Characterization of Interactions Between PthA Protein from *Xanthomonas citri* and Citrus Proteins Involved in Transcription and Translation

Soprano, A.S.[1,2], Souza, T.A.[1,2], Cernadas, R.A.[1], Benedetti, C.E.[1]

[1] Centro de Biologia Molecular e Estrutural – Laboratório Nacional de Luz Síncrotron – Campinas/SP – Brazil
[2] Universidade Estadual de Campinas/SP – Brazil

Citriculture is the second most important agricultural activity in the State of São Paulo (Brazil), the largest sweet orange production area in the world. Citrus canker disease, caused by the bacterium *Xanthomonas axonopodis* pv. *citri* (Xac), is a devastating disease responsible for large losses to the agroindustry every year. Xac affects various citrus species and the canker symptoms induced on sweet oranges, lemons and limes are characterized by pustule-like lesions that develop on both surfaces of the leaf and which later become corky and surrounded by a water-soaked margin. Canker lesions can also develop on stems and fruits and are thought to be the result of intense cell division (hyperplasia) and expansion (hypertrophy) of the host tissues after pathogen infection. The molecular mechanism by Xac causes canker is not entirely known; however, the effector protein PthA, delivered by the type III secretion system, is sufficient to induce the cell hypertrophy and hyperplasia. Recent studies have suggested that members of the PthA/AvrBs3 family act as transcription factors. Therefore, elucidating how PthA activates transcription is important to understanding the development of canker lesions. In this context, we describe here the characterization of new interactions between PthA and sweet orange (*Citrus sinensis*) proteins involved in transcription and translation processes in eukaryotes and which have been associated with mammalian and plant cell proliferation.

Key words: PthA/AvrBs3, *Xanthomonas citri*, citrus canker, cell proliferation

Supported by FAPESP, CNPQ and LNLS (Brazil)