**Abstract**

Treatment of peach fruit with UV-C light caused a rapid induction of chitinase, beta-1,3-glucanase, and phenylalanine ammonia lyase (PAL) activities starting 6 h after treatment and reaching maximum levels at 96 h after treatment. By 96 h after UV-C treatment, chitinase, beta-1,3-glucanase, and PAL activities in UV-C-treated fruit were over twofold above the levels observed for the control. In nontreated control fruit, no apparent increase in chitinase and beta-1,3-glucanase activities was detected but a minor increase in PAL activity was seen. The transient increase in chitinase, beta-1,3-glucanase, and PAL activities in UV-C-treated fruit was preceded by a gradual activation of the corresponding genes. UV-C-treated fruit showed an increase in accumulation of beta-1,3-glucanase and chitinase mRNAs at 3 h after treatment, which peaked approximately 96 h posttreatment. A similar induction kinetic pattern was observed for PAL mRNA in response to UV-C treatment, except the induction started 6 h after UV-C treatment. These results show that the response of peach fruit to elicitor treatment is similar to that seen in other plant-elicitors interactions and suggests the involvement of peach biochemical defense responses in UV-C-mediated disease resistance.