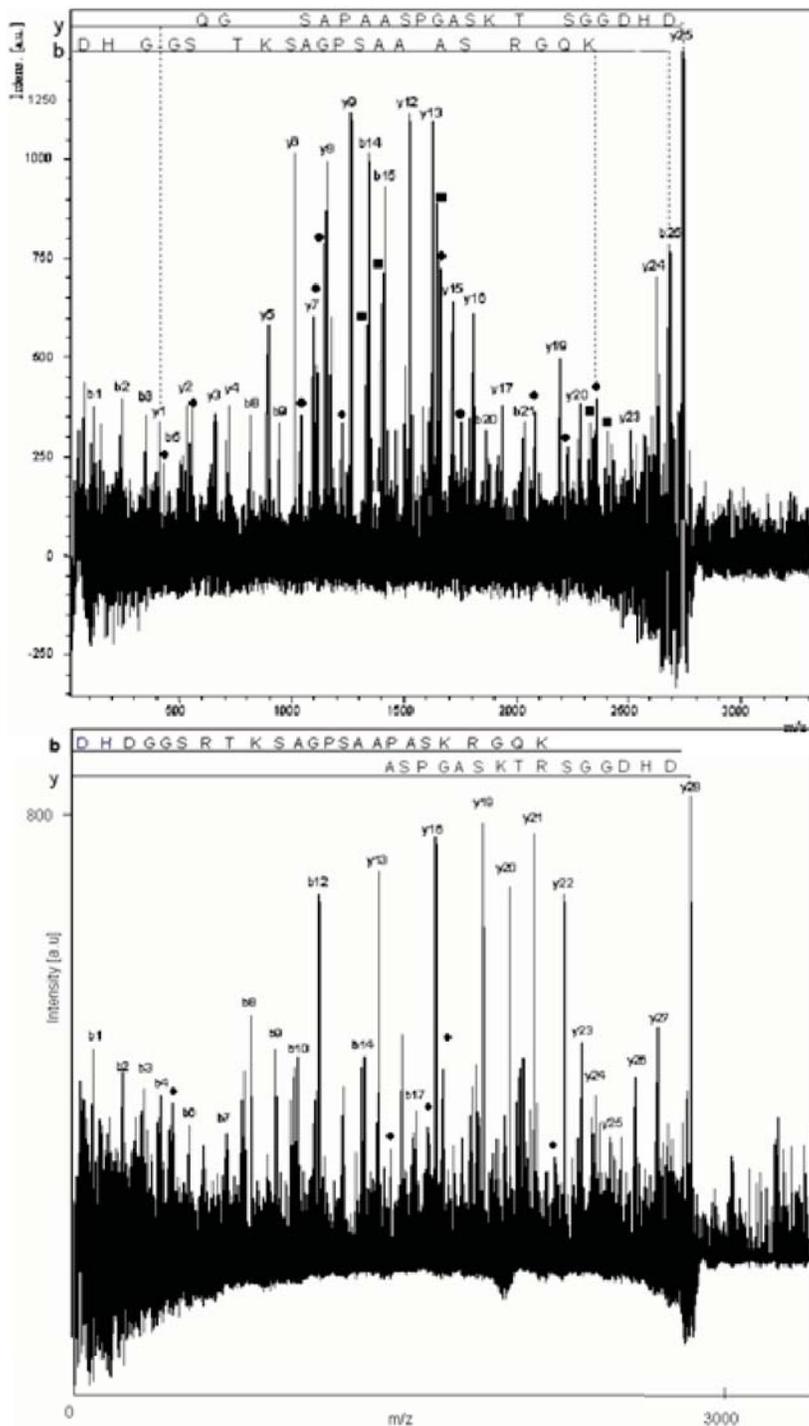


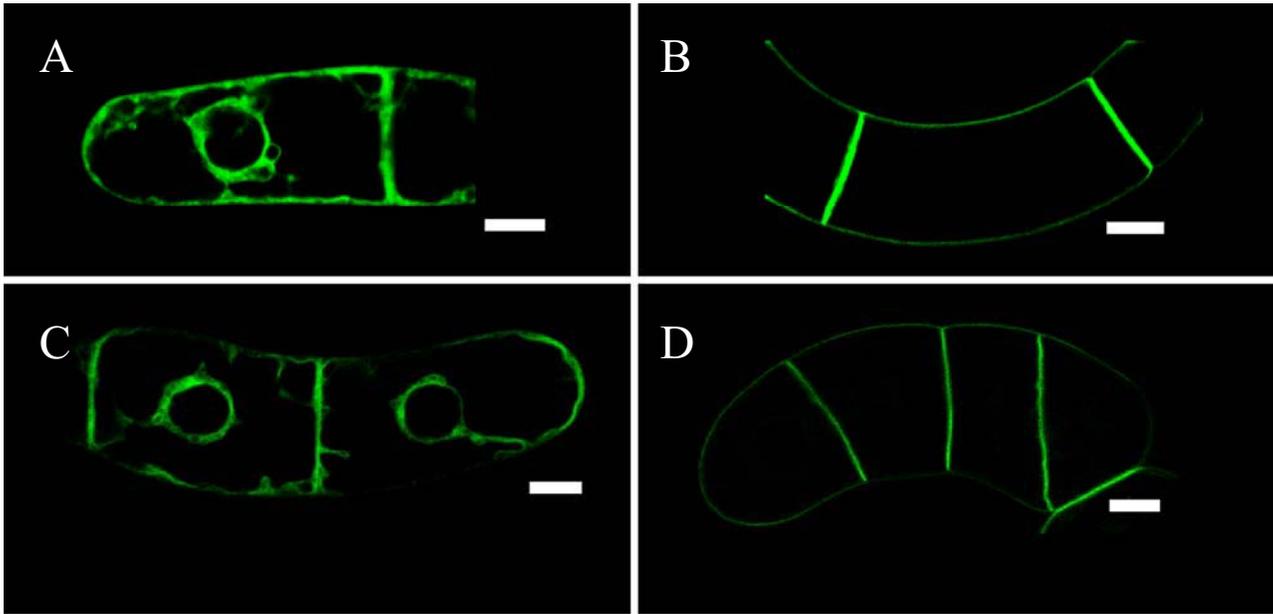
Supplemental Data. Gerber et al. (2009). The Plastidial 2-C-Methyl-D-Erythritol 4-Phosphate Pathway Provides the Isoprenyl Moiety for Protein Geranylgeranylation in Tobacco BY-2 Cells.



**Figure S1.** MALDI-TOF/TOF MS/MS spectra.

**(A)** Spectrum representing the fragmentation of the C- terminal modified peptide DHDGGSRTKSAGPSAAPASKRGQKC + (1) miss cleavage + methyl + S-geranylgeranyl identified by MALDI- TOF-MS in Figure 6. The peptide with the corresponding parent ion mass  $[M+H]^+ = 2756.620$  m/z (indicated by an arrow in Figure 6) was isolated and fragmented by LIFT CID for partial sequencing.

