CBGP
Centre de Biologie pour la Gestion des Populations

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Salle de réunion

CIRCADIAN CLOCK AND PHOTOPERIODISM IN THE PEA APHID *ACYRTHOSIPHON PISUM*

par
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The aphid life cycle alternates between sexual and asexual (parthenogenetic) phases. Exposure to short photoperiods trigger the appearance of sexual morphs, which is a paradigmatic example of photoperiodic or seasonal response, i.e. a biological rhythm with a 1 year period. In vertebrates, the molecular mechanism controlling photoperiodism clearly involves the circadian clock, the molecular mechanism governing circadian rhythms (24 h period). In insects, however, the involvement of the circadian clock in photoperiodism is not well understood.

The study of the circadian clock in the pea aphid *Acyrthosiphon pisum* reveals that expression of clock genes is affected by photoperiod. Moreover, clock genes are expressed in the *pars lateralis*, a brain region previously described as essential for the photoperiodic response. This evidence from aphids suggest a participation of the circadian clock in aphid seasonality, similarly to what has been recently shown in some insects.

Nonetheless, further experiments are needed to 1) confirm the participation of circadian clock in the aphid photoperiodism and 2) completely describe the photoperiodic signalling pathway.

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