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The entrainment of the circadian clock by light-dark and temperature cycles: Functional analysis of components of involved signaling pathways

CPF is a large gene family that includes photolyases (PLs) and cryptochromes (CRYs). PLs repair DNA damage while CRYs usually act as photoreceptors regulating a variety of biological processes. CRY-DASH (Cryptochrome-*Drosophila*, *Arabidopsis*, *Synechocystis*, *Homo*) is a subclade of CRYs and is discussed as an intermediate form between CRYs and PLs. It has been shown that CRY-DASHs are more similar to PLs structurally and retain repair activity. Though previous studies indicated that CRY-DASHs have signaling roles and some are under the control of circadian clock, little is known about the underlying mechanism.

In the green alga *Chlamydomonas reinhardtii*, a plant CRY and an animal-like CRY (aCRY) as well as two CRY-DASH-like proteins have been found based on the genome sequence. The focus of this work will be on the functional analysis of one of the CRY-DASH proteins.

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