**(B)** Spectrum representing the fragmentation of the C- terminal modified peptide DHDGGSRTKSAGPSAAPASKRGQKCVIL + (1) miss cleavage identified by MALDI- TOF-MS (figure 6). The peptide with the corresponding parent ion mass  $[M+H]^+ = 2852.680$  m/z (indicated by an arrow) was isolated and fragmented by LIFT CID for partial sequencing.



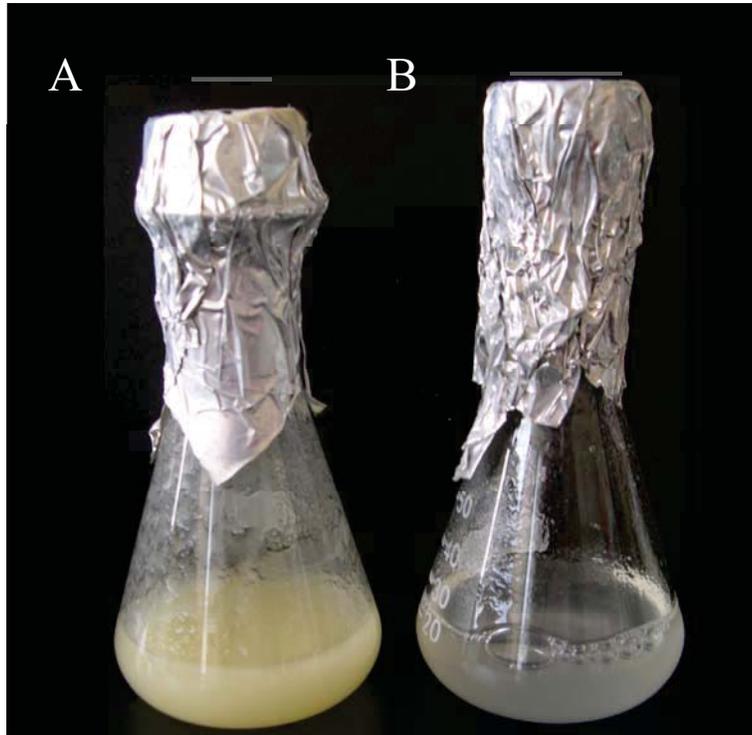
**Figure S2.** Addition of  $\text{Ca}^{2+}$  or the calmodulin inhibitor calmidazolium does not affect the localization of GFP-CaM61 or GFP-BD-CVIL.

