



INTERNSHIP PROGRAM FOR INTERNATIONAL STUDENTS

INTERNSHIP SUBJECT FORM

Name of the Host Laboratory	Laboratoire de Synthèse Organique
Website of the Host Laboratory	https://naygroup.wordpress.com/
Research Group	Total Synthesis
Internship Supervisor	Bastien Nay
Internship Subject	Total synthesis and molecular editing of fungal alkaloids
Student's level	<input checked="" type="checkbox"/> Advanced Undergraduate Students (3 rd or 4 th year) <input checked="" type="checkbox"/> Master's students (1 st or 2 nd year) <input checked="" type="checkbox"/> PhD students
Proposed Duration	<input checked="" type="checkbox"/> 3 months <input checked="" type="checkbox"/> 4 months <input type="checkbox"/> 5 months <input type="checkbox"/> 6 months
Prerequisites	Knowledge of theoretical and practical organic chemistry
Internship description (max. 15 lines)	Based on recent results obtained on the total synthesis of heterocyclic natural products, the candidate will apply the new synthetic route to the synthesis of relevant compounds for biological investigation. In particular, the internship will focus on complex cyclotriptides obtained in a few steps from linear peptidic precursors. The total synthesis of various natural products will be accomplished by additional functional group manipulations involving metal-catalyzed amide synthesis and new methods for biomimetic oxygenation. The natural product targets will be fungal alkaloids having various biological properties (antibiotic, anticancer). We will also take into account the innate directing groups of the compounds to "edit" the molecular structure of the natural products and thus increase the diversity for medicinal purposes. These methods, possibly involving metal catalysis, will allow the sequential functionalization of our tricyclic alkaloid skeletons to generate the diversity. This work should lead to the development of new synthetic methods and their application to total synthesis.

The boxes marked with cross implies eligible