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[\[Molecular Biology\] Plant Biologists find Import of Proteins into Chloroplasts is Dependent on Age](#)

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Academia Sinica Newsletter (2012/10/31) A research team lead by Dr. Hsou-min LI, a Research Fellow from the Institute of Molecular Biology, Academia Sinica recently discovered that the import of proteins into chloroplasts in plants is dependent on age, upturning the previously accepted notion that transport of proteins into chloroplasts is age-independent. These findings, which further understanding of the aging process in plants, were published in the scholarly journal PLOS Biology on October 30, 2012.

Forty years of molecular biology research clearly shows that gene expression changes with age. Some genes are expressed in young organisms, and some genes are expressed in aged organisms. However, up until now it has been generally believed that inside the cell, transport of proteins is age-independent.

Dr. LI and colleagues investigated pea leaves of different ages and discovered, for the first time, that proteins imported into chloroplasts can be divided into three groups: one group preferentially imports into young chloroplasts, the second group has no special preference, and the third group preferentially imports into older chloroplasts. In addition, the research further identified a signal-peptide motif that is necessary for targeting proteins to older chloroplasts. These findings may have implications for selectively targeting proteins into organelles of aging tissues.

Related Website:

<http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001416>.

Media Contacts:

Dr. Hsou-min LI, Research Fellow, Institute of Molecular Biology, Academia Sinica
mbhmli@imb.sinica.edu.tw (Tel) +886-2-2788-3324

Ms. Mei-hui LIN, Office of the Director General, Central Office of Administration, Academia Sinica
mhlin313@gate.sinica.edu.tw (Tel) +886-2-2789-8821 (Fax) +886-2-2782-1551 (M) 0921-845-234

Ms. Pearl HUANG, Office of the Director General, Central Office of Administration, Academia Sinica
pearlhuang@gate.sinica.edu.tw (Tel) +886-2-2789-8820 (Fax) +886-2-2782-1551 (M) 0912-831-188

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