

Occurrence of Avenanthramides and Hydroxycinnamoyl-CoA:hydroxyanthranilate *N*-hydroxycinnamoyltransferase Activity in Oat Seeds

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Oat phytoalexins, avenanthramides, occur as constitutive components in seeds. The amounts of each avenanthramide were analyzed. The composition of avenanthramides in dry seeds was different from that in elicitor-treated leaves. In seeds, avenanthramide C was most abundant with an amount two times larger than that of avenanthramide A or B. On the other hand, avenanthramide A was the major component in elicitor-treated leaves. The total amount of avenanthramides in seeds increased 2.5 times during imbibition for 48 h although the composition did not change. The hydroxycinnamoyl-CoA:hydroxyanthranilate *N*-hydroxycinnamoyltransferase (HHT, EC 2.3.1.-) activity, which is responsible for the final condensation step in the avenanthramide biosynthesis, was detected in dry seeds. The activity was localized in endosperm and scutellum, and slightly increased during 48-h imbibition. The enzyme was partially purified by anion exchange chromatography from both dry seeds and elicitor-treated leaves. The activity was separated into two peaks by chromatography, indicating that HHT consists of at least two isoforms. The substrate specificities of HHT isoforms from seeds were different from each other.