Assay system to screen for compounds inducing PR-gene expression in grape vine (*Vitis* spec.)

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Abstract

Plants respond to pathogen attack by activation of an array of inducible defense responses e.g. PR-proteins (pathogenesis related). Transcription of a β1,3 glucanase gene was found to be induced in grape leaves upon infection with *Plasmopara viticola*. Promoter- and coding sequences of the gene were identified. In transient transformation assays the glucanase::GFP-fusion product was found to be localized exclusively in the cytoplasm of protoplasts derived from a *Vitis* cell culture. A fusion of the glucanase-promoter and the firefly luciferase-coding region was found to be induced by addition of salicylic acid (SA) in transiently transformed protoplasts. The same construct was used to create a stably transformed *Vitis* suspension cell culture for screening and detecting compounds acting as elicitors effectively inducing this PR promoter.

Keywords

PR-proteins, glucanase promoter, luciferase, *Vitis*, plant cell culture, elicitor

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