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SUPPRESSORS OF GENE SILENCING IN THE PLANT VIRAL FAMILY **LUTEOVIRIDAE**

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Gene silencing is a conserved mechanism for controlling gene expression and in plants is associated with viral defense. During this process, sequence specificity is provided by small RNAs that bind to effector proteins called Argonautes. Members of the viral family Luteoviridae are divided into three genera: Luteovirus, Polerovirus and Enamovirus. The *Polerovirus* P0 protein was already shown to suppress plant RNA silencing defense through an F-box domain. We are exploring the existence and the mechanism of action of suppressor proteins in the two other genera of the family Luteoviridae. The Enamovirus PO proved to be a strong suppressor of silencing. Expression of this suppressor in Arabidopsis induced developmental abnormalities that were associated with a reduction in the levels of endogenous small RNAs and an increase in the level of their targets. The action of the protein depends on the interaction with the SKP2 protein through an F-Box-like domain. The viral protein binds to and targets Argonaute proteins for degradation. In contrast to the *Polerovirus* P0, the degradation is abolished in the presence of a proteasome inhibitor. Members of the genera Luteovirus and Polerovirus are phloem-restricted. It is proposed that the action of the Enamovirus P0 on Argonautes and possibly on Dicers and dsRNAbinding proteins may be responsible for phloem relief in this viral genus.

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