



The clock component OsLUX regulates rice heading through recruiting OsELF3-1 and OsELF4s to repress Hd1 and Ghd7

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Abstract

Introduction: Circadian clocks coordinate internal physiology and external environmental factors to regulate cereals flowering, which is critical for reproductive growth and optimal yield determination. Objectives: In this study, we aimed to confirm the role of OsLUX in flowering time regulation in rice. Further research illustrates how the OsELF4s–OsELF3-1–OsLUX complex directly regulates flowering-related genes to mediate rice heading. Methods: We identified a circadian gene OsLUX by the MutMap method. The transcription levels of flowering-related genes were evaluated in WT and oslux mutants. OsLUX forms OsEC (OsELF4s–OsELF3-1–OsLUX) complex were supported by yeast two-hybrid, pull down, BiFC, and luciferase complementation assays (LCA). The EMSA, Chip-qPCR, luciferase luminescence images, and relative LUC activity

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