

DESIGN AND SYNTHESIS OF NOVEL TOOL COMPOUNDS FOR THE CENTRAL NERVOUS SYSTEM

MSc Thesis Project in Medicinal Chemistry

A central task in medicinal chemistry is to perform a structure-activity relationship (SAR) study. This to optimize target potency, target selectivity, metabolic stability, and/or avoid toxicological effects.

A SAR study is an iterative process, where an analog is first designed with the aim of solving a specific issue/problem. Then its synthesis is pursued, after which the analog is evaluated in the assay(s) of interest. It is hard to get it right the first time, meaning that a learning curve is present. Eventually after a number of iterations the objectives may be met. But there are no guarantees.

We work on targets in the central nervous system (CNS), as we believe there is a strong unmet medical need for new drugs to treat neurological as well as psychiatric disorders. We work closely with pharmacologists both in-house as well as internationally to achieve our goals.

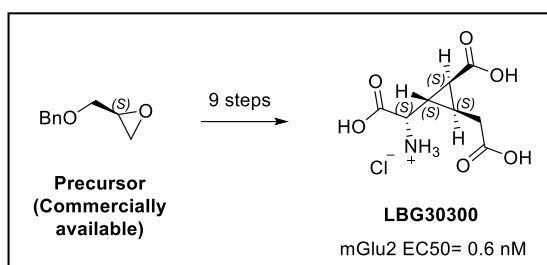
STUDENT SUPERVISION:

I hold bi-weekly project meetings with each student in the group. In addition thereto, I have an open-door policy after 13:00, where you are always welcome to drop by. As an MSc thesis student, you will also have a PhD student or Postdoc as your daily co-supervisor.

ABOUT THE BUNCH GROUP AT ILF:

In the BUNCH group we focus on design and synthesis of small molecules (tool compounds), which can help to understand complex psychiatric diseases such as schizophrenia and depression. We work closely with pharmacologists in the department - and internationally - to achieve this goal.

In the group we have a strong focus on understanding organic chemistry from a mechanistic perspective. This helps us to design molecules in our medicinal chemistry projects. During the semester the group meets for “chemistry meetings”, where we discuss electron pushing problems, retrosyntheses and so on.



The MSc thesis project comprises:

- Literature study
- Design of analogs (computational chemistry)
- Retrosynthetic analysis
- Experimental work (synthesis)
- Thesis writing & oral defense

FACTS:

- ECTS: 45-60 points
- START: As agreed to

QUALIFICATIONS:

- Strong background and interest in organic chemistry

CONTACT:

Lennart Bunch, Professor
Dept. of Drug Design and Pharmacol.
E-mail: lebu@sund.ku.dk
Group homepage: [link](#)