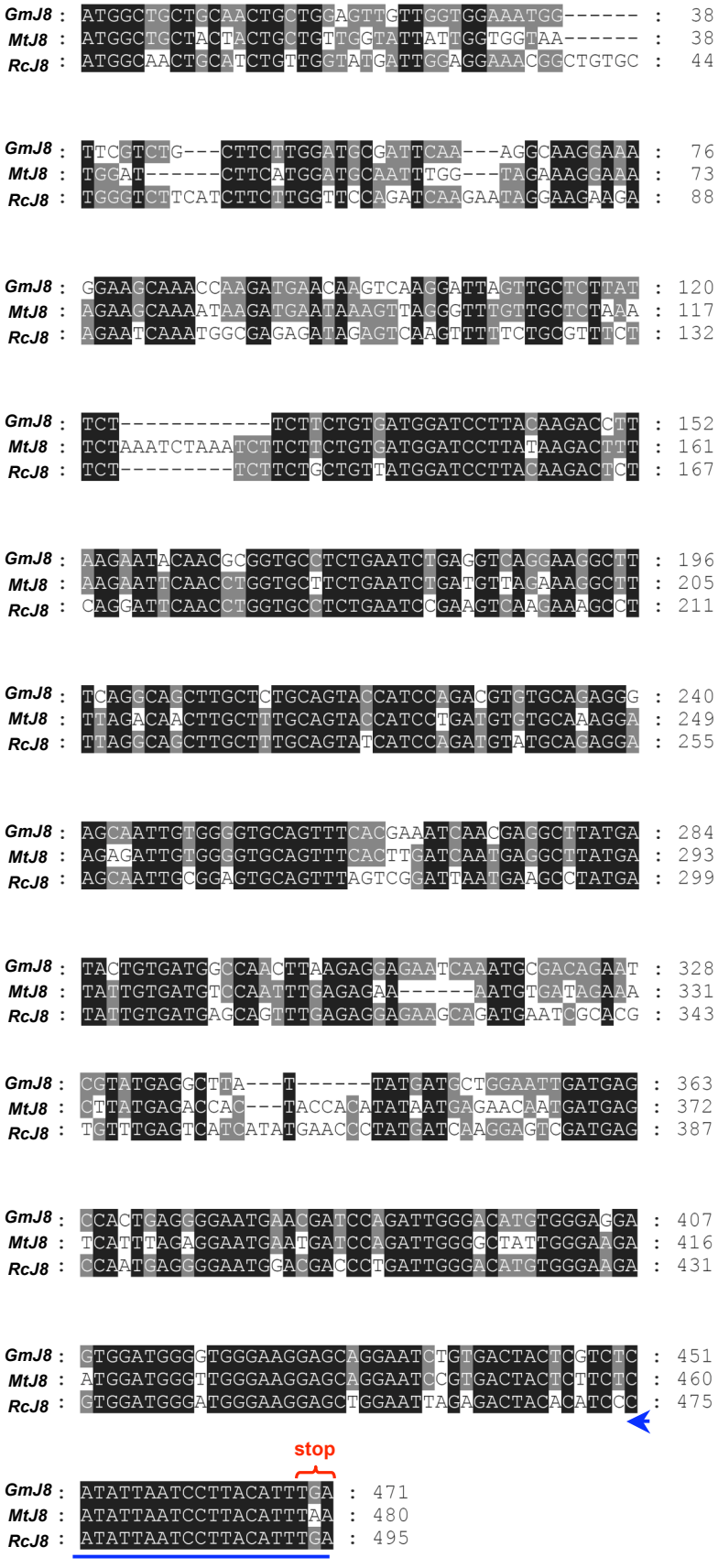
