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Insights: Publications

Harpin, elicitor of the hypersensitive response produced by the plant pathogen Erwinia amylovora

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A proteinaceous elicitor of the plant defense reaction known as the hypersensitive response was isolated from Erwinia amylovora, the bacterium that causes fire blight of pear, apple, and other rosaceous plants. The elicitor, named harpin, is an acidic, heat-stable, cell-envelope-associated protein with an apparent molecular weight of 44 kilodaltons. Harpin caused tobacco leaf lamina to collapse and caused an increase in the pH of bathing solutions of suspension-cultured tobacco cells. The gene encoding harpin (hrpN) was located in the 40-kilobase hrp gene cluster of E. amylovora, sequenced, and mutated with Tn5tac1. The hrpN mutants were not pathogenic to pear, did not elicit the hypersensitive response, and did not produce harpin.