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On the Cover: The plant hormone jasmonic acid (JA) serves diverse roles in plant developmental and defense-related processes. The β -oxidation stage of JA biosynthesis requires the peroxisomal enzyme acyl-CoA oxidase (ACX). An Arabidopsis (*Arabidopsis thaliana*) mutant that is defective in *ACX1* and its closely related paralog, *ACX5*, is severely deficient in JA. Loss of JA biosynthetic capacity in *acx1/5* double mutants results in decreased resistance to herbivore attack and reduced pollen viability. However, *acx1/5* mutants accumulate JA in response to infection by the necrotrophic fungal pathogen *Alternaria brassicicola*, suggesting that other ACX isoforms can contribute to JA production. Thus, different types of biotic stress may induce JA synthesis via distinct enzymatic routes. The cover photograph shows a confocal image of a pollinated pistil on a plant that expresses peroxisomal-targeted yellow fluorescent protein under the control of the *ACX1* promoter. Photograph by Abraham J.K. Koo. (See Schilmiller et al., pp. 812–824.)

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^[W] Indicates Web-only data.

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