

## Emil-Fischer-Center (EFC)

### Speaker

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### Aims and structure

The Emil Fischer Center (EFC) aims at promoting and implementing interdisciplinary research and educational projects in pharmaceutical sciences, food chemistry, and molecular medicine. The Center constitutes an association of eight chairs from the Faculties of Medicine and of Sciences, respectively. The EFC includes the full and associate professors from the following chairs:

- Biochemistry and Pathobiochemistry
- Biochemistry and Molecular Medicine
- Pharmacology and Toxicology
- Clinical Pharmacology and Clinical Toxicology (all Faculty of Medicine)
- Pharmaceutical Chemistry
- Pharmaceutical Technology
- Food Chemistry
- Bioinorganic Chemistry (all Faculty of Sciences)

EFC promotes collaborative research activities between its members and operates the core unit "Bioanalytics" as well as several basic technical facilities. The EFC represents its members vis-à-vis third parties, coordinates interdisciplinary fund-raising activities, and serves as a platform for cooperation with partners from the pharmaceutical and food industries. The interdisciplinary training of post-graduates is accomplished by the associated Emil-Fischer-Graduate School (EFS; compare own report).

### Research and teaching

The EFC studies biomedically relevant target proteins, which are controlled by biologically active substances including drugs, hormones, neurotransmitters, and food constituents. The elucidation of ligand-target protein interactions enables the rational design of new drugs. In addition, the signal transduction mechanism of target proteins, their physiological and pathophysiological role in the mammalian organism and modifications by posttranslational mechanisms are studied.

By combining the individual expertise of the EFC members, several interdisciplinary research initiatives have been successfully established. The GK 1910 „Medicinal chemistry of selective GPCR ligands“, whose second funding period was approved in 2018, represents a major joint initiative in the reporting period. Several EFC working groups are also involved in GK 2162 „Neurodevelopment and Vulnerability of the Central Nervous System“ (compare own report). In the reporting period, more than 130 publications were produced that explicitly mention EFC as a participating institution.

One aim of the EFC is the coordination of interdisciplinary teaching activities between pharmacy, food chemistry, and molecular medicine. A main focus is the organization and development of the "Emil Fischer Graduate Program in Pharmaceutical Sciences and Molecular Medicine (EFS)", which was established shortly after foundation of the EFC. In addition, EFC provides the platform for the EFS lecture series. Instrumental equipment at the EFC comprises mass spectrometers, NMR-spectrometers, a CD-spectrometer, various electrophysiological setups, and a bioinformatics computer cluster.

