

Quantification of Camalexin in Several Accessions of *Arabidopsis thaliana* Following Inductions with *Peronospora parasitica* and UV-B Irradiation

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Five accessions of *Arabidopsis thaliana*, Ws-3, Nd-1, Ler, Col-5 and Oy-0, were inoculated with *Peronospora parasitica* isolate Emoy2 and the accumulation of camalexin within infected tissues was measured. The variations in camalexin accumulation in various accessions of *A. thaliana* induced by a specific (*P. parasitica* isolate Emoy2) and a non-specific elicitor (UV-B irradiation) were investigated. Phenotypic examination of Emoy2/Oy-0 revealed that susceptibility was characterized by extensive asexual sporulation of the pathogen, whereas early restriction of the pathogen in infected plant tissues, accompanied by chlorosis and necrosis – which are associated with the hypersensitive response – was observed in Nd-1, Ws-3 and Ler. Partial resistance detected in Col-0 was characterized by low to medium sporulation of the pathogen. Camalexin was monitored by high pressure liquid chromatography (HPLC) and found to accumulate during both compatible and incompatible interactions and also following treatment with the abiotic inducer, UV-B. Among the accessions tested, Ws-3 yielded significantly more camalexin than the other accessions, regardless of which inducers (biotic or abiotic) were used. There was no significant correlation between resistance and camalexin accumulation in the *A. thaliana*/*P. parasitica* interaction. The results suggest that there is genetic variation in camalexin biosynthesis among accessions of *A. thaliana*, rather than variation in types of induction.

KEY WORDS: *Arabidopsis thaliana*; *Peronospora parasitica*; phytoalexin; camalexin; HPLC; disease resistance.

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