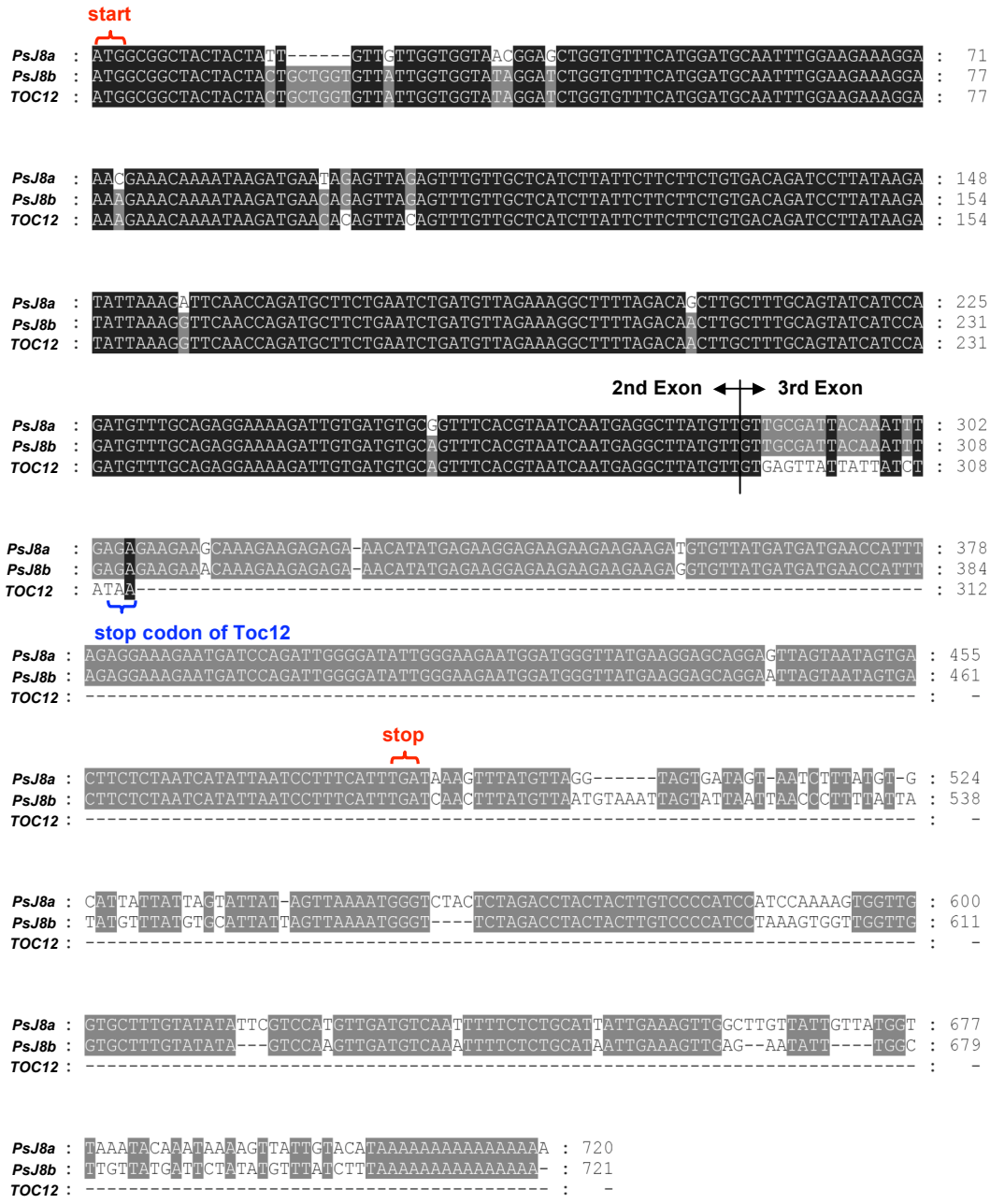
Supplemental Figure S1.



