

Identification and Cloning of a New Specific Bacterial ORF from *Xylella fastidiosa* Probably Involved in Sulfur and Reactive Oxygen Species Metabolism

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Xylella fastidiosa is the causal agent of citrus variegated chlorosis (CVC), one of the most destructive diseases of sweet orange cultivars in Brazil. The genome analysis of *X. fastidiosa* open reading frames revealed a curious ORF (XF2066) that represents a glutaredoxin, an enzyme specialized in maintenance of redox osmeostasis, fused to a rhodanase domain, which is related to cyanide and sulfur metabolism. A recent work using proteomic approaches showed that the product of XF2066 ORF is highly expressed by the bacterium. Since that reactive oxygen species and cyanide production by the host are very common processes in defense against pathogen infection and predation, this bi-functional protein, named here Glurho, may play a key role to the bacterial protection. Aiming to functional and structural protein studies we have amplified and cloned the gene of the supposed protective protein. We believe that a detailed biochemical and structural characterization may be very helpful to the understanding of the biochemical mechanisms concerning the infestation and survival of this pathogen in the host. Additionally, once that Glurho proteins are exclusively present in bacteria, they may represent promising targets for therapeutical drugs.

Key words: *glutaredoxin, reactive oxygen species, rhodanase, Xylella fastidiosa*
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