

ANALYSIS OF THE PTHA2 INTERACTIONS WITH CITRUS PROTEINS INVOLVED IN TRANSCRIPTIONAL CONTROL.

Souza, T.A.¹, Cernadas, R.A.¹, Docena C.², Farah, S.C.² & Benedetti, C.E.¹

¹Centro de Biologia Molecular Estrutural – Laboratório Nacional de Luz Síncrotron, Campinas, São Paulo - Brazil

²Instituto de Química, USP, São Paulo, São Paulo - Brazil

A number of studies have shown that members of the *Xanthomonas citri* AvrBs3/PthA protein family are required for the development of canker lesions, including hypertrophy and hyperplasia. These effector proteins are thought to alter transcription of host cell during bacterial infection. To elucidate how *X. citri* PthA activates transcription and to establish its molecular mode of action, a two-hybrid approach was used to identify host proteins that interact with the PthA2 isoform. Among the *Citrus sinensis* proteins identified, we selected for further studies an ubiquitin conjugating enzyme E2-variant (UEV) and an auxin response factor (ARF), both involved in the control of transcription in plants. Interestingly, ARF is homologous to an ARF2 from *Arabidopsis thaliana*, which functions as an AuxRE repressor involved in the auxin signaling. This is consistent with our observation that *X. citri* up-regulates auxin-response genes in citrus (Cernadas RA, Camillo L.R and Benedetti C.E., unpublished results). In addition, *in silico* analysis of the citrus UEV sequence indicates that this protein may participate in the removal of nuclear proteins, in particular transcription factors, by the ubiquitin signalosome complex.