

Institute of Bioorganic Chemistry, Polish Academy of Sciences (IBCH PAS)

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Dr. Jacek Kolanowski (Head of Unit)

„We look forward to collaborating with the users from around the world, developing new screening technologies and assays, carrying out exciting projects for the identification of biologically active molecules and deconvolution of their mechanisms of action.”

At a glance

- Specialist screening site with access the European Chemical Biology Library and the European Academic Compound Library
- Expertise in biochemical and cellular assays including high-content screening and image analysis (biological models include proteins, nucleic acids, mammalian cell lines, iPS, primary as well as plant cells and 3D spheroids)
- Employing Artificial Intelligence for high-throughput combinatorial screening
- Close collaboration and consulting on development of fluorescent and bioluminescent probes and assays

Infrastructure and technical focus

- Fully automated AGAMEDE™ screening platform to support a wide range of readouts
- Laboratory for assay development, miniaturization and assay transfer
- High-throughput imaging for live and fixed cells with confocal microscopy
- Combinatorial screening with Artificial Intelligence Algorithm
- Bioinformatic support for large volume data analysis
- Ultrasresolution (<5 nm) fluorescent confocal nanoscopy in live cells (MINIFLUX) & superresolution microscopy (STED, STED-FLIM)
- Unique additional focus: binders of nucleic acids
- Development of assays based on fluorescent probes for simultaneous detection of multiple parameters



Projects past and present

2020 - 2021 | SARS-CoV-2 RNA, target for inhibition of virus replication ➔ [Link](#)

2020 - 2021 | TMPRSS2 – a potential new drug target and a determinant of COVID19 outcome ➔ [Link](#)

2018 - 2023 | **POL-OPENSREEN** (Polish Screening Infrastructure Platform for Chemical Biology) ➔ [Link](#)

2018 - 2021 | **MultiGATE** (Dual-analyte responsive fluorescent probes for a real-time multi-parametric sensing in cellular models) ➔ [Link](#)

Our science in selected publications

High-throughput evolutionary optimization of the induction medium towards recombinant protein production in BY-2 tobacco

➔ [Biotechnology and Bioengineering 2020](#)

Sensitive ADAR editing reporter in cancer cells enables high-throughput screening of small molecule libraries. ➔ [Nucleic Acid Research 2019, 28, 47\(4\), e22.](#)

Small molecule PGC-1α1 protein stabilizers induce adipocyte Ucp1 expression and uncoupled mitochondrial respiration.

➔ [Molecular Metabolism 2018, 9, 28-42](#)

A fluorescent probe for investigating metabolic stability of active transplatin analogues.

➔ [Sensors and Actuators B: Chemical 2018, Volume 255, Part 3, 2721 - 2724](#)

Further info and site-contact

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