**(A)** Localization of GFP-CaM61 in BY-2 cells treated with 1 mM calcium, showing GFP fluorescence associated with ER and perinuclear membranes, plasma membrane, and cytoplasmic strands.

**(B)** Localization of GFP-BD-CVIL in BY-2 cells treated with 1 mM calcium, showing GFP fluorescence associated exclusively with the plasma membrane.

**(C)** Localization of GFP-CaM61 in BY-2 cells treated with 5  $\mu\text{M}$  calmidazolium, showing GFP fluorescence associated with ER and perinuclear membranes, plasma membrane, and cytoplasmic strands.

**(D)** Localization of GFP-BD-CVIL in BY-2 cells treated with 5  $\mu\text{M}$  calmidazolium, showing GFP fluorescence associated with the plasma membrane. White bars correspond to 10  $\mu\text{m}$ .



**Figure S3.** Mevinolin treatment of BY-2 cell cultures arrests cell growth.

**(A)** Control BY-2 cell culture.

**(B)** BY-2 cell culture treated with 5  $\mu$ M mevinolin

**Table S1.** Chi-squared analysis of data in Figure 3\*

	Observed (O)	Expected (E)	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E	X <sup>2</sup>
MV5: PM	161	161	0	0	0	0
MV5: Delocalized	3	3	0	0	0	<b>P &gt; 0.05</b> <b>Consistent</b>
Fos40: PM	81	233	-152	23,104	99.16	4,719.96
Fos40: Delocalized	157	5	152	23,104	4,620.80	0.001 > P Not Consistent
Fos40MV5: PM	10	215	-205	42,025	195.47	10,701.72
Fos40MV5: Delocalized	209	4	205	42,025	10,506.25	0.001 > P Not Consistent
OC40: PM	47	330	-283	80,089	242.69	13,590.86
OC40: Delocalized	289	6	283	80,089	13,348.17	0.001 > P Not Consistent
OC40MV5: PM	0	409	-409	167,281	409	21,319.13
OC40MV5: Delocalized	417	8	409	167,281	20,910.13	0.001 > P Not Consistent

\*All values were compared by Chi-squared analysis against the null hypothesis (i.e., no effect compared to the control). Values with a P > 0.05 were considered to be consistent with the null hypothesis. The only treatment found to be consistent with the null hypothesis was the MV5 treatment.

**Table S2.** Chi-squared analysis of data in Figure 4\*

	Observed (O)	Expected (E)	O-E	(O-E) <sup>2</sup>	(O- E) <sup>2</sup> /E	X <sup>2</sup>
Fos40Gol20: PM	60	60	0	0	0	0
Fos40Gol20: Delocalized	242	242	0	0	0	<b>P &gt; 0.05</b> <b>Consistent</b>
Fos40Fol20: PM	164	47	117	13,689	291.26	363.31
Fos40Fol20: Delocalized	73	190	-117	13,689	72.05	0.001 > P Not Consistent
Fos40GGol20: PM	91	18	73	5,329	296.06	369.06
Fos40GGol20: Delocalized	0	73	-73	5,329	73	0.001 > P Not Consistent
Fos40MVA3: PM	145	29	116	13,456	464	578.03
Fos40MVA3: Delocalized	2	118	-116	13,456	114.03	0.001 > P Not Consistent
Fos40MV5Gol20: PM	32	16	16	256	16	17.08
Fos40MV5Gol20: Delocalized	220	236	-16	256	1.08	0.001 > P Not Consistent
Fos40MV5Fol20: PM	47	19	28	784	41.26	44.19
Fos40MV5Fol20: Delocalized	240	268	-28	784	2.93	0.001 > P Not Consistent
Fos40MV5GGol20: PM	152	9	143	20,449	2,272.11	2,415.11
Fos40MV5GGol20: Delocalized	0	143	-143	20,449	143	0.001 > P Not Consistent
Fos40MV5MVA3: PM	107	7	100	10,000	1,428.57	1,528.57
Fos40MV5MVA3: Delocalized	0	100	-100	10,000	100	0.001 > P Not Consistent

\*All values were compared by Chi-squared analysis against the null hypothesis (i.e., no complementation compared to the Fos40 or Fos40MV5 controls). Values with a P > 0.05 were considered to be consistent with the null hypothesis. The only treatment found to be consistent with the null hypothesis was the Fos40Gol20 treatment.