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Control of Circadian Rhythms and Photoperiodic Flowering by the  
*Arabidopsis GIGANTEA* Gene

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Photoperiodic responses in plants include day-length dependent flowering. Mutations in the *Arabidopsis thaliana* *GIGANTEA* (*GI*) gene cause photoperiod-insensitive flowering and alteration of circadian rhythms. The *GI* gene encodes a protein containing 6 putative transmembrane domains. Circadian expression patterns of the *GI* gene and the clock-associated genes, *LHY* and *CCA1*, are altered in *gi* mutants, showing that *GI* is required for maintaining circadian amplitude and appropriate period length of these genes. The *gi-1* mutation also affects light signaling to the clock, suggesting that *GI* participates in a feedback loop of the plant circadian system.