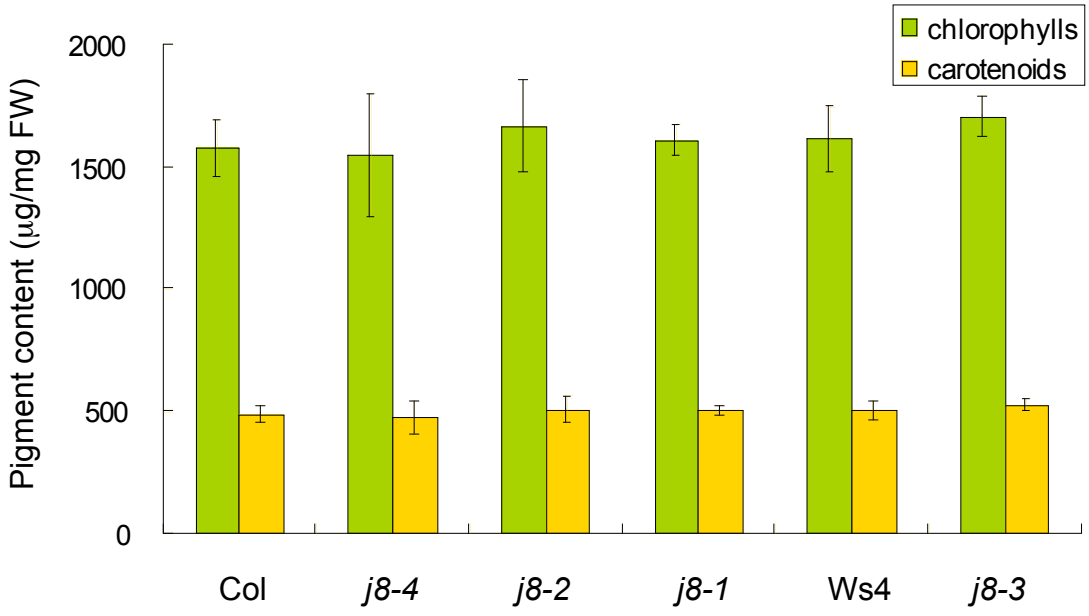
Supplemental Figure S1. Alignment of *J8* cDNA sequences from *Medicago* (*MtJ8*), soybean (*GmJ8*) and castor bean (*RcJ8*). Position of the PsJ8-R2 primer used for initial amplifications of *PsJ8* from pea is shown as a blue line with an arrowhead indicating the direction of the primer. Stop codons of *J8* cDNAs are marked.

