

## NMR SOLUTION STRUCTURE OF THE OUTER MEMBRANE LIPOPROTEIN (OMLA) FROM *XANTHOMONAS AXONOPODIS PV CITRI*

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The outer membrane lipoprotein A (OmlA) belongs to a family of small bacterial lipoproteins of unknown function. In *Xanthomonas axonopodis pv citri*, the *omlA* gene is found adjacently to *fur*, which encodes the ferric uptake regulator, the principal factor of iron homeostasis in bacteria. In order to study the transcriptional regulation of the *omlA/fur* loci, *X. citri* carrying either the *omlA* or the *fur* promoter fused to the green fluorescent protein (GFP) was used to infect orange (*Citrus sinensis*) leaves. Fluorescence microscopy showed that both reporter cells recovered from orange leaves exhibited increased fluorescence relative to cells grown in culture medium. Thus, the *omlA/fur* bidirectional promoter is co-regulated during infection, which suggests an important role of these proteins in bacteria-plant interaction. To get insights into the function of OmlA, the solution structure of the protein was determined by Nuclear Magnetic Resonance (NMR). Molecular modeling and dynamics revealed that OmlA is a relatively unfolded protein at both the N and C termini, however with a folded core characterized by the presence of two small alpha-helices and three anti-parallel beta-strands. This protein fold resembles that of the plug domain of FepA, an outer membrane protein involved in iron uptake, which further stresses a possible connection between OmlA and Fur functions.