

특강1 A MADS-Box Gene, AGL 20 Regulates Flowering Time in Arabidopsis

Dr. Il Ha Lee

School of Biological Sciences, Seoul National University, Seoul 151-742

The very late-flowering behavior of Arabidopsis winter-annual ecotypes is conferred mainly by two genes, FRIGIDA (FRI) and FLOWERING LOCUS C (FLC). A MADS-box gene, AGAMOUS-LIKE 20 (AGL20), was identified as a FRI suppressor in activation tagging mutagenesis. Overexpression of AGL20 suppresses not only the late flowering of plants that have functional FRI and FLC alleles, but it also suppresses the delayed phase transitions during the vegetative stages of plant development. Interestingly, AGL20 expression is not only positively regulated by the redundant vernalization and autonomous pathways of flowering, but also by the photoperiod pathway. Our results indicate that AGL20 is an important integrator of three pathways controlling flowering in Arabidopsis.

Keywords: MADS-box gene, flowering time, Arabidopsis, plant development