

Mechanisms of Biotic Interactions
Fabienne Micheli - Poster-B185

Abstract Title: BIOINFORMATIC ANALYSIS OF GLUTATHIONE PEROXIDASE FAMILY FROM THEOBROMA CACAO AND GENE EXPRESSION DURING MONILIOPHTHORA PERNICIOSA INFECTION

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Abstract

Glutathione peroxidases (GPXs) are enzymes which are part of the antioxidant system of the cell. Mammalian GPXs are known as selenoproteins because containing the selenocysteine (Sec) amino acid. In plants, these proteins are less known. Here, were analyzed the protein structure and the gene expression of five GPXs from Theobroma cacao . The three-dimensional structure of the TcGPXs showed that the catalytic site of Tc PHGPX and TcGPX (2,4 and 5) contain a cysteine while the GPX8 contain a tryptophan. Interestingly, the T. cacao GPX did not show any selenocysteine in their structure. Docking analysis revealed that TcGPXs can bind to selenium. Phylogenetic analysis split plant and mammalian GPXs in two distinct branches. RT-qPCR analysis of TcGPXs during the T. cacao - Moniliophthora perniciosa interaction showed that TcGPX8 gene is overexpressed in the green broom phase of the susceptible cacao variety. In the resistant variety, the TcGPX5 was significantly more expressed in the final stages of the interaction. This study shows that TcGPXs are important targets for the understanding of the T. cacao - M. perniciosa interaction but also for the functionality of these proteins.

Mechanisms of Biotic Interactions
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Abstract Title: CHARACTERIZATION OF FUNGAL COMMUNITIES ASSOCIATED WITH AQUILARIA SPP. FOR THE PRODUCTION OF AGARWOOD

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Abstract

Aquilaria is a tree genus distributed in Southeast Asia, known for its oleoresin production. The induction of this oleoresin is described as a stress reaction by injury and, or fungal infection. In response to this stress, Aquilaria spp. produces an oleoresin that accumulates in the wood. The wood of not-injured trees is clear. The wood of injured trees tints and becomes odorous; we call it Agarwood. The quality of