MLO and SBP genes from *Theobroma cacao* are differencially expressed between resistent and suscetible cacao plants infected with *Moniliophthora perniciosa*

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Among sequences previously identified as potentially envolved in the resistance *versus* susceptibility of *Theobroma cacao* to the fungus *Moniliophthora perniciosa*, the MLO (*Mildew resistance lócus O*) and the SBP (selenium binding protein) genes were found. The MLO gene is characterized as a plant defense and programmed cell death modulator, and the SBP gene was successfully used to increase the rice resistance to *Magnaporthe grisea* by plant transformation, among other applications. The objective of this work was to evaluate the expression of the MLO and SBP genes from *T. cacao* in cacao plants infected by *M. perniciosa*. Varieties of cacao resistant (TSH1188) and suceptible (Catongo) to *M. perniciosa* were inoculated with a suspension of fungus basidiospores (2.10^5. ml^{-1}). After inoculation, the plants were kept for 24h at 25±2ºC under 100% of humidity. Apical meristems were harvested in triplicates at 24, 48 and 72 hours after inoculation (hai) and 30, 60 and 90 days after inoculation (dai). Non-inoculated plants (controls) were kept and harvested in the same conditions. Total RNA was extracted using the RNAqueous Kit® (Ambion). First strand cDNA was obtained using the Revertaid Fisrt Strand cDNA Synthesis Kit (Thermo Scientific, Fermentas). Quantitative PCR (qPCR) of MLO and SBP was obtained using the standard settings of the ABI PRISM 7500 and System of Sequence Detection (SDS) software, v.1.6.3 (Applied Biosystems). The expression levels of MLO and SBP was analyzed on triplicates with the comparative Ct method ($2^{-\Delta\Delta Ct}$) using malate dehydrogenase and actin as endogenous reference genes, and non-inoculated plants (control) were used as a calibrator. At the early stages of infection and in the final stage of the disease, the MLO gene was more expressed in Catongo than in TSH1188. In TSH1188, the highest expression of MLO was observed at 30 dai. The SBP gene was highly expressed in TSH1188 at the late stages after infection while in Catongo, the expression was high at the early stages and then constant until the end of the disease. The involvement in the cacao-*M. perniciosa* interaction of both MLO and SBP genes is discussed.
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