**Molecular mechanisms of floral repression under long-day conditions in rice**

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Flowering-time of rice, a model plant of short-day plants, is mainly regulated by photoperiods, ambient temperature, and light quality. In this system, blue-light signals can function as floral promotor and red-light signals can function as floral repressors, where both light signals are gated distinctly by circadian clocks. Although many rice genes are involved in this complex system, the role of a floral repressor gene, *Ghd7(Grain number, Plant height, and heading date 7)* is crucial. For example, it is well known that rice cultivation in subarctic area has become a reality by using a loss-of-function allele in a major floral repressor gene, *Ghd7* in rice breeding history. Previously, we have revealed that the transcription of *Ghd7* can be induced by red lights through a combination of distinct phytochrome photoreceptors in rice. Recently, we have revealed that *Ghd7* can transmit ambient temperature information to repress floral transition at lower temperatures using the phyB phytochrome protein as a temperature sensor. Interestingly, this temperature sensing may be a kind posttranscriptional regulation. In my talk, I would like to report the current status of molecular actions related to *Ghd7*, including identification of key cis-regulatory elements to control *Ghd7* transcription.