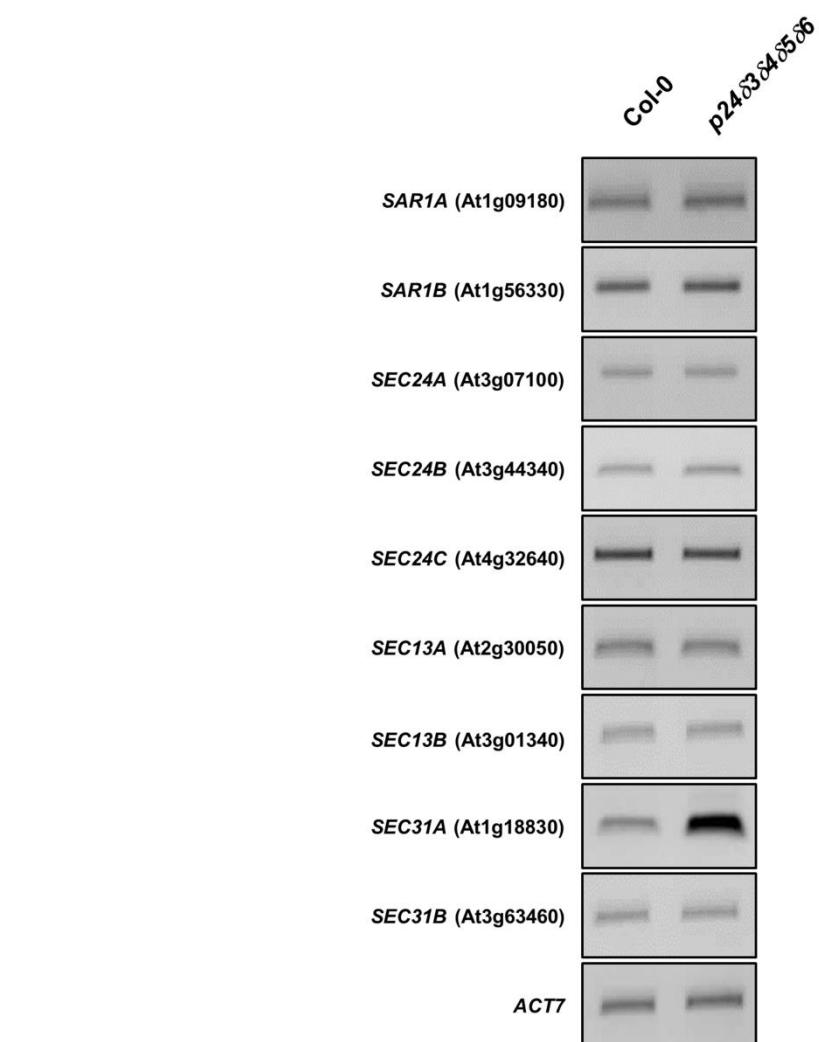


Figure S4. Expression analysis of COPII subunit genes in the *p24δ3δ4δ5δ6* mutant.
Total RNA was extracted from 8-day-old seedlings of wild-type (Col-0) and *p24δ3δ4δ5δ6*. The mRNA was analyzed by RT-sqPCR with specific primers and ACT7 was used as a control.