Online Supporting Information S3d. A demonstration to show the power of **iLoc-Plant** in identifying the multiple locations of proteins via a head-to-head comparison between the results predicted by **iLoc-Plant** and those by **Predotar** (Small et al. Proteomics, 2004, 4, 1581-1590) on the 14 multiple-location proteins in the Online Supporting Information S3c. For facilitating comparison, the corresponding experimental subcellular locations as annotated in Swiss-Prot databank (Release 2011_06 of 31-May-11) are also given. As shown from the results below, of the 14 proteins, 13 were perfectly predicted by **iLoc-Plant** for their multiple-location sites without any false positive and false negative, while 1 was partially correctly predicted. This kind of capacity of **iLoc-Plant** in dealing with multiple-location proteins is far beyond the reach of **Predotar**.

Accsession number	iLoc-Plant	Predotar	Experimental result annotated in Swiss-Prot database
O64967	Endoplasmic reticulum; Mitochondrion	none[a]	Endoplasmic reticulum; Mitochondrion; Plastid
P00455	Plastid; Chloroplast	plastid	Plastid; Chloroplast
P07839	Plastid; Chloroplast	mitochondrial	Plastid; Chloroplast
P08197	Plastid; Chloroplast	mitochondrial	Plastid; Chloroplast
P26956	Plastid; Chloroplast	mitochondrial	Plastid; Chloroplast
P29057	Endoplasmic reticulum; Mitochondrion; Plastid	none[a]	Endoplasmic reticulum; Mitochondrion; Plastid
P29058	Endoplasmic reticulum; Mitochondrion; Plastid	discarding[b]	Endoplasmic reticulum; Mitochondrion; Plastid
P53991	Plastid; Chloroplast	possibly mitochondrial	Plastid; Chloroplast
P56408	Plastid; Chloroplast	discarding[b]	Plastid; Chloroplast
Q00583	Endoplasmic reticulum; Mitochondrion; Plastid	none[a]	Endoplasmic reticulum; Mitochondrion; Plastid
Q09099	Plastid; Chloroplast	discarding[b]	Plastid; Chloroplast
Q41142	Endoplasmic reticulum; Plastid; Vacuole	none[a]	Endoplasmic reticulum; Plastid; Vacuole
Q9FGM0	Mitochondrion; Plastid; Chloroplast	plastid	Mitochondrion; Plastid; Chloroplast
Q9M5P4	Plastid; Chloroplast	plastid	Plastid; Chloroplast

[a] In the output of Predotar, "none" means "no target sequence".
[b] In the output of Predotar, "discarding" means "reject to predict the query protein".