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Abstract Book

Natacha Vieira, Nelson Saibo,
M. Margarida Oliveira (Eds.)

Sociedade Portuguesa de Fisiologia Vegetal

S7/P41: UNCOVERING COLD DISRUPTION OF THE CIRCADIAN CLOCK IN POPLAR

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Dormancy is an adaptive mechanism that allows woody plants to survive at low temperatures during the winter. Disruption of circadian clock genes in winter or under low temperatures, both in long days as in short days, were described in our group few years ago (Ramos et al., 2005). Basic mechanisms of the circadian clock function are similar in herbaceous as well as in woody plants although there are differences in their response to low temperatures (Bieniawska et al., 2008). Woody plants growing in daylight conditions should have a specific transcriptional control above the circadian clock genes, which is responsible of their constitutive transcriptional activation observed under low temperatures conditions. In order to understand this regulatory process, we are analyzing the behavior of a circadian clock gene in poplar. To this aim, we have isolated its promoter region and fused to the luciferase reporter gene. This construct has been transformed into *Populus tremula* x P. alba 717-1B4 INRA clone. Here we present the characterization of these transgenic lines under different conditions of light and temperature.

Ramos et al. (2005). PNAS, vol. 102 Pages 7037-7042.
Bieniawska et al. (2008). Plant Physiol., vol. 147 Pages 263-279.

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