GIXD Investigation of GlnB of *H. seropedicae* Adsorbed on Silicon

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Protein adsorption on solid surfaces has a wide range of applications[1]. The use of Grazing Incidence X-Ray techniques to investigate protein structure adsorbed on interfaces is a promising tool that may lead to the understanding of its function. In diazotroph microorganisms, GlnB of *H. seropedicae* signalizes levels of nitrogen for a series of proteins involved in the regulation of expression and activity of nitrogenase complex. The GlnB-HS structure was already determined by x-ray diffraction revealing a trimmer of (36kDa)[2].

The subject of this investigation is to understand the interaction of protein GlnB-Hs, a globular protein, on Si (111) and Si(100) surfaces under different conditions of deposition. The spin coating technique[3] was used to obtain a uniform thin film. This experiment was conducted on a Huber six-circles diffractometer, at XRD2 beamline(LNLS- Brazil), with energy tuned to approximately 7Kev. The results were used to obtain information on protein layer assembly. The initial scattering profiles of standard θ-2θ obtained in grazing incidence geometries showed signal of protein layers ordering corresponding to a d-spacing of 30Å in Si(111) and 40Å in Si(100) out of plane direction compatible with crystallographic data.

[1] Gray J., *Curr. Opi. in Struct. Biology*, 2004, **14**, 110. [2] Benelli E., Buck M., Polikarpov I., DeSouza E., Cruz L., Pedrosa F., *Eur. J. Biochem*., 2002, **269**, 3296. [3] Salditt T., Mennicke U., *Langmuir*, 2002, **18**, 8172.

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