Supplemental Figure S2



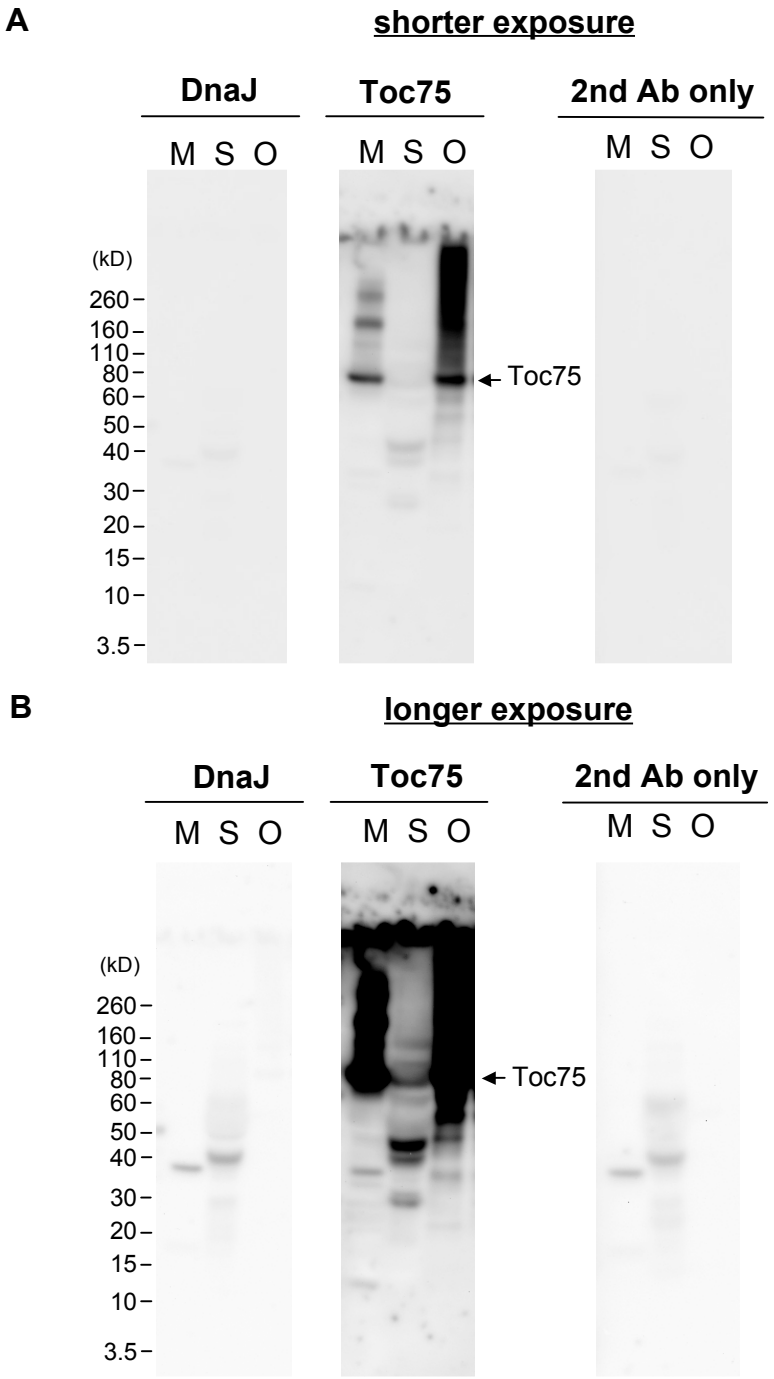
Supplemental Figure S2. Sequence alignment of *PsJ8a* and *PsJ8b* cDNA and *TOC12*. Sequences of *PsJ8a* and *PsJ8b* from the start codon to the poly-A tail are shown. Stop codons of *PsJ8s* and *TOC12* are indicated in red and blue, respectively. The junction between the second and the third exons is also indicated.

Supplemental Figure S3



Supplemental Figure S3. Pigment contents of Arabidopsis *j8* mutants.
Chlorophyll and carotenoid contents of 14-day-old wild type and *j8* mutants grown on MS medium were measured. Data are means ± S. D., n=8.

Supplemental Figure S4



Supplemental Figure S4. The antibody against *E. coli* DnaJ failed to detect specific proteins in various fractions from pea chloroplasts.

Total membrane (M) and soluble (S) proteins (35 μg of proteins in each lane), and the purified outer envelope membranes (O, 12.5 μg of proteins) from pea chloroplasts were analyzed by SDS-PAGE followed by immunoblotting with rabbit antibodies against *E. coli* DnaJ (Stressgen, SPA-410) or pea Toc75, or with the HRP-conjugated donkey-anti-rabbit secondary antibody alone. Proteins were visualized using the HRP–conjugated secondary antibody and the ImmobilonWestern Chemiluminescent HRP system (Millipore), with the UVP BioSpectrum 600 Image System (Ultra Violet Products).

(A) Shorter exposure time of the blots.

(B) Longer exposure time of the blots.

Supplemental Table S1. Sequences of primers used in this study.

Primer Name	Primer Sequence (from 5' to 3')
PsJ8-F1	ggaaagcttttctgggttgttgaggtttttgtgattttaaggatggcggctac
PsJ8-F6	tatgttgtgagttattattatcta
PsJ8-F8	tgtcggctgtggcattcgct
PsJ8-R2	tcaaatgtaaggattaatatg
PsJ8-R7	tggttcatcatcataacacc
PsJ8b-M1x-F	gccgccatggccgcgggattattgcggctactactactgctggtg
PsJ8b-M1x-R	caccagcagtagtagtagccgcaataatcccgcggccatggcggc
Toc12-3'UTR-R	ctaaattcaattcactatttgc
Toc12-R/T-F	caaaataagatgaacacagttacagtttgttgctcatct
Toc12-R/T-R	agatgagcaacaaactgtaactgtgttcatcttattttg
Toc12MM-F	ttgtgagttattattatctaatgatgtaaattttcgttggcaaata
Toc12MM-R	tatttgccaacgaaaatttacatcattagataataataactcacaa
AtJ8-KpnI-F1	cccggtaccatgacaattgctttaacgatc
AtJ8-EcoRI-R1	cccgaattctcaagcgtaaggattaacgtg
AtJ8-F4	atgacaattgctttaacgatcggag
AtJ8-R5	atacacatttggatgatttctttcga
AtJ8-R6	gcttcaacacaatatcgtaagcttc
AtUBQ10-F	ggatctcactcgcgaccg
AtUBQ10-R	cttcttaagcataacagagacgag
AtJ8-Q-F1	tgttcttcttcatcttctgtaatgga
AtJ8-Q-R1	atttttaatttgcttcaacacaatatcgta
AtUBQ10-Q-F	cttcgtcaagactttgaccg
AtUBQ10-Q-R	cttcttaagcataacagagacgag
AtJ8geno-F2	caaattgtctcaaagtattactgtggtgc
AtJ8geno-R2	acaagctaagggaagaagtggatacagaa
Salk-LBa1	tggttcacgtagtgggccatcg
Flag-LB4	cgtgtgccaggtgcccacggaatagt
Wisc-L4	tgatccatgtagatttcccggacatgaag
Gabi-LB	cccatttggacgtgaatgtagacac

Supplemental Table S2. Primers used for amplification of PsJ8s and Toc12 cDNA and genomic DNA and site-directed mutagenesis.

Gene Amplified	Primers Used
PsJ8a/b cDNA[a]	PsJ8-F1 + PsJ8-R2
PsJ8a genomic	PsJ8-F1 + PsJ8-R2
PsJ8b genomic	PsJ8-F1 + Toc12-3'UTR-R; PsJ8-F6 + PsJ8-R7; PsJ8-F8 + PsJ8-R2
PsJ8b-M1x	PsJ8b-M1I-F + PsJ8b-M1I-R
Toc12RR[b] cDNA	PsJ8-F1 + Toc12-3'UTR-R
Toc12 (Toc12RR → TT[c)]	Toc12-R/T-F + Toc12-R/T-R
Toc12MM[d]	Toc12MM-F + Toc12MM-R
AtJ8 cDNA	AtJ8-KpnI-F1 + AtJ8-EcoRI-R1
UBQ10 (RT-PCR)	AtUBQ10-F + AtUBQ10-R
UBQ10 (Q-PCR)	AtUBQ10-Q-F + AtUBQ10-Q-R
AtJ8 (Q-PCR)	AtJ8-Q-F1 + AtJ8-Q-R1

[a] After the initial amplification of PsJ8a/b cDNA using the primers listed, the authentic C-terminus sequence and 3' UTR was obtained by 3' RACE as described in the text. The sequences submitted to the GenBank were the corrected sequences after the 3' RACE.

[b] Toc12RR is the Toc12 we amplified using primers indicated. Residues at position 34 and 36 in Toc12RR are both arginine, but in the published Toc12, these two residues are threonines.

[c] This pair of primers are used for mutating the arginines at positions 34 and 36 in Toc12RR into threonine, which generated the Toc12 with sequence identical to the published Toc12 sequence.

[d] This pair of primers are used for adding two methionine residues to the C terminus of Toc12.