

EXPRESSION, PURIFICATION AND CHARACTERIZATION OF MP-CERATO, A
PUTATIVE ELICITOR PROTEIN OF THE FUNGUS *MONILIOPHTHORA*
PERNICIOSA.

Zaparoli, G.H.A.¹; Garcia, O.¹; Pereira, G.A.G.¹

¹Laboratório de Genômica e Proteômica, Departamento de Genética e Evolução,
Instituto de Biologia, Unicamp, São Paulo, Brazil.

Cerato-platanin (CP) is a secreted phytotoxic protein that was primarily identified in culture filtrates from the Ascomycete *Ceratocystis fimbriata* f.sp. *platani*. CP is the first member of a new protein family known as the Cerato-Platanin Family (Pazzagli et al., 1999). This new family is probably related with pathogen recognition by the host plants inducing defense responses. A protein homologous to CP – Mp-Cerato – has been discovered in genome of the hemibiotrophic Basidiomycete *Moniliophthora perniciosa*, causal agent of the witches broom disease in the cocoa tree. Mp-Cerato is a small protein with 145 amino acids and 15.65 kDa of molecular weight. The bacteria *Escherichia coli* BL21 (DE3) pTRX was used to express recombinant Mp-Cerato in fusion with a His-Tag after its cloning in the pET28a vector without the signal peptide. The purified protein was infiltrated in tobacco leaves and necrosis lesions were detected after 24 hours. Preliminary analyses showed that Mp-Cerato has only one copy in the genome. Gene expression studies displayed that Mp-Cerato it is more expressed during the parasitic stage than the necrotrophic stage of the fungus life. Understanding the molecular function of Mp-Cerato could provide us some clues about the pathogen recognition mechanism in plants and give us some tools to fight against the witches broom disease.

Keywords: phytotoxic protein; *Moniliophthora perniciosa*; necrosis elicitor; Cerato-Platanin Family