

PURIFICATION, CRYSTALLIZATION AND PRELIMINARY X-RAY ANALYSIS OF POTENTIALLY IMMUNOGENIC LEPTOSPIRAL LIPOPROTEINS

Giuseppe, P. O.¹ and Guimarães, B.G.¹

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

The recent genome sequencing of three *Leptospira interrogans* serovars allowed *in silico* identification of new vaccine candidates against leptospirosis, an infectious disease presumed to be the most widespread zoonosis in the world. Three of the potential antigens revealed by the genome sequence of serovar copenhageni are the predicted lipoproteins LIC10793, LIC12922 and LIC10494. BLAST analysis showed that none of them has any close sequence similarity to proteins of known function. Thus, we started a work aiming at their structural characterization by X-ray crystallography, in order to search for functional clues through the atomic resolution three dimensional structures. The proteins were produced in *Escherichia coli*, purified and submitted to crystallization. Suitable crystals of LIC10793 were obtained using the micro-seeding technique and X-ray diffraction data were collected at the LNLS protein crystallography beamline D03B-MX1. LIC10793 crystals diffract up to 2.2 Å resolution and belong to the space group P2₁2₁2₁, with unit-cell parameters a=77.67 Å, b=84.75 Å, c=130.06 Å. Seleno-methionine labeled LIC10793 was produced and crystallized, aiming at the structure determination using the MAD method. LIC12922 crystals were obtained from initial screenings and diffract to approximately 10 Å resolution. Crystal growth conditions are being optimized.

Acknowledgments:

Financial support: FAPESP, LNLS