

Fiche de proposition de stage de L3 et M1 UFR Chimie et Biologie

x M1C M1CB

L3C L3CB

Adresse et appartenance du laboratoire :

Institut de Biologie Structurale (IBS)
Univ. Grenoble Alpes, CEA, CNRS
71 avenue des Martyrs CS 10090
38044 Grenoble Cedex 9 France
www.ibs.fr

Thématique générale du laboratoire ou du groupe de recherche (par mots clés)

IBS/Membrane and pathogens
<https://www.ibs.fr/research/research-groups/membrane-and-pathogens-group-f-fieschi/>
Neutrophilic NADPH oxidase complex. New surfactants for the in vitro study of membrane proteins. Structural study of membrane proteins related to virulence and pathogenicity.

Thème du stage proposé (en 10 lignes, si possible)

Title: Activity of SpNOX in the presence of Nanoions

DESCRIPTION:

Metallacarborans, metal- boron clusters of nm size, were recently shown to allow solubilizing membrane proteins, thanks to their “*super-chaotropy*” property, *i.e.* their strong tendency -as nano-ions- to adsorb to neutral polar interfaces. Our general project is to investigate the interest of different nano-ions for studying different membrane proteins. We will investigate SpNOX, a bacterial homologous to the NOX proteins involved in immune response. After checking activity of SpNox in membrane is preserved in the presence of nano-ions, we will attempt to solubilize SpNox from membranes using nano-ions, and characterize the size of the species formed during solubilization process. In case of negative results, or if time is available, an other system of membrane protein will be studied.

Méthodologies et/ou techniques qui seront utilisées

Overexpression of membrane protein in E. Coli; Membrane purification; Solubilisation assays; SDS PAGE, with Coomassie staining /Western Blot; activity assays; Characterization of the solubilization process by Analytical ultracentrifugation, size exclusion chromatography coupled to light scattering, and/or negative staining electron microscopy.

Personne à contacter (préciser si nécessaire les créneaux horaires) :

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