

Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP) – Medicinal Chemistry

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„Developing a chemical tool is a very collaborative approach. EU-OPENSREEN is essential for us to network and join forces to develop new chemical tools and leads together with our partners.“

At a glance

- Medicinal Chemistry based hit identification and evaluation as well as hit-to-chemical tool and lead optimization
- State-of-the art medicinal chemistry laboratory equipment for solution-phase chemistry, parallel synthesis and automated purification
- Access to co-localized resources for screening (EU-OPENSREEN partner site), computational chemistry, chemoinformatics, cellular imaging, NMR, peptide synthesis
- Tailor-made probes based on chemical tools e.g. for target deconvolution, fluorescent labeling for assay development and imaging studies

Infrastructure and technical focus

- State-of-the-art medicinal chemistry lab equipped to industry standards
- Hit-triage and chemical optimization of small molecule modulators
- Fragment-based drug discovery approaches
- Structure-based design, scaffold hopping and hybridization
- Consultancy and support for developing chemistry strategies for projects



Projects past and present

2021 - 2024 | ALOOD - Allosteric in Drug Discovery (EU)

2021 - 2023 | Battling Drug Resistance of Tumors using novel SHP2 Inhibitors (DFG)

2021 - 2023 | Design of ligand-based targeted delivery vehicles for the murine C-type lectin receptor Langerin (DFG)

2017 - 2021 | Tumor-targeting SMART imaging agents (DFG/NSF)

Our science in selected publications

From Pyrazolones to Azaindoles: Evolution of Active-Site SHP2 Inhibitors Based on Scaffold Hopping and Bioisosteric Replacement
 ➤ [Med. Chem.](#) 2020, 63, 14780 - 14804

Probing 2H-Indazoles as Templates for SGK1, Tie2, and SRC Kinase Inhibitors
 ➤ [ChemMedChem](#) 2019, 14, 1514-1527

An Activatable Lanthanide Luminescent Probe for Time-Gated Detection of Nitroreductase in Live Bacteria
 ➤ [Angew. Chem. Int. Ed.](#) 2020, 59, 8728

Allosteric Inhibition of a Mammalian Lectin
 ➤ [J. Am. Chem. Soc.](#) 2018, 140, 14924-14934

Mutant KRAS-driven cancers depend on PTPN11/SHP2 phosphatase
 ➤ [Nat. Med.](#) 2018, 24, 954-960

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