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# *LOV1* Is A FLORAL REPRESSOR THAT NEGATIVELY REGULATES *CO* IN *ARABIDOPSIS*.

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A *lov1-1D (LOng Vegetative phase 1-1D)* mutant is identified that showed late flowering phenotype from activation tagging screening (Weigel et al., Plant Physiology 122:1003 [2000]). The late flowering phenotype of *lov1-1D*is mainly contributed by prolonged growth phases. In *lov1-1D*, a T-DNA was inserted adjacent to a gene that encodes a NAC domain protein that is homologous to petunia *NAM* (*No Apical Meristem*) (Souer et al., Cell 85:159 [1996]). RNA blot analysis showed that 35S enhancers in SKI015 increased transcription level of the NAC domain gene. Furthermore, overexpression of its cDNA recapitulated the original late flowering phenotype, confirming that the gene is responsible for the phenotype. *LOV1*was expressed in early embryogenesis and in the vegetative tissues including shoot apex later on. Semiquantative RT-PCR showed that expression of the clock genes was not affected, but expressions of *CONSTANS (CO), Flowering locus T (FT)* and *Suppressor of CO overexpression 1 (SOC1)* were down regulated in *lov1-1D*. Constitutive expression of *CO*, an output gene of the circadian clock, completely suppressed the late flowering of *lov1-1D*. Furthermore, expression of CO was negatively regulated by LOV1 in a transient assay, suggesting genetic interactions between CO and LOV1. These results suggest that *LOV1*is a floral repressor that negatively regulates *CO* in transcription level. The role of *LOV1* in the control of flowering time will be further discussed.