

# "Medicinal Chemistry: Molecular Recognition - Ligand-Receptor Interactions"

## Scholarship for a PhD student

to achieve a doctoral degree (Dr. rer. nat.)

available at the **Department of Pharmacology and Toxicology**

(**project leader: Prof. Dr. Jens Schlossmann**) in the graduate training group GRK760.

The topic of the project is **Receptor Regulation by NO/cGMP-Signalling**

The role of NO/cGMP-signal transduction for the function of membrane and intracellular receptors will be studied. Pharmacological, physiological, biochemical and biophysical methods will be applied to analyze primary and heterologously expressing cells and transgenic animals.

For further information please contact:

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### Information of the study program GRK 760:

The interdisciplinary research and study program (in English) is focused on a major aspect of medicinal chemistry, the molecular interaction of ligands with their biological receptors, aiming at a better understanding of drug actions at the molecular level. Certain aminergic and peptidergic G-protein-coupled receptors as well as small GTP-binding proteins were selected as representative drug targets.

The basic concept of the research program is to investigate the molecular mechanisms of ligand binding and signal transduction by a broad spectrum of methods of molecular and cell biology, biochemistry, biopharmacy, molecular, cellular and organ pharmacology, immunology, organic chemistry, (bio)analytics, biophysics and computational chemistry. Therefore, work groups from the Departments of Chemistry, Pharmacy and Biophysics and the School of Medicine with expertise in the relevant fields are involved.

Based on different approaches the projects are concerned with the structure and functional characterization of targets, e. g. by use of synthesized ligands or by means of new methods which are to be established. The spectrum of methods covers, for instance, modern drug design, syntheses of peptides and non-peptides, NMR spectroscopy of ligands and biomolecules, new fluorescence-based assays, biosensors, molecular

pharmacological studies including cloning, expression and mutagenesis of receptors, structural biology and computer-assisted approaches such as QSAR and molecular modeling.

Highly qualified candidates with academic education in chemistry, pharmacy, biology or biochemistry are invited to apply for the GRK 760. Degrees such as diploma, "Staatsexamen" or equivalent qualifications, e.g. M.Sc., obtained at German or foreign universities are required. PhD scholarships can be awarded for up to three years.

"Qualifizierungsstipendien", i.e. scholarships for graduates from Universities of Applied Sciences who are striving for admission to PhD studies in medicinal chemistry, can be awarded for up to 12 months. Moreover, advanced undergraduates with above-average qualifications are invited to apply for participation in the program as "research students" (to be employed as student assistants, usually 40 hours/month).

For more detailed information on study program and projects, please, visit the homepage of GRK760:

<http://www.chemie.uni-regensburg.de/GK/MedChem/>