

Title Biochemical and molecular characterization of induced resistance against *Penicillium digitatum* in citrus fruit

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Abstract

To get an insight into the mechanisms underlying resistance of citrus fruit against *Penicillium digitatum*, we have analyzed at the enzyme activity and gene expression levels the possible involvement of phenylalanine ammonia-lyase (PAL), peroxidase, β -1,3-glucanase and chitinase in the flavedo (outer colored part of the fruit peel) and albedo (the inner white part) in elicited fruit. As a tool to induce resistance, we inoculated oranges with *P. digitatum* and 1 d later fruit were exposed to a hot air treatment at 37 °C for 3 d. All enzyme activities increased in parallel with increased resistance, especially in the albedo, although the highest activities were generally found in the flavedo. Expression of the gene encoding PAL and that of the genes coding for the basic, rather than for the acidic, isoforms of the PR proteins was also induced in both tissues, but most markedly in the albedo.