

Research provides deeper understanding of plant aging

31 October 2012 | News | By BioSpectrum Bureau

Taiwanese research provides deeper understanding of plant aging



Singapore: A research team lead by Dr Hsou-min Li, a research fellow at the Institute of Molecular Biology in Taiwan has discovered that the import of proteins into chloroplasts in plants is dependent on age. The finding upturns 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 *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.