CRYSTAL STRUCTURE OF SUFE FROM *XANTHOMONAS AXONOPODIS* PV. CITRI

Guzzo C.R.[1], Silva L.R.[1], Galvão-Botton L.M.P.[1], Barbosa J.A.R.G.[2] and Farah C.S.[1]

[1] Inst. Química, USP; [2] LNLS, Campinas

Xanthomonas axonopodis pv. citri (Xac) SufE (XAC2355) is a member of a family of bacterial proteins conserved in several pathogens and phytopathogens. The *E. coli suf* operon is involved in iron-sulfur (Fe-S) cluster biosynthesis under iron limitation and stress conditions. Fe-S clusters are found in a large variety of proteins involved in electron in processes including electron transfer in the respiratory pathway, substrate binding/activation, iron/sulfur storage, regulation of gene expression, and enzymatic activity. It was recently demonstrated that SufE and SufS form a novel two-component cysteine desulfarase in which SufS catalyses the conversion of L-cysteine to L-alanine forming a protein-bound persulfide intermediate. The sulphur atom is then transferred to SufE from which it is subsequently transferred to target molecules or reduced to sulfide in solution. Here we describe the crystallization and phase determination of Xac SufE crystals. Recombinant SufE was crystallized in space group $P2_12_12_1$ and diffracted up to 1.9 Å resolution at a synchrotron source. The unit cell parameters are a = 45.837, b = 58.507, c = 98.951, a = ß= ? = 90º. The calculated Matthews coefficient indicated the presence of two molecules in the asymmetric unit. Phasing was determined by molecular replacement using *E. coli* SufE model (1MZG) and an interpretable map was obtained and an atomic model was refined. The results of preliminary functional experiments